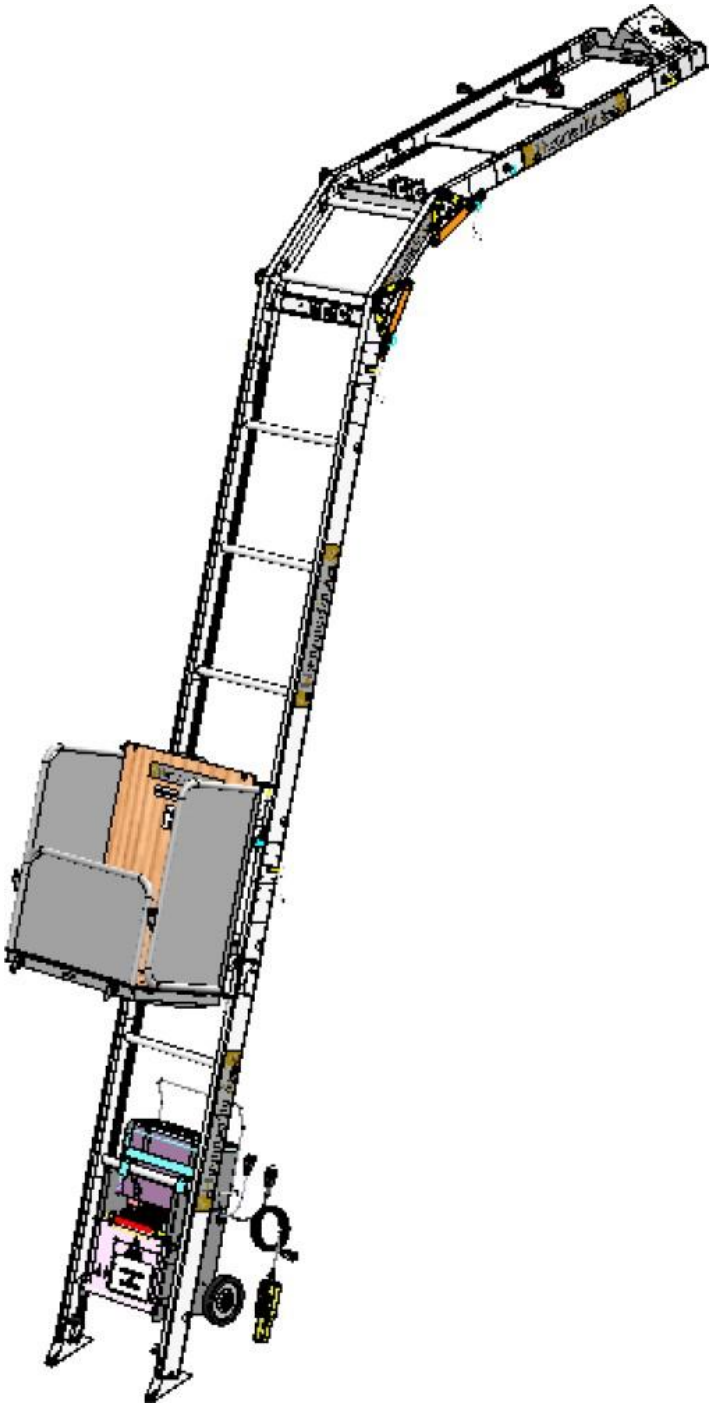
412700000
Index K of 19/11/2024

TECHNICAL INSTRUCTIONS FOR USE

MAXIAL

PREMIUM
EXCELLIUM
EXPERT



Material conform to the guideline CE

CE

Technical manual in English, translated from the original technical notice in French

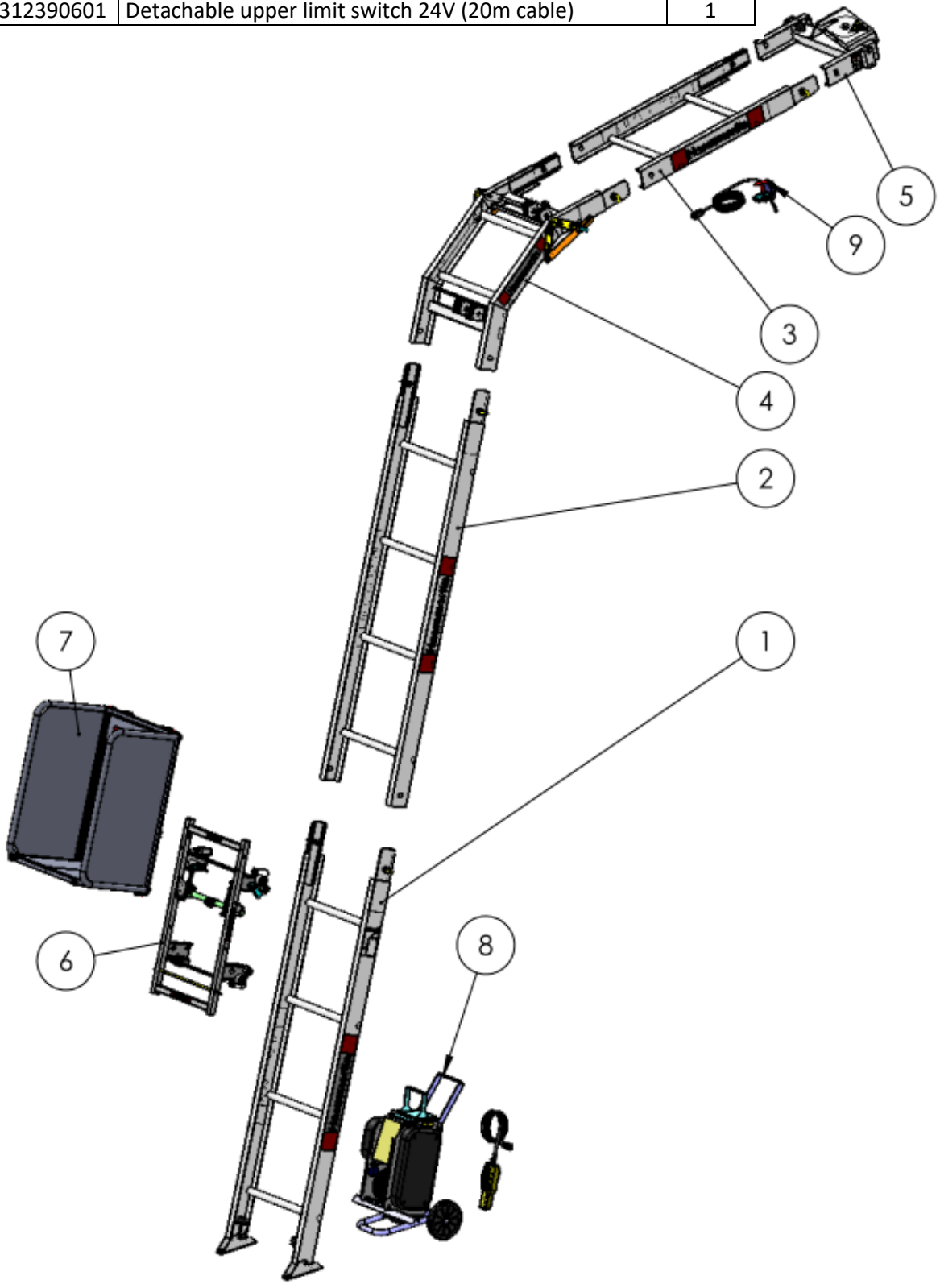
Haemmerlin SAS
28, rue de Steinbourg - 67700 MONSWILLER - FRANCE
Tel. + 33 (0)3 88 01 85 00
welcome@haemmerlin.com

Haemmerlin est. 1867

INDEX

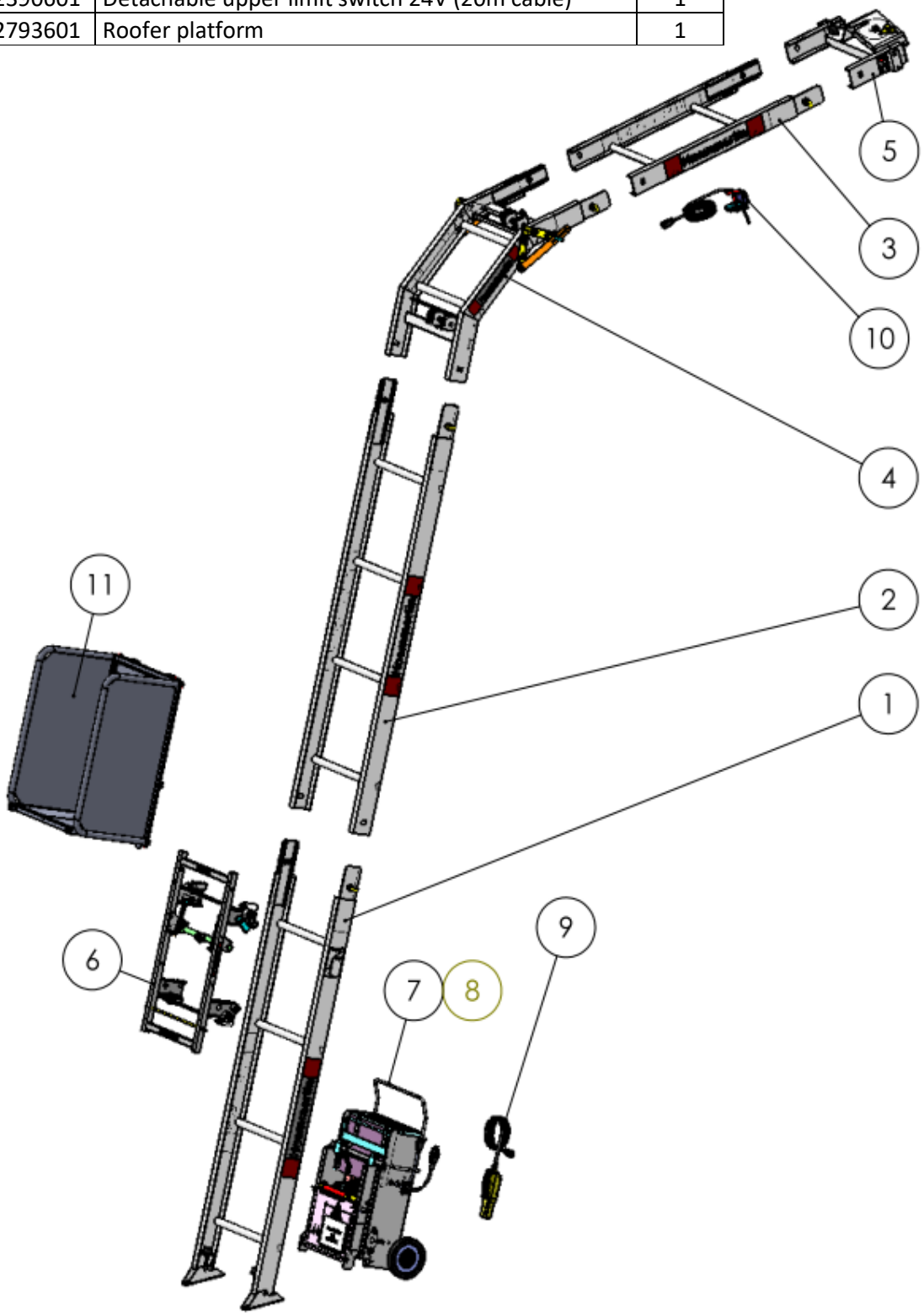
Basic composition **MAXIAL PREMIUM 175**

Rep.	Item code	Name	Qty
1	312390101	Base ladder 2m PS with quick bolts	1
2	312261901	Extension ladder 2m PS with quick bolts	3
3	312262201	Extension ladder 1m PS with quick bolts	1
4	312762401	Pre-angled knee joint from 30 to 60° (1.20m)	1
5	312772601	Headboard (0.30m)	1
6	312793401	Standard trolley	1
7	312793601	Roofer platform with 2 side panels	1
8	312370401	Winch 175 CA Cable Ø5 leng. 42m with remote control	1
9	312390601	Detachable upper limit switch 24V (20m cable)	1



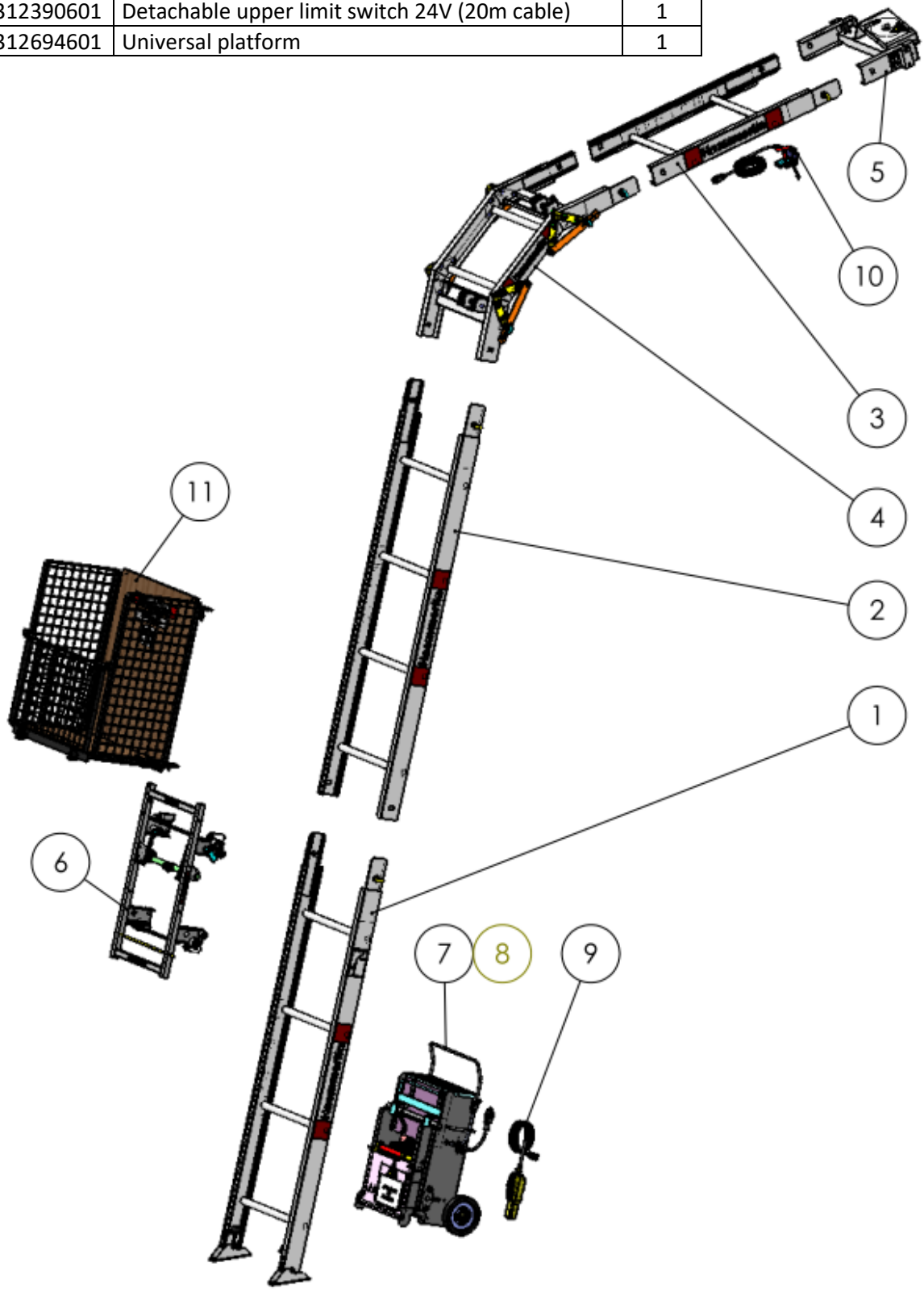
Basic composition **MAXIAL EXCELLIUM 200**

Rep.	Item code	Name	Qty
1	312390101	Base ladder 2m PS with quick bolts	1
2	312261901	Extension ladder 2m PS with quick bolts	3
3	312262201	Extension ladder 1m PS with quick bolts	1
4	312762401	Pre-angled knee joint from 30 to 60° (1.20m)	1
5	312772601	Headboard (0.30m)	1
6	312793401	Standard trolley	1
7	312800001	Winch 200 ABM-VF	1
8	216007000	Lifting cable Ø6 length 45m AB	1
9	312690501	Detachable remote control 24V (6m cable)	1
10	312390601	Detachable upper limit switch 24V (20m cable)	1
11	312793601	Roofer platform	1



Basic composition **MAXIAL EXPERT 250**

Rep.	Item code	Name	Qty
1	312762001	Base ladder 2m PR with quick bolts	1
2	312761901	Extension ladder 2m PR with quick bolts	3
3	312762201	Extendible ladder 1m PR with quick bolts	1
4	312762501	Double ply knee joint from 0 to 60° (1.20m)	1
5	312772601	Headboard (0.30m)	1
6	312793401	Standard trolley	1
7	312800001	Winch 200 ABM-VF	1
8	216007000	Lifting cable Ø6 length 45m AB	1
9	312690501	Detachable remote control 24V (6m cable)	1
10	312390601	Detachable upper limit switch 24V (20m cable)	1
11	312694601	Universal platform	1



The manufacturer, Haemmerlin SAS
28, rue de Steinbourg - 67700 MONSWILLER,
declares that the machine below:

HOIST

☐ **CASTOR STEEL**

☐ **MAXIAL COMPACT**

☐ **MAXIAL PREMIUM**

☐ **MAXIAL EXCELLIUM**

☐ **MAXIAL EXPERT**

Serial number: …… ...

complies with the provisions of the European Machinery Directive 2006/42/EC and the national legislation implementing it.

It must be used in compliance with all the technical instructions for assembly, operating and maintenance manual enclosed with the machine.

Signed in Saverne, on .....

Name: Christian Pitisi

Title: Head of Establishment - Industrial Director

Signature:

Contact person for technical documentation:
Consultancy agency

GUARANTEE CONDITIONS

The guarantee period for the hoists and their components is 1 year from the date of delivery of the machine to the user, the date of the invoice being the proof.
The validity of this guarantee is directly linked to the way in which the hoist is used, according to the instructions for use and maintenance contained in the assembly, operating and maintenance manual.
We advise the user to take care of the maintenance of the mechanical components of the hoist
Similarly, the user is warned that the electrical parts are excluded from this guarantee, except for components that have obvious manufacturing defects.
Replacement of parts is only allowed with the prior approval of Haemmerlin.
In the case of defective or faulty parts, Haemmerlin undertakes to supply replacement parts free of charge for the duration of the guarantee period.

This guarantee does not cover:

- normal wear and tear
- damage caused by misuse or improper handling by the user or a third party
- damage caused by transport or handling
- improper maintenance by the user or a third party
- use of an unsuitable lubricant or grease by the user or a third party
- the discovery of an unauthorised intervention on components
- arbitrary dismantling of the machine or its parts
- repairs carried out by unqualified personnel
- use of non-original-brand spare parts by the user or a third party
- shocks, falls, fires, floods, and/or other accidental events, even of a geological or atmospheric nature,

Haemmerlin reserves the right to modify the hoists and the contents of the technical manuals at any time with no obligation to update the previous hoists and manuals.

For all guarantee claims, the user must provide a dated proof of purchase, delivery note or invoice, and the completed guarantee / service form.
This guarantee / service form is on the last page of this manual.
Without proof of purchase and a guarantee / service form, Haemmerlin will not be able to apply the guarantee.
The information that you provide on this guarantee / service form is required for Haemmerlin to understand your problem and make an accurate diagnosis.
In the case of a telephone call, the user must provide the Haemmerlin contact person with all of the information requested on the guarantee / service form.
If the problem cannot be diagnosed and/or solved over the telephone, the hoist must be returned to Haemmerlin at the following address:

Haemmerlin SAS
28, rue de Steinbourg - 67700 MONSWILLER - FRANCE
ATELIER F1 / Levage

Haemmerlin will not bear any costs resulting directly or indirectly from the immobilisation of the hoist

LIST OF ALL COMPONENTS OF THE HOIST

Name	Item code	Weight (kg)
Base ladder 2m PS with quick bolts	312390101	11.5
Extension ladder 2m PS with quick bolts	312261901	9.9
Extension ladder 1m PS with quick bolts	312262201	5.6
Extension ladder 0.5m PS with quick bolts	312262101	4
Base ladder 2m PR with quick bolts	312762001	13.15
Extension ladder 2m PR with quick bolts	312761901	11.1
Extendible ladder 1m PR with quick bolts	312762201	6.3
Extension ladder 0.5m PR with quick bolts	312762101	4.2
Pre-angled knee joint from 30 to 60° (1.20m)	312762401	11.8
Double ply knee joint from 0 to 60° (1.20m)	312762501	15.18
Headboard (0.30m)	312772601	6.7
Quick bolt	312691701	0.2
Standard trolley	312793401	15.97
Roofer platform	312793601	27.16
Front panel	312793701	4.5
Universal platform	312694601	29
Renovation platform	312795501	39.7
Horizontal and vertical sheet carrier	312795601	21.7
Double tipping bin	312392401	48.6
Tipping skip	312392501	25.4
Winch 175 CA - Cable Ø5 leng.42m + Remote control (3m cable)	312370401	45
Winch 200/250 ABM-VF - Cable Ø6 leng.45m	312800001	76.3
Detachable upper limit switch 24V (20m cable)	312390601	2
Complete remote control 24V (6m cable)	312690501	2
Trestle with fixing clamps	312767601	4.7
Base ladder prop 2 to 3m	312268001	11
Extension prop 2m	312268101	3
Pair of headboard props adjustable from 1.1 to 2m	312797801	11
Bumper prop adjustable from 1.33 to 1.87m	312697901	8.12
Enclosure clamp	312668001	10
Balcony clamp	312668101	11
Mooring cylinder from 0.70 to 1m	312072101	6
Mooring cylinder from 1m to 1.70m	312072201	7.8
Scaffolding tube Ø49 length 2m	312072601	7.7
Orthogonal coupler	312072401	1.3
Hinged coupler	312072301	1.5
Fixing clamp	312073001	0.5
VE fixing clamp	312073101	0.7
Electrical extension cord for power supply 15m	312790701	4.5
Remote control electrical extension cord 5m	319120001	2.4
Remote control electrical extension cord 15m	312790601	3.4

Remote control extension 25m	**319121001**	**4.4**
Electric hard stop switch 15m	**312072501**	**3.4**
Lifting cable D6 length 45m AB	**312799701**	**6.2**
Lifting cable D6 length 62m AB	**312799801**	**8.6**
Lifting cable D6 length 82m AB	**312799901**	**11.3**
Kit of 3 crochets of cable routing	**312703001**	**0.07**

The components of the hoist that weigh more than 25kg must be handled by at least two people.

TECHNICAL SPECIFICATIONS

This equipment is a category III construction site hoist designed and built in accordance with the European regulations currently in force, and more particularly the amended Machinery Directive 2006/42/EC. This hoist is not designed to be used in ATEX or explosive areas.

This machine is listed in the decree of 1 March 2004. It must be checked in accordance with the regulations when it is first put into service. The same applies in the case of major alterations or repairs. This verification must include:

- The suitability test: The “suitability test for a hoist" refers the test which consists of verifying that the hoist is suitable for the work which the user intends to carry out and for the risks to which the workers are exposed, and that the operations planned are compatible with the conditions of use of the hoist as defined by the manufacturer.
- The assembly and installation test: The “assembly and installation test for a hoist" refers to the test to ensure that the hoist is assembled and installed safely in accordance with the manufacturer's instructions.
- **The static test: The static tests must be carried out with a coefficient of 125% of the maximum useful load (MUL).**
- **The Dynamic test: The dynamic tests must be carried out with a coefficient of 110% of the maximum useful load (MUL).**

As hoists are subject to frequent movement, they are exempt from the obligation to renew the tests after each dismantling and reassembly, provided that they are verified and approved every 6 months. These provisions are derived from regulations aimed at the heads of user establishments. This biannual verification must include:

- The suitability test,
- The assembly and installation test,
- The state of conservation test: The “state of conservation test for the hoist" means the test to check the good state of conservation of the components of the hoist during the whole period of its installation.
- The static test,
- The dynamic test,

⚠ maintenance logbook must be kept up to date by the head of the establishment, according to article R233-12 of the French labour code, in order to ensure that the maintenance operations required for operating the hoist are performed in conditions that preserve the safety and health of workers.
All the reports of interventions must be recorded in this maintenance book to contribute to the essential maintenance and the proper management of the hoist until its disposal.

The head of the establishment is responsible for the application of the user regulations in force.

⚠ Before using this hoist, it is essential, for the safety of the equipment and its efficiency, to read over this technical manual and to follow all its instructions. This technical manual must be kept with the machine and be available to the operators for the entire lifespan of the hoist. Additional copies can be supplied on request.

HAEMMERLIN accepts no liability for any consequences arising from the use or installation of the lift that is not provided for in these operating instructions; as well as the consequences of disassembly, modifications or replacement of parts or components from other sources without written agreement.

At the time of purchase, the purchaser must ensure the integrity of the structure.

GENERAL CARACTERISTIQUES

Name	MAXIAL		
	PREMIUM	EXCELLIUM	EXPERT
Payload	175 kg	200 kg	250 kg
Maximum working height	20 m	30 m	40 m
Hoisting Speed	22 m/min	28 m/min	28 m/min
Winch	Single-phase electrical	Single-phase electrical	Single-phase electrical
Supply voltage	220V50Hz	220V50Hz	220V50Hz
Engine power	1.1kw	1.5kw	1.5kw
Starting current at maximum load	9.5A	10A	10A
Continuous current at maximum load	8.2A	7.6A ABM 8.5A MARA	7.6A ABM 8.5A MARA
Service factor	60%	60%	60%
Protection	IP44	IP54	IP54
Minimum power of a generator unit	4.5 KVA	5.5 KVA	5.5 KVA
Cable diameter	5 mm	6 mm	6 mm
Cable length	42 m	45/62 m	45/62/82 m
CRM (minimum load at cable breakage)	1600 kg	2210 kg	2210 kg
Cable material	Galvanised steel		
Number of cable strands	7x19	6x19	
Central cable core	Metallic	Textile	
Cable end 1	Crimped end Ø14 mm	Prepared and welded	
Cable end 2	Loop 27x18 mm		
Cable drum diameter	120 mm	124 mm	124 mm
Handling wheels	2 wheels / winch	2 wheels / winch	2 wheels / winch
Low voltage control 24V with detachable remote control. Cable length 3m, with 5, 15 and 25m extensions available. Box with 3 buttons: Up (white), Down (black) and Emergency Stop (red) Operates by pressing the buttons, the brake operates when the buttons are released. Protection IP65	YES	YES	YES
Limitation of movement: - by upper limit switch 24V flanged on the ladder by lower limit switch/anti slack rope 24V integrated in the winch	YES	YES	YES
Acoustic power	75.6dB(A)	68.3dB(A)	68.3dB(A)
Standard trolley	YES	YES	YES
Basic accessory	Roofer platform with 2 side panels	Roofer platform with 2 side panels	Universal platform with 3 panels
Platform dimensions (Width x Depth x Height)	558x445x794	558x445x795	700x444xx853

Volume of the platform in inclination	**0.197m3**	**0.197m3**	**0.265m3**

Volume of the platform, vertical with front panel	**0.110m3**	**0.110m3**	**0.138m3**
Base ladder 2m with hinged shoes	**Standard profile**	**Standard profile**	**Heavy duty profile**
Ladder 0.5 m	**Standard profile**	**Standard profile**	**Heavy duty profile**
Ladder 1 m	**Standard profile**	**Standard profile**	**Heavy duty profile**
Ladder 2 m	**Standard profile**	**Standard profile**	**Heavy duty profile**
Knee joint (1.20m)	**Pre-welded 30 to 60°**	**Pre-welded 30 to 60°**	**Double ply 0 to 60°**
Headboard (0.30m)	**Yes**	**Yes**	**Yes**
Fast assembly with quick bolts	**Yes**	**Yes**	**Yes**

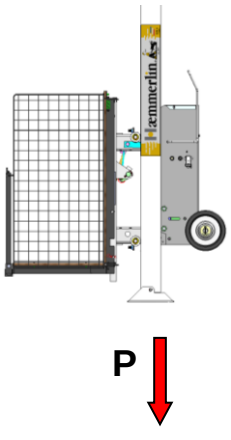
The hoisting, shoring and anchoring accessories and additional elements listed in the catalogue are all optional.

In order to improve its products, HAEMMERLIN reserves the right to make changes to the materials at any time.

PRECAUTIONS TO BE TAKEN DURING INSTALLATION

- The assembly area must be marked out and the equipment must be stored properly without obstructing the movement of third parties and allowing the smooth running of the site.
- Set up the workstation so that the operator has full visibility of the entire trajectory of the moving parts. The work area must be well lit to ensure a good view of the entire path of the load to be hoisted.
- Make sure that it is not possible to be within five metres of a live power line. Take into account the length of materials handled and hoisted.
- Make sure that the ground can support the load at the support point of the hoist when it is at maximum load. The anchoring must be stable, solid and durable.

GROUND PRESSURE UNDER MAXIMUM LOAD			
HEIGHT OF THE LADDER	MAXIAL		
	PREMIUM	EXCELLIUM	EXPERT
H10m	**387daN**	**440daN**	**500daN**
H15m	**413daN**	**466daN**	**529daN**
H20m	**464daN**	**516daN**	**586daN**
H30m		**567daN**	**643daN**
H40m			**700daN**



- The hoist shall be installed so that, during ascent or descent, the moving part of the hoist cannot collide with other moving bodies or with the building or structure against which it is installed.
- **Verify that the length of the lifting cable is greater than twice the height of the high unloading point and that once the machine is installed with the mobile equipment in the lowered position, there are at least 3 turns of cable left wound around the winch drum.** Verify the general condition and the winding of the lifting cable around the drum. It must always be perfectly wound around the drum to avoid deteriorating. It must be replaced if it shows tears or crushing. It is strictly forbidden to repair a lifting cable using couplers or cable ties! See the chapter on cable maintenance on pages 80-81.
- Read the instructions on the sheets and labels attached to the hoist.

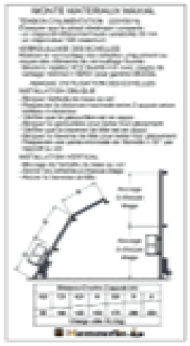
- Ensure that the building or structure against which the machine is to be installed is capable of withstanding the reaction forces due to the passing of the loaded mobile crew.
- Ensure that the loading and unloading areas and the area around the installation are clean.
- Mark out the danger zone with a physical system. All workplaces must be protected by guardrails in accordance with current regulations, consisting of two horizontal elements. One should be at a height of between 1 and 1.2m, the other at a height of about 0.5m. These elements should be marked in an eye-catching colour (e.g. red and white). The marked out space must protect an area of a width corresponding to the largest load envisaged, for a distance of at least 1.40m.
- To ensure the protection of the people who install the equipment as well as the users.
- In all cases, the person or persons installing the machine at a height must wear a safety harness with a fall arrest system, anchored to a suitable part of the building.
  The structure and equipment of the hoist must not be used as an anchoring point for the safety harness.
- It is strictly forbidden to transport people.
- It is strictly forbidden to access the transport devices.
- Never overload the transport device.
- Mark out and protect the risk area in a suitable manner to prevent the circulation of personnel underneath the load and highlight the danger of a falling load.
  Before each use of the hoist, the operator must make sure that no one is in the defined area and under the load.
- Observe all instructions and warnings.
- Before connecting the winch, check that the power supply complies with the manufacturer's instructions and ensure that:
  - The supply voltage is 220V50Hz single phase,
  - The power supply line can support a current of 16A,
  - The power supply line is initially protected by a high sensitivity differential device 30mA for the protection of persons and a circuit breaker at maximum 16A for the protection of the winch against overloads or short circuits,
  - When using an electric extension cable, make sure that the cable conductors have a cross-section of 2.5mm2 or over each for a length of less than 25m, and 4mm2 each for a length of more than 25m,
  - The device does not work in ATEX zones or explosive atmospheres (presence of flammable gas or dust etc.).
- Never operate the winch while it is connected to a power source.
- If the winch does not start or does not pull the rated load or shows other anomalies, immediately stop using it, disconnect it and contact the after-sales service.
- It is not necessary to systematically use the upper limit switch. The winch stops as soon as you release the up or down buttons.
- For proper operation of the winch, respect the intermittent service of 25% (corresponds to approximately 17 cycles per hour maximum for the Maxial Premium and 20 cycles per hour for the Maxial Excellium and Expert).
- Observe the operating temperature range of -5 to 40°C
- This manual concerns all versions of Maxial Premium, Excellium and Expert.
- The basic compositions are equipped with a roofer platform or universal platform. Nevertheless, it is recommended to use the most suitable accessory for the material to be transported in order to work in safety (see other accessories available on page 9 as well as in the commercial documentation and on our website www.haemmerlin.com).

SAFETY MARKINGS ON THE MACHINE

WINCH

	Risk of crushing and cutting fingers
	Risk of electricity
	Instructions for use of an electric extension cord, minimum section of the conductors and maximum length of the cord
	Safety instructions

BASE LADDER

	Power supply Locking the ladders Basics for using ladders - Shoring / Anchoring

HEADBOARD

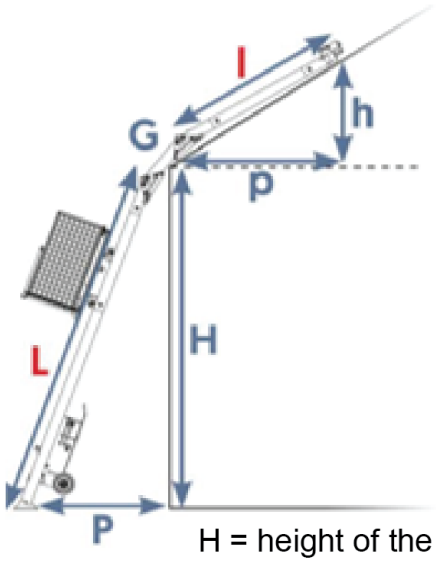
	Risk of crushing and cutting fingers
	Ladder use area: The hinged needle should always be situated in a red inclinasion area

ACCESSORIES

	Access and transport of persons prohibited
	Payload

INSTALLATION AND SAFETY INSTRUCTIONS

Calculate the required length of the ladders of the hoist.



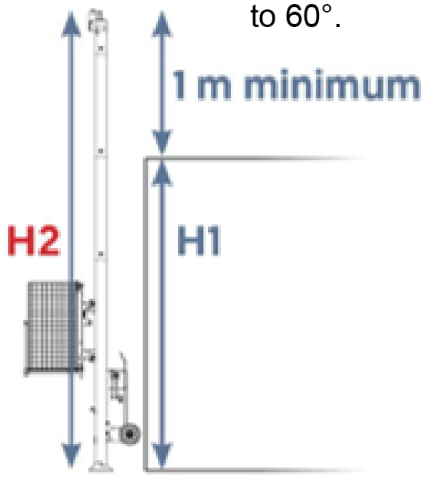
$$l = \sqrt{l = h + d}$$

$$L = \sqrt{L + l + G}$$

Total length of ladders

$$= L + l + G$$

H = height of the gutter
h = height of the roof slope
D = depth of the base of the ladder
d = depth of the roof slope
G = developped length of the knee joint
0.50 m for the Castor Steel knee joint
0.63 m for the Maxial knee joint from 0 to 40°
1.20 m for the Maxial knee joints from 30 to 60° and from 0 to 60°.

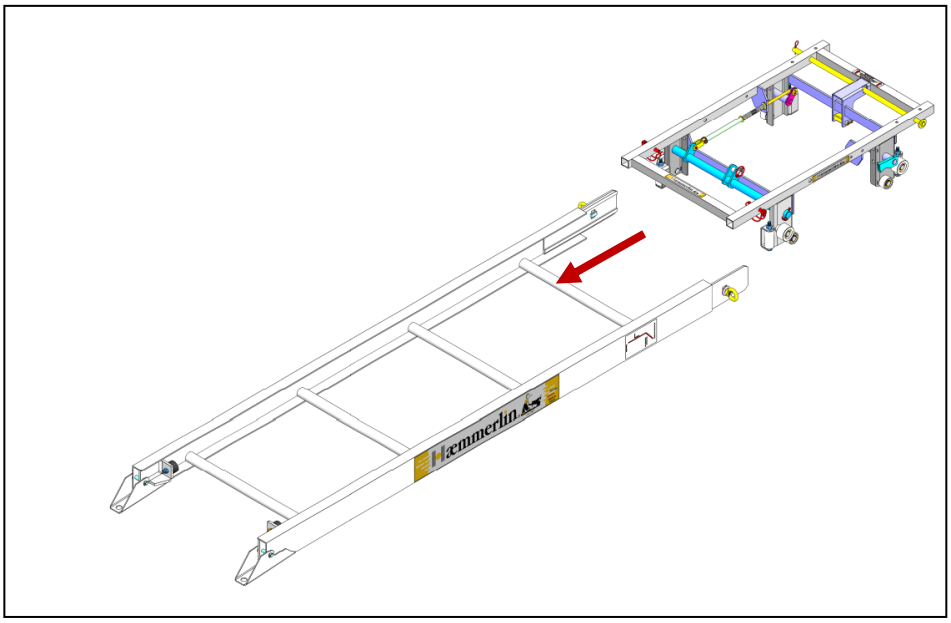


For a vertical installation, always plan for a minimum of 1m more than the unloading height required to take into account the ladder.

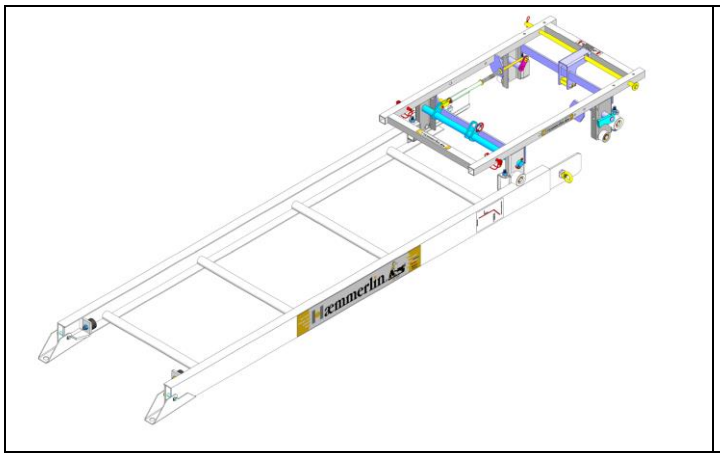
H1 = unloading height required
H2 = height of the structure of the ladder
= H1 + 1 m minimum
ladder

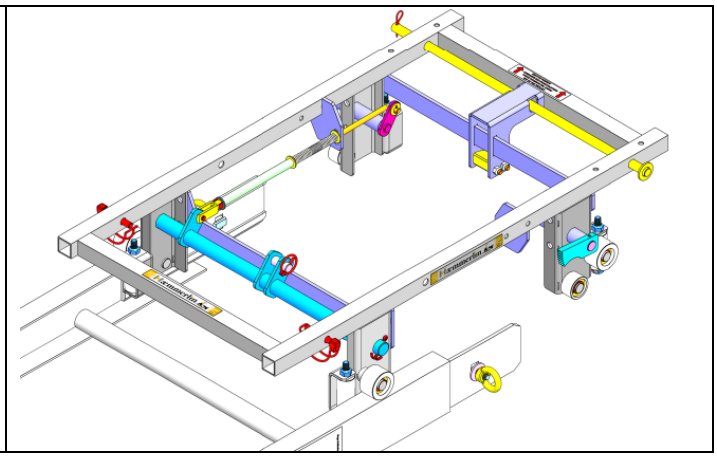
The danger zone must be marked out with a physical system in accordance with the regulations in force.

Lay the base ladder flat (rungs towards the ground) and then insert the accessory trolley into the ladder so that the profile is clamped between the rollers.

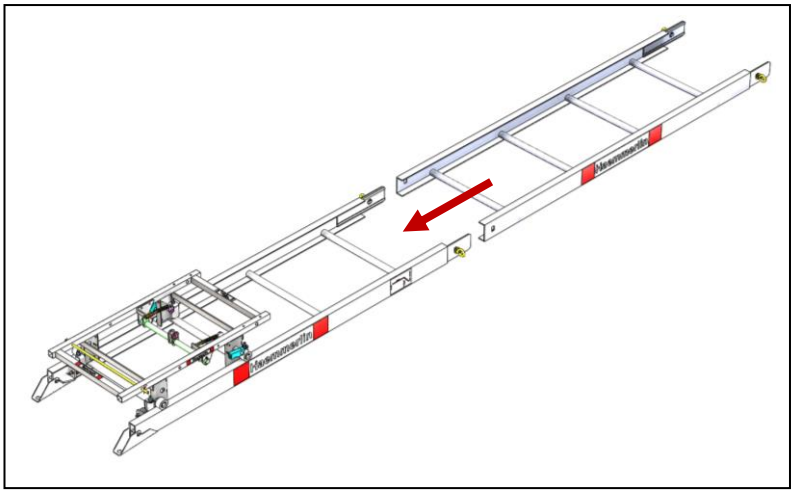


In order to fully insert the trolley into the ladder, the parachute cams must be unlocked by turning the shaft. The trolley must be oriented so that the parachute cams are at the top when the ladder is hoisted.



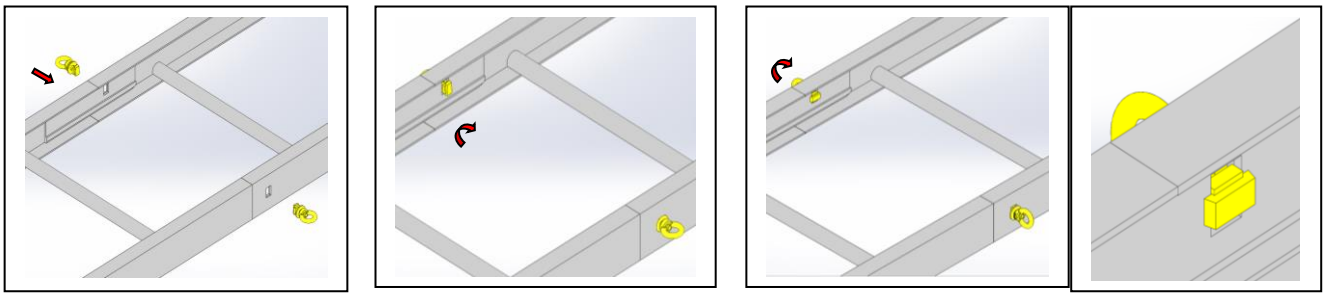


Assemble the ladders and lock them with quick release bolts. The assembly on the ground can be done parallel or perpendicular to the façade of the building depending on the available space.

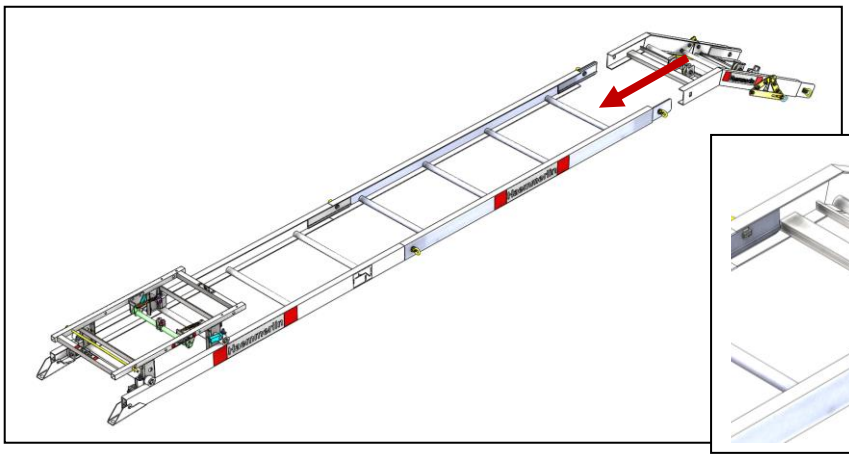


Insert the quick bolts through the rectangular openings in the ladders, then rotate them one quarter of a turn to secure the screw head, then tighten by turning the clamping ring in a

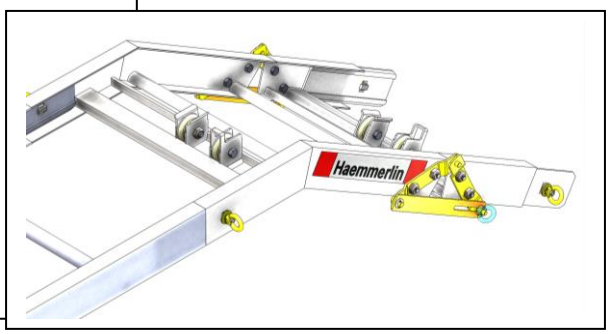
clockwise direction.

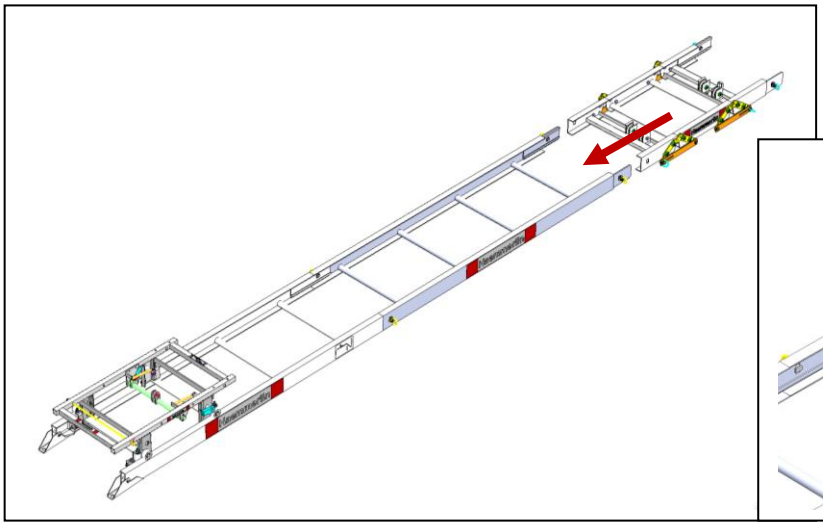


Add a knee joint in the open position and lock it with quick release bolts.
The knee joint allows the ladder to be bent to fit the shape of the roof, regardless of the slope, or to enter an opening.

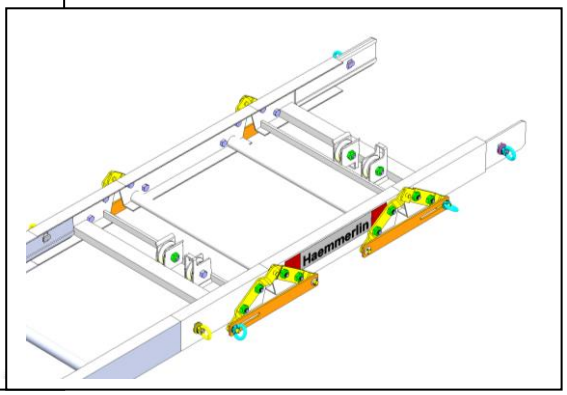


Pre-angled knee joint
from 30 to 60°



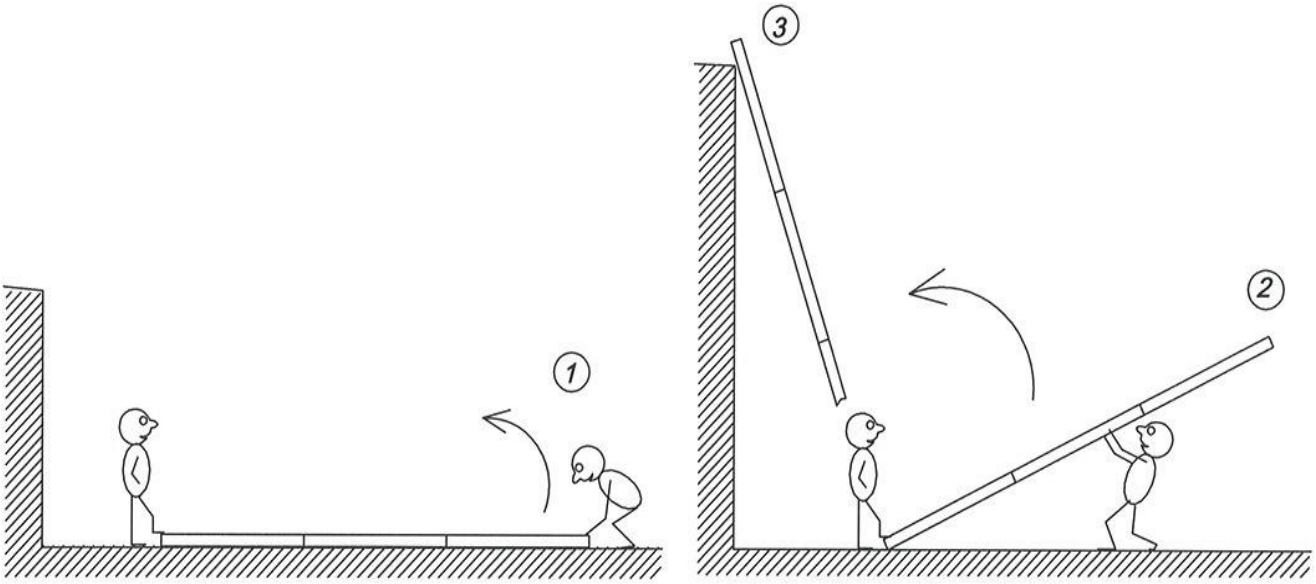


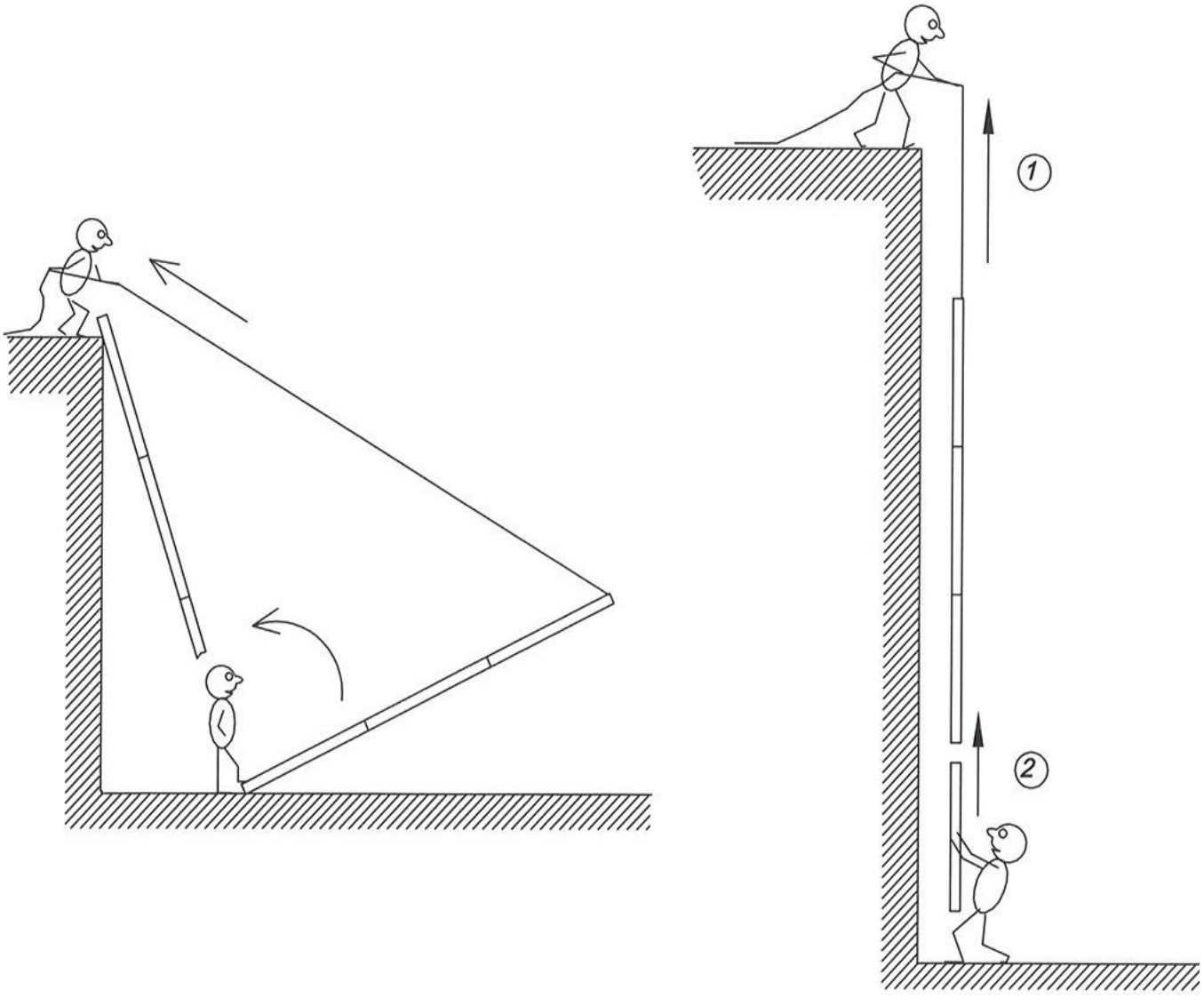
Double ply knee joint
from 0 to 60°



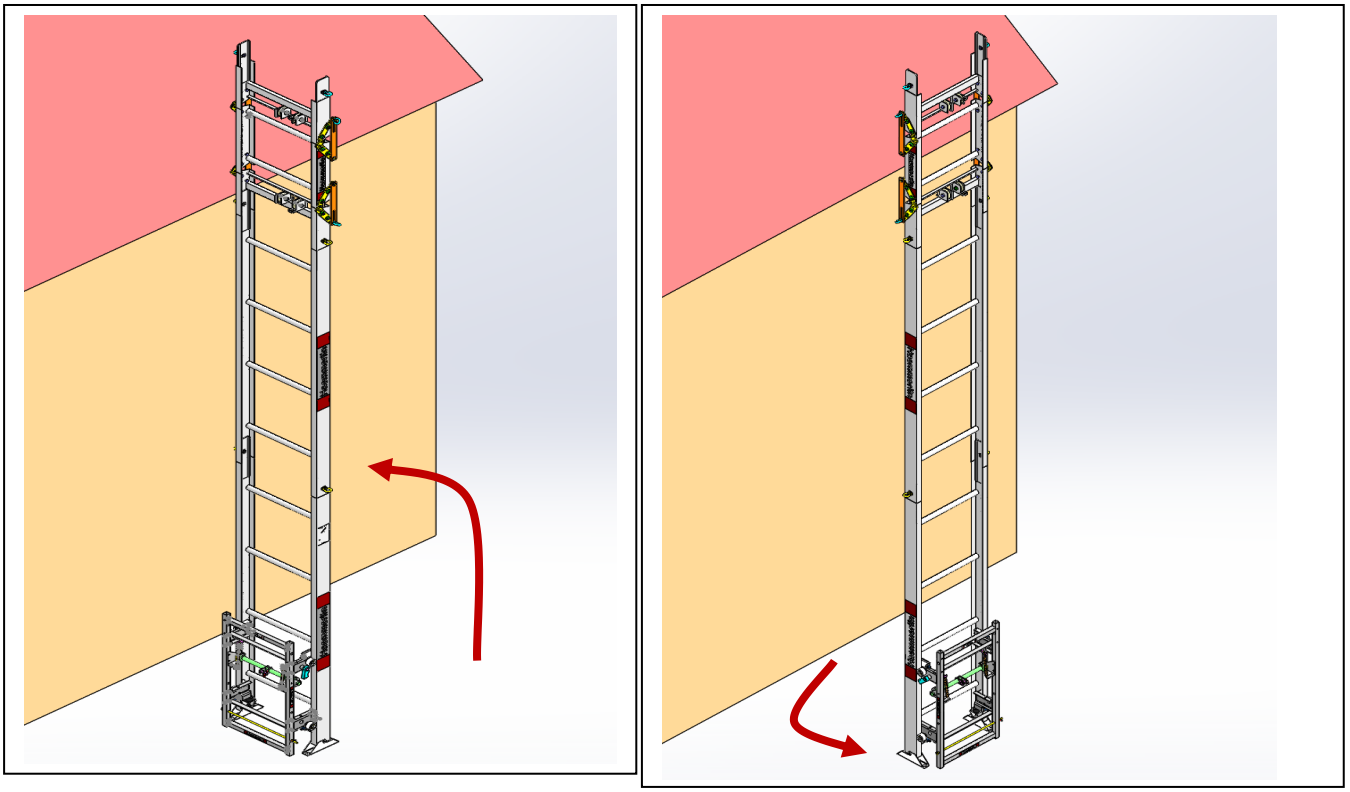
Prepare the base of the unit, making sure that the floor surface is level. If the floor is wet and loose, install the unit onto boards. The base of the structure of the hoist must be solid and durable.
The ladder shoes must be anchored to the ground using dowels or fixing plugs adapted to the type of support.
The dowels or fixing plugs must have a minimum diameter of 12 mm.
For up to 8 m of ladder length, hoist the unit with 2 people on the ground. From 8 to 15 m of ladder length, hoist the unit with 2 people on the ground and 1 person on the roof pulling on a rope attached to the end of the ladder (the person on the roof must wear a safety harness with fall arrest system).
Alternative solution: The ladder is lifted by 2 to 3 people on the roof by means of a rope or manual winch. The ladders will then be slotted in and locked one after the other from the bottom of the ladder by 1 person on the ground. People on the roof must wear a safety harness with a fall arrest system anchored to a dedicated part of the building.
The structure and equipment of the hoist must not be used as an anchoring point for the safety harness.
See also the drawings showing examples of assembly.

ASSEMBLY EXAMPLES

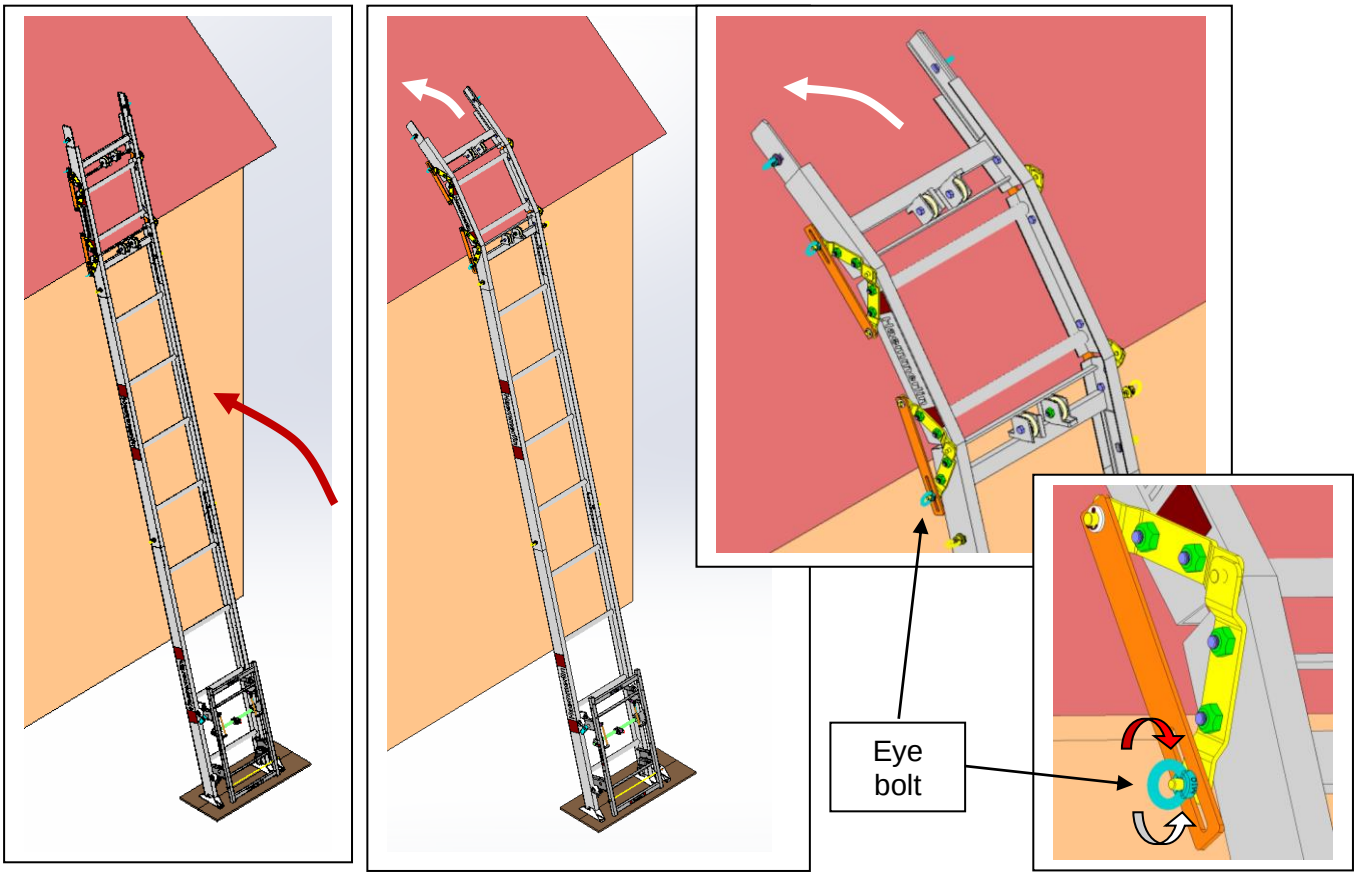




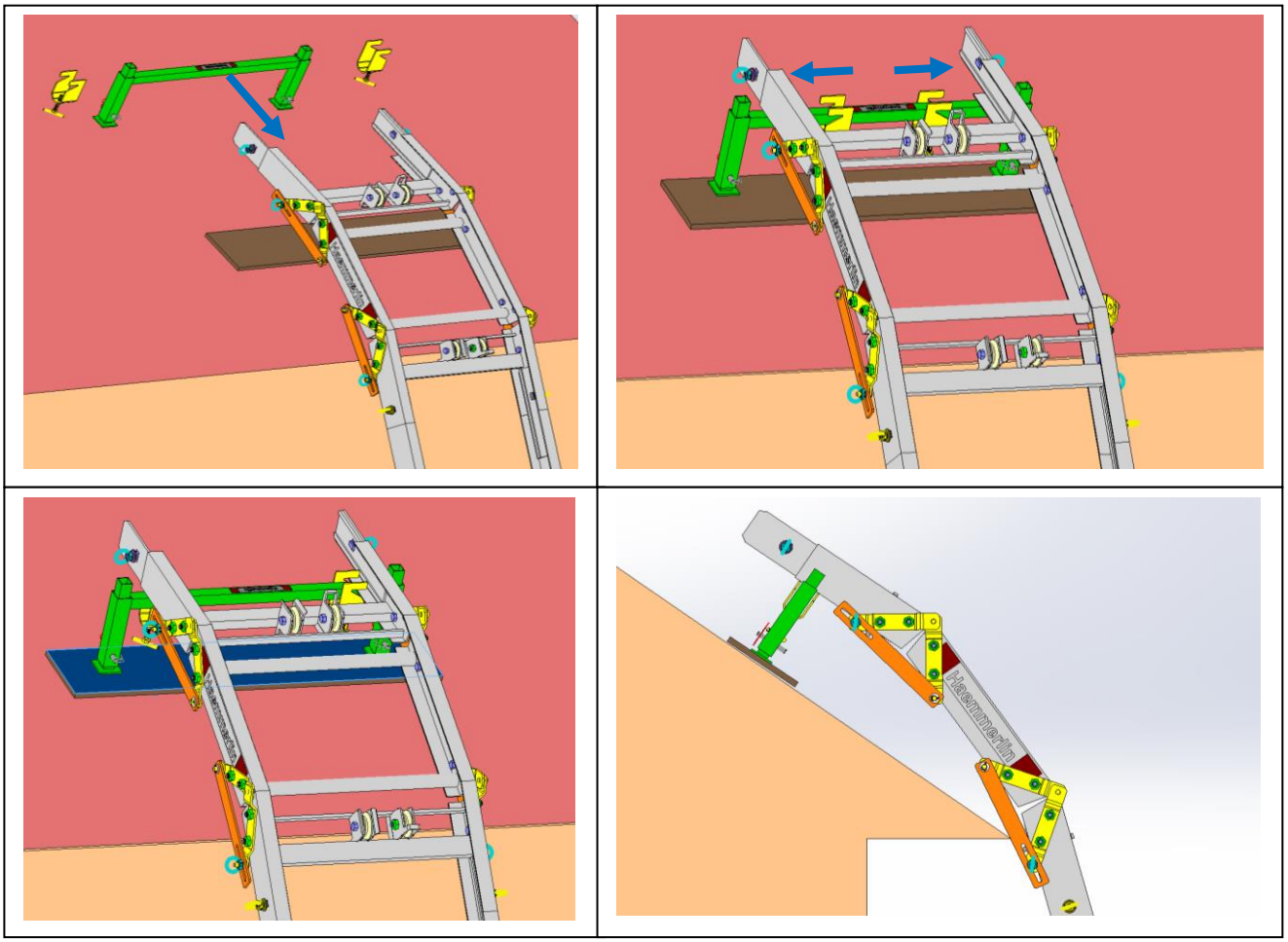
Hoist the ladder structure, then rotate the assembly and lean it against the building.



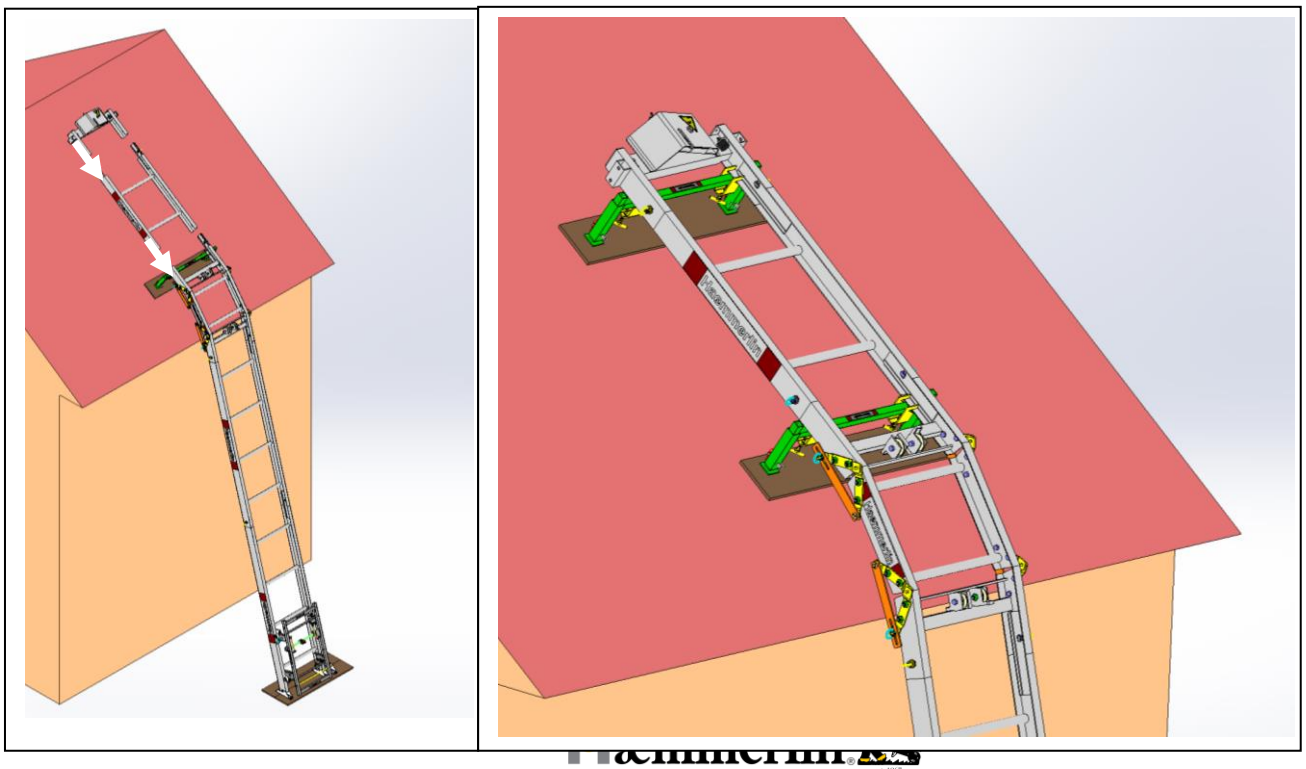
Adjust the knee joint to the angle of the roof (minimum 30° from the ground). To bend the knee joint, loosen the eye bolts, set the desired angle of inclination (at least 30° from horizontal) and then tighten the eye bolts.



The knee joint can be supported directly on the roof or on trestles. It must always be supported, either directly on the building or by using a trestle. The trestle can be supported directly on the roof or on a board for a better distribution of the effort.

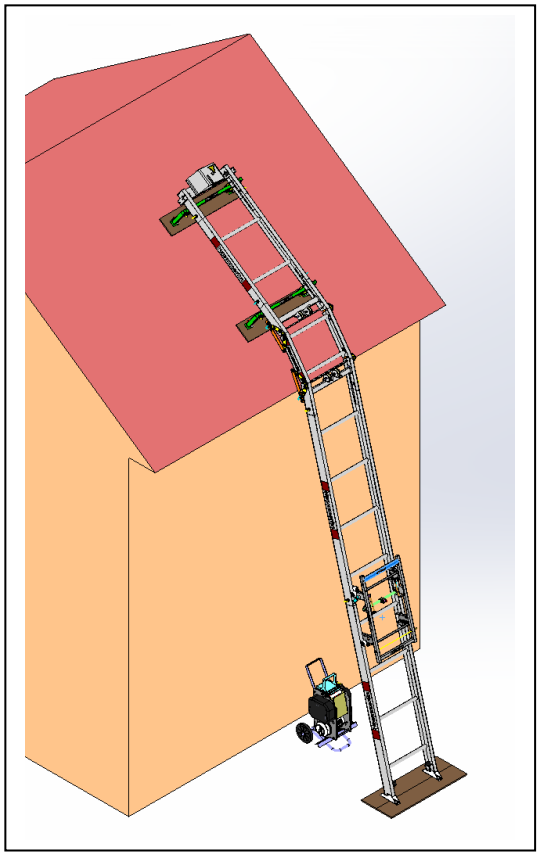


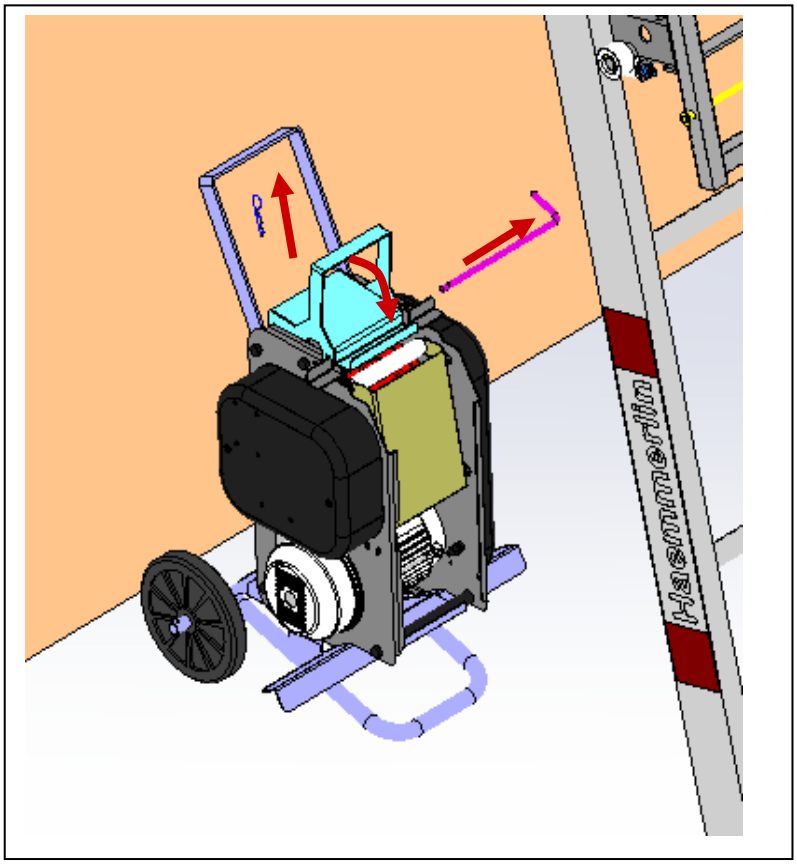
Assemble the required number of ladders and the headboard and lock them in place.
The headboard cannot be installed directly after the knee joint. A ladder of at least 0.5m (or 1m or 2m) must be inserted between the knee joint and the headboard.
Ladders can supported directly on the roof or on trestles. The trestles can be supported directly on the roof or on a board for a better distribution of the effort. The minimum distance between two supports depends on the payload carried in the roofer platform. Follow the instructions on the shoring chart attached to the base ladder.
The headboard can be supported directly on the roof or on trestles. In case of flat roofs or inside buildings, use the headboard props. (See paragraph entitled “Shoring").



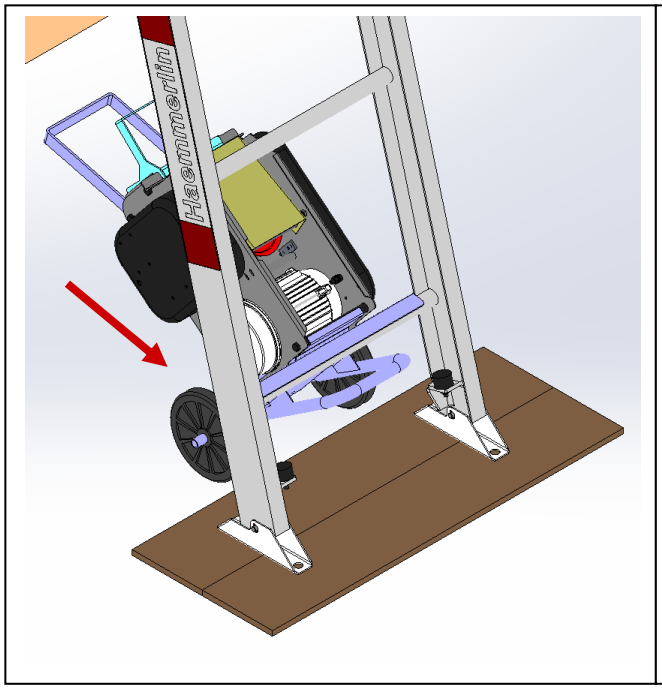
INSTALLATION OF WINCH 175 CA for MAXIAL PREMIUM

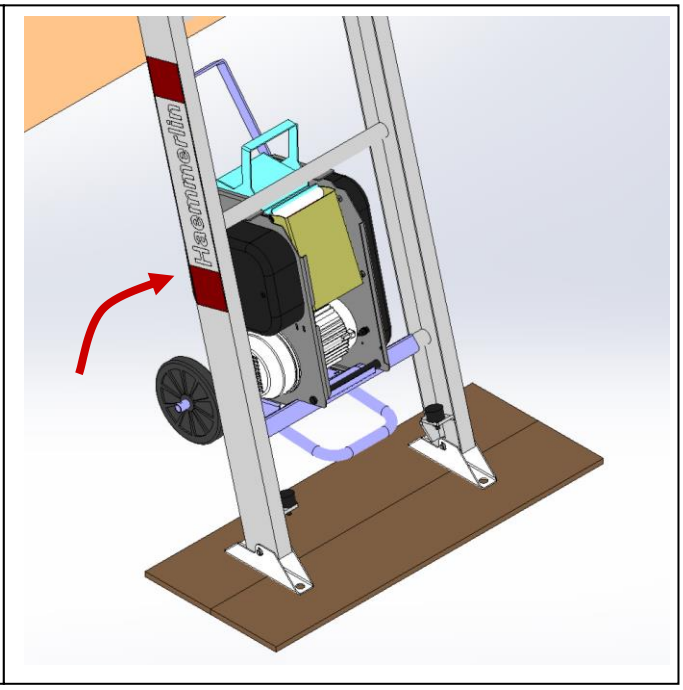
Move the winch to the back of the base ladder using the handle. Remove the safety pin and the locking shaft, then rotate the locking handle downwards to allow the winch to be fitted into the base ladder.

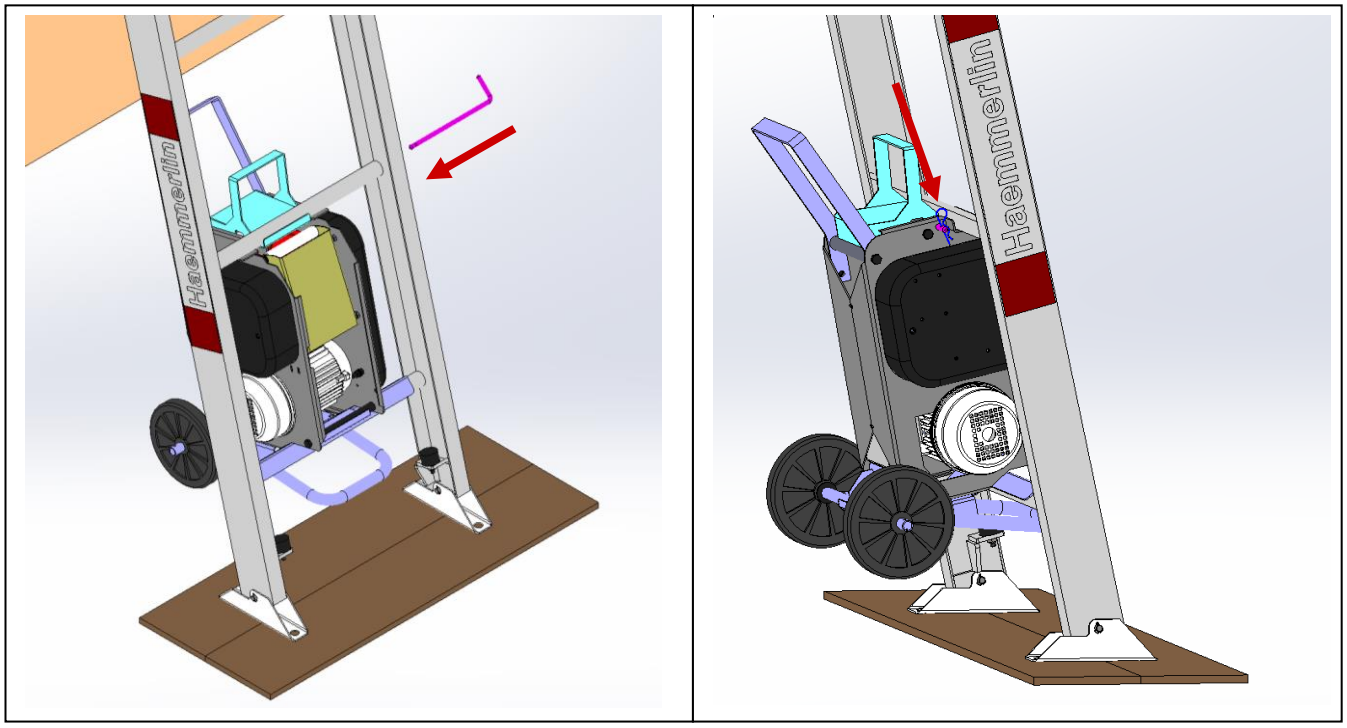




Remove the lower crossmember of the winch from the bottom rung of the base ladder and embed the winch fully using the handle. As soon as the winch is fully embedded, raise the locking handle to secure the winch, then insert the locking shaft and the safety pin. The winch is ready to be connected.



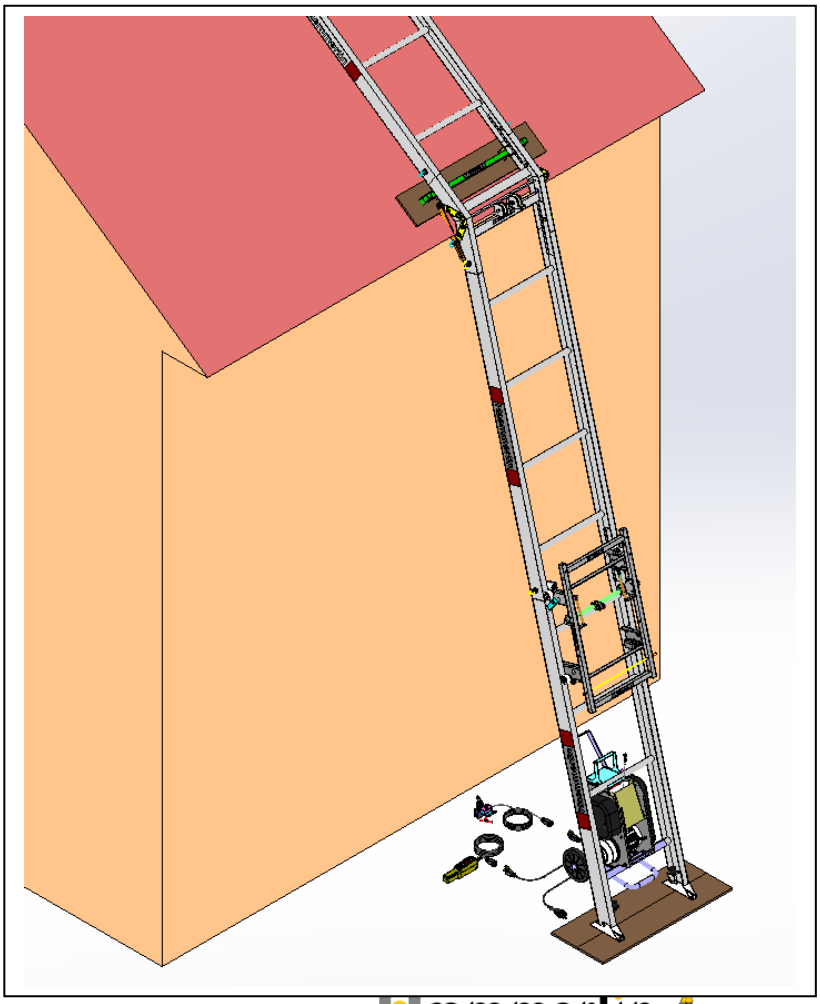




ELECTRICAL CONNECTIONS OF THE MAXIAL PREMIUM 175 AC WINCH

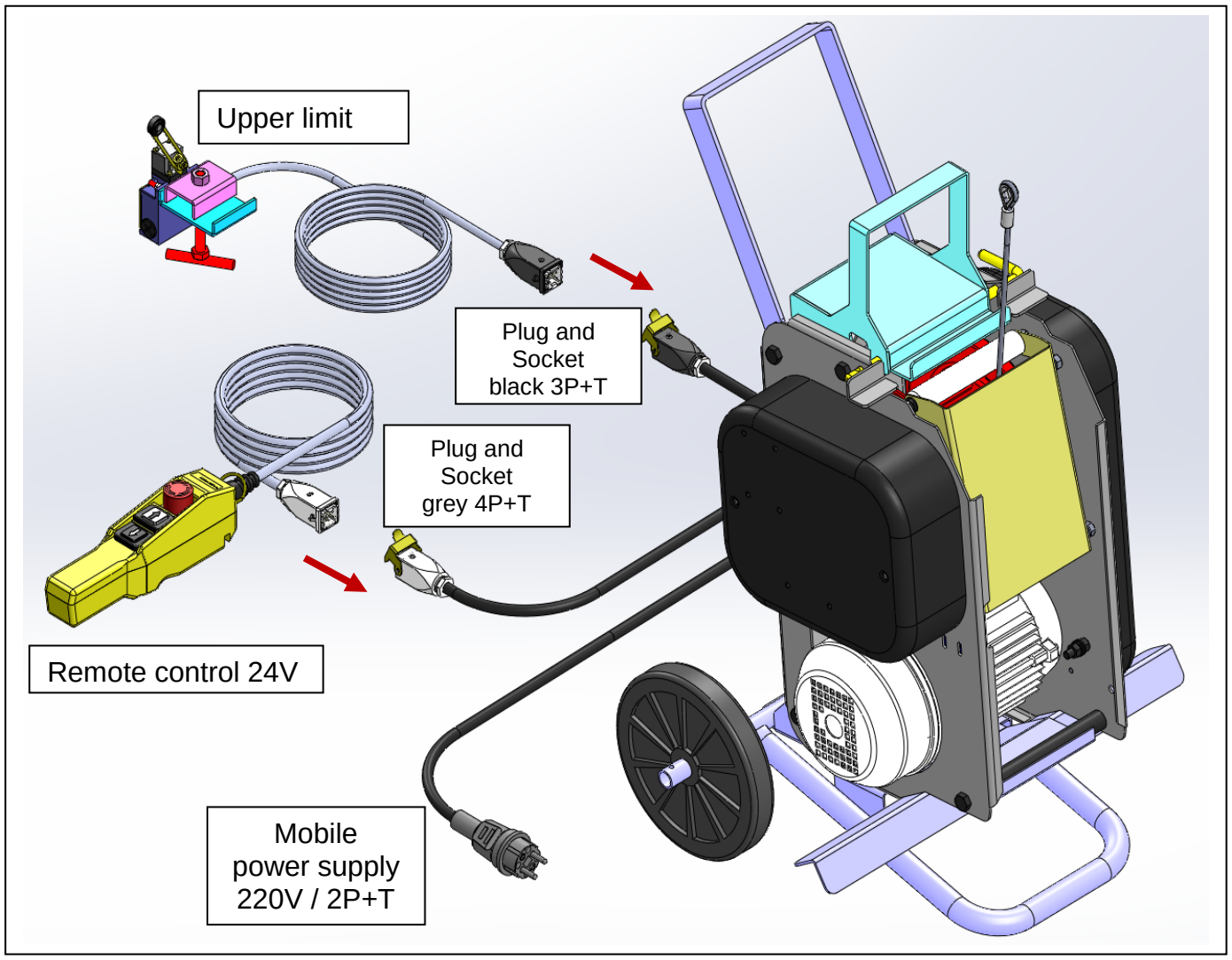
The next stage in the assembly of the hoist is the electrical connections:

- Complete 24V remote control including the button box (up, down and emergency stop), the electric cable length 3m and the male plug (grey / 4P+T)
- Upper limit switch complete with sensor to be clamped on the ladder, electric cable length 20m and male connector (black / 3P+T)
- Mobile power socket (black / 2P+T) with 1m long power cable



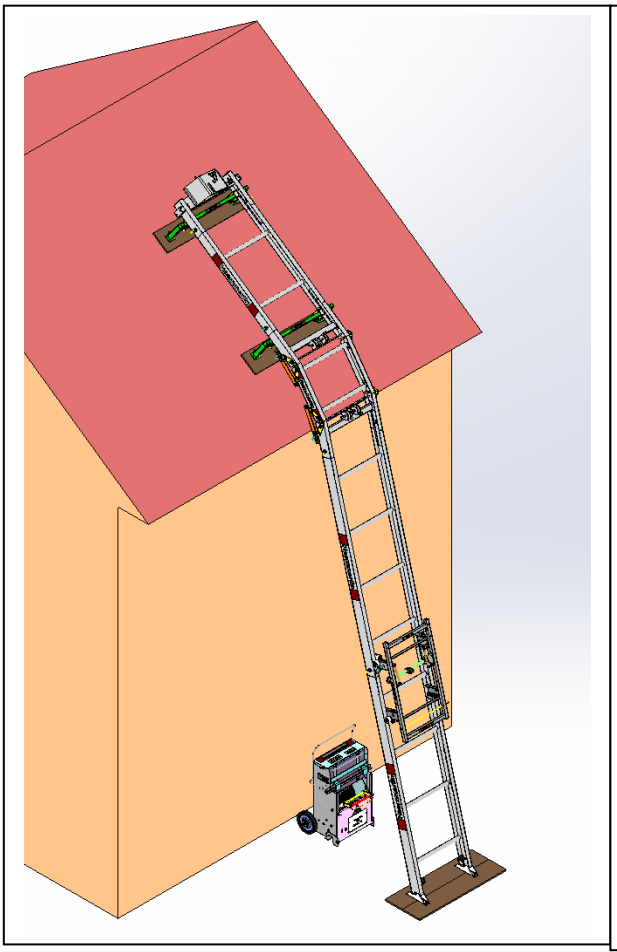
Connect the remote control, the upper limit switch and the power supply after ensuring that:

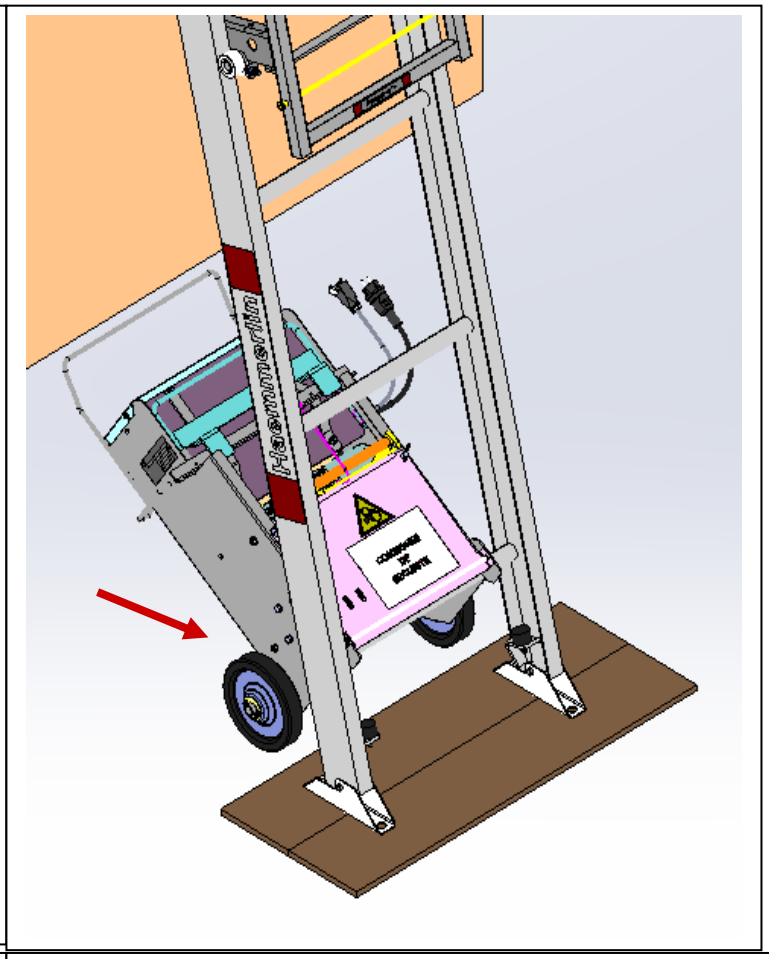
- the supply voltage is 220V50 single phase,
- The power supply line can support a current of 16A, (starting current = 16A),
- the power supply line is initially protected by a high sensitivity differential device 30mA for the protection of persons and a circuit breaker at maximum 16A to protect the winch against overloads or short circuits,
- when using an electric extension cable, make sure that the cable conductors have a cross-section greater than or equal to 2.5mm2 each for a length of 0 to 15m and 4mm2 each for a length of 15 to 30m (maximum length of the electric extension cable: 30m),
- the device does not work in ATEX zones or explosive atmospheres (presence of flammable gas or dust etc.), which would require special protection.

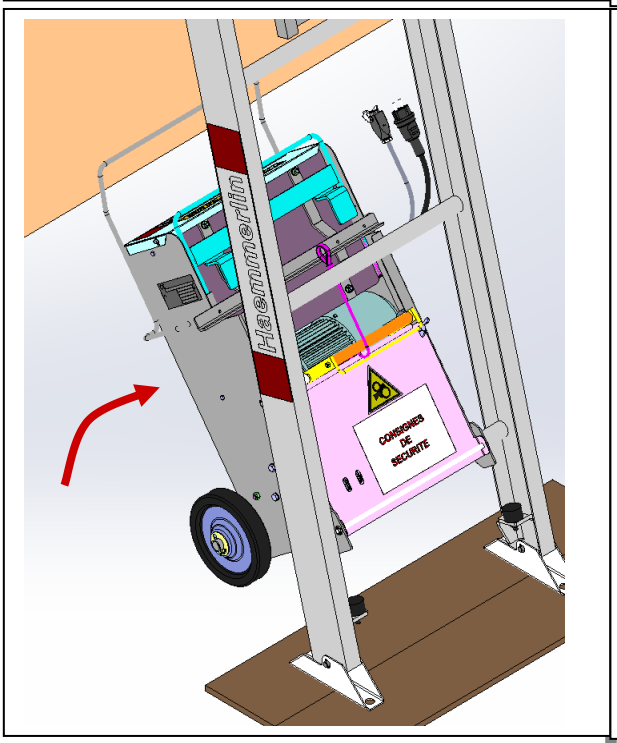


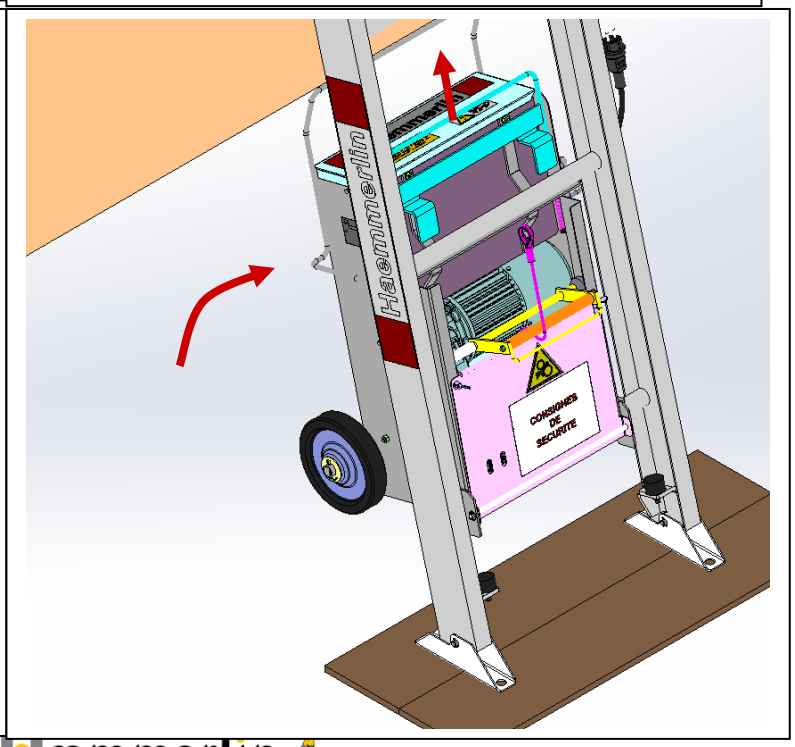
INSTALLATION OF THE ABM-VF 200/250 TREUIL for MAXIAL EXCELLIUM and EXPERT

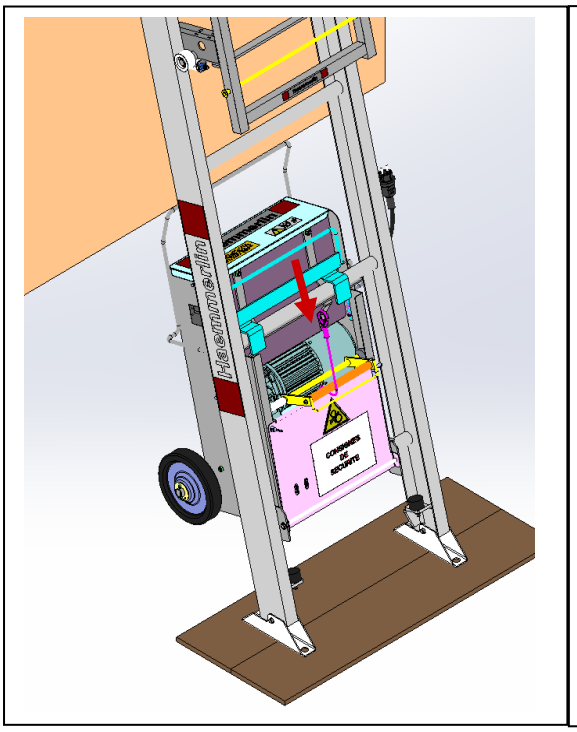
Move the winch to the back of the base ladder using the handle.
Remove the lower crossmember of the winch from the bottom rung of the base ladder and embed the winch fully using the handle. Before fully embedding the winch, raise the locking handle. As soon as the winch is fully embedded, release the locking handle so it automatically closes to secure the winch in the base ladder. The winch is ready to be connected.

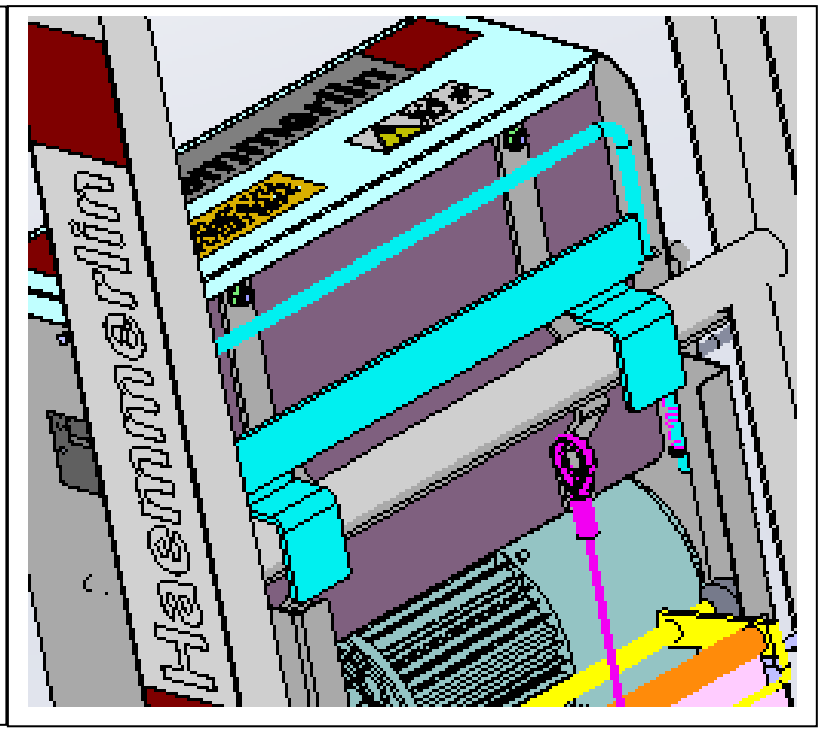








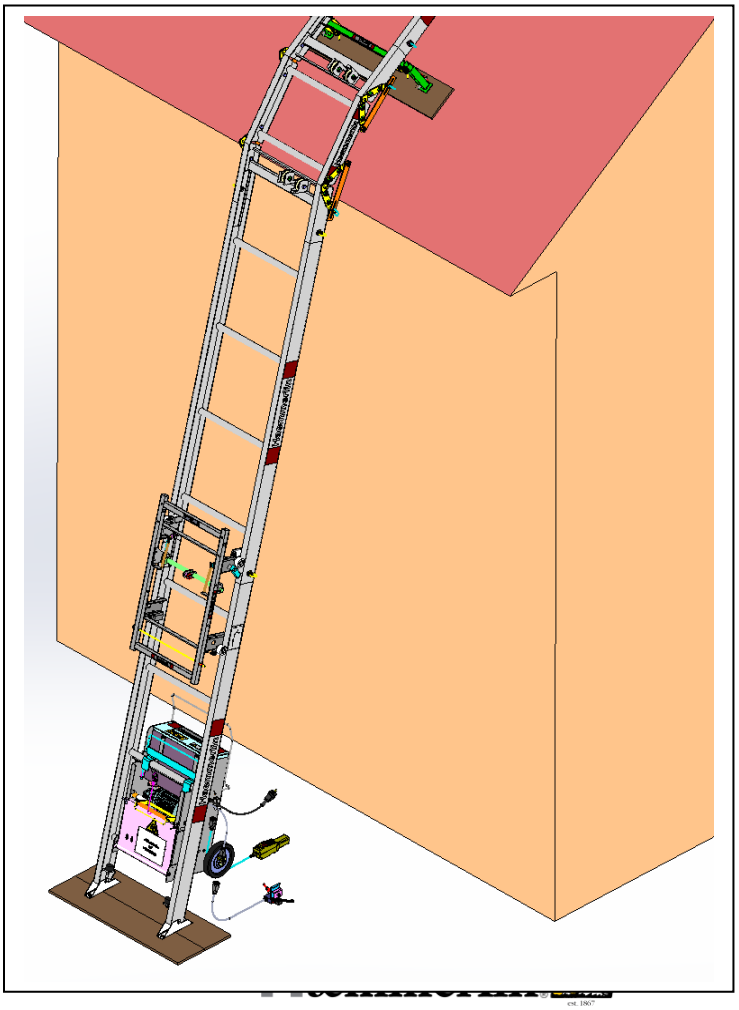




ELECTRICAL CONNECTIONS OF THE ABM-VF 200/250 WINCH MAXIAL EXCELLIUM and EXPERT

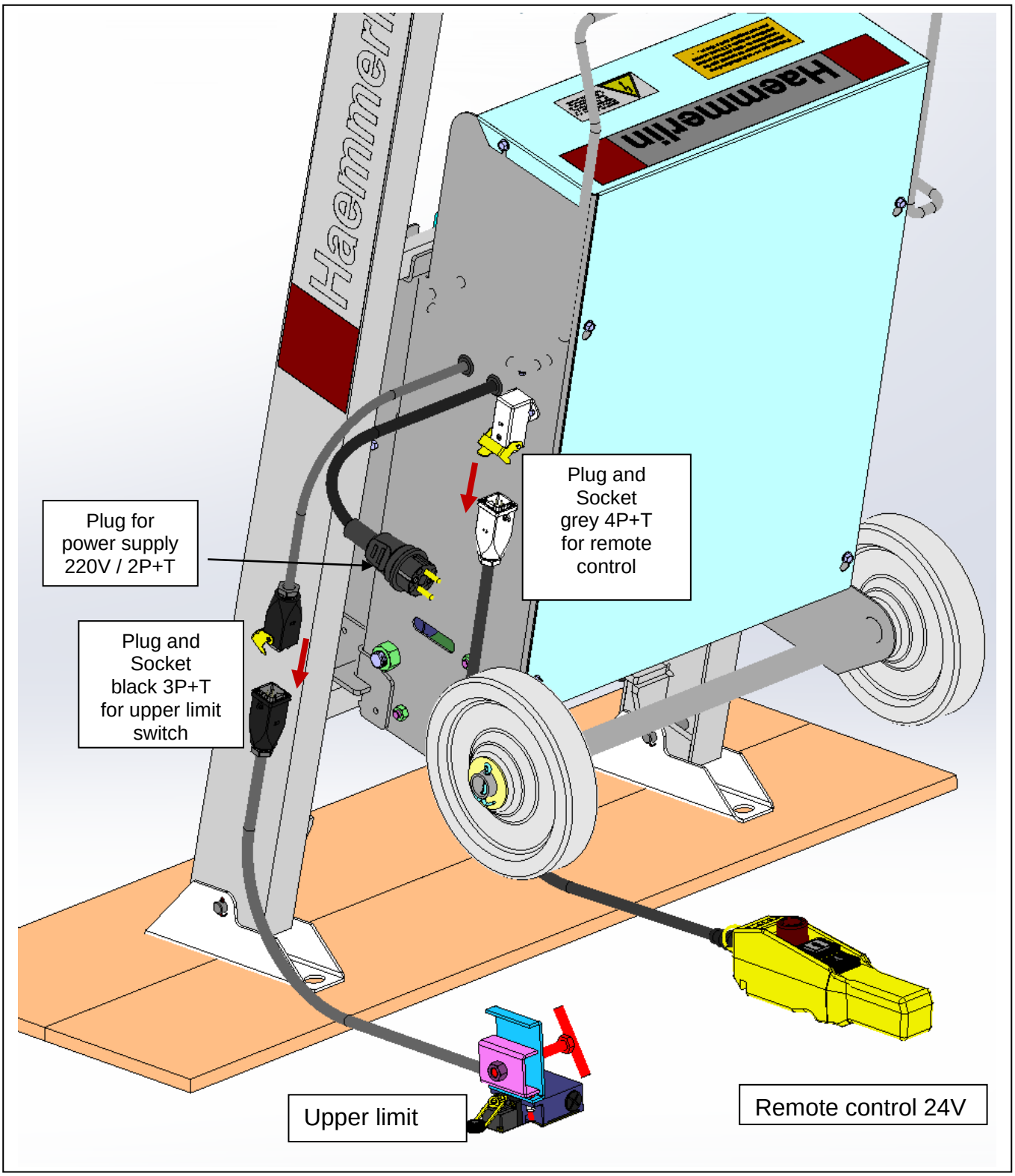
The next stage in the assembly of the hoist is the electrical connections:

- Complete 24V remote control including the button box (up, down and emergency stop), the electric cable length 3m and the male plug (grey / 4P+T)
- Upper limit switch complete with sensor to be clamped on the ladder, electric cable length 20m and male connector (black / 3P+T)
- Mobile power socket (black / 2P+T) with 1m long power cable



Connect the remote control, the upper limit switch and the power supply after ensuring that:

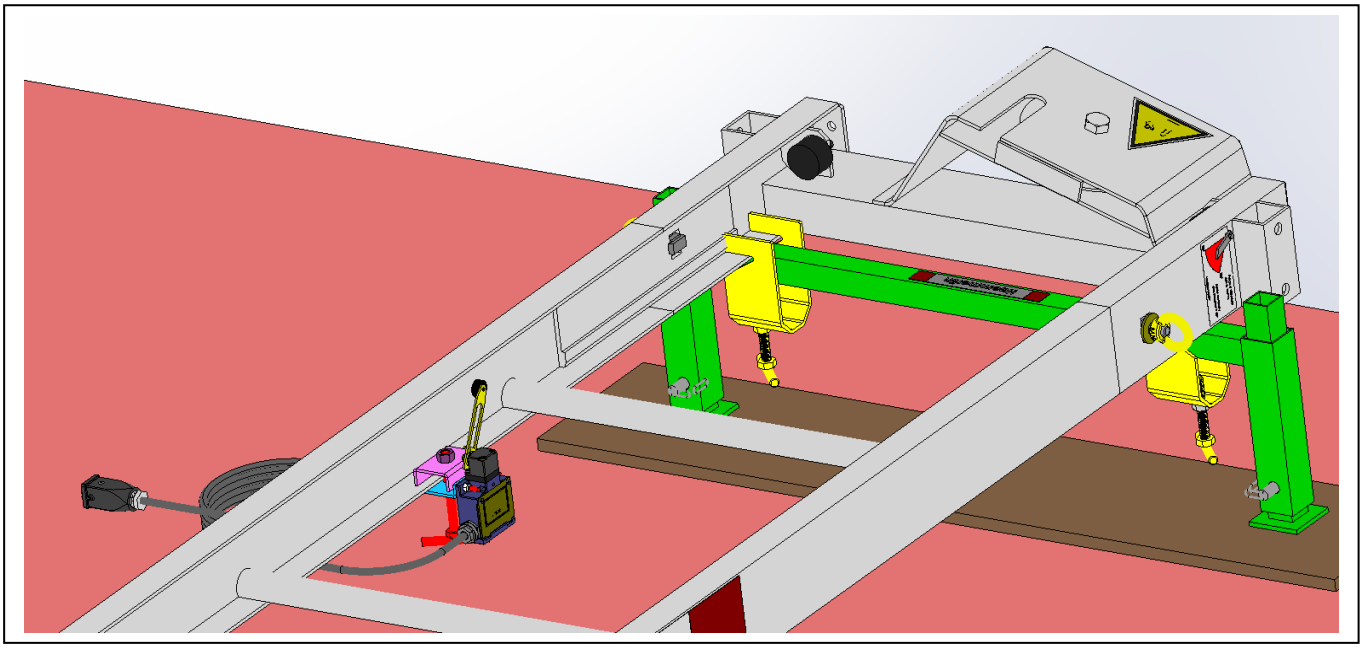
- the supply voltage is 220V50 single phase,
- The power supply line can support a current of 16A, (starting current = 16A),
- the power supply line is initially protected by a high sensitivity differential device 30mA for the protection of persons ⚠ and a circuit breaker at maximum 16A to protect the winch against overloads or short circuits,
- when using an electric extension cable, make sure that the cable conductors have a cross-section greater than or equal to 2.5mm2 each for a length of 0 to 15m and 4mm2 each for a length of 15 to 30m (maximum length of the electric extension cable: 30m),
- the device does not work in ATEX zones or explosive atmospheres (presence of flammable gas or dust etc.), which would require special protection.

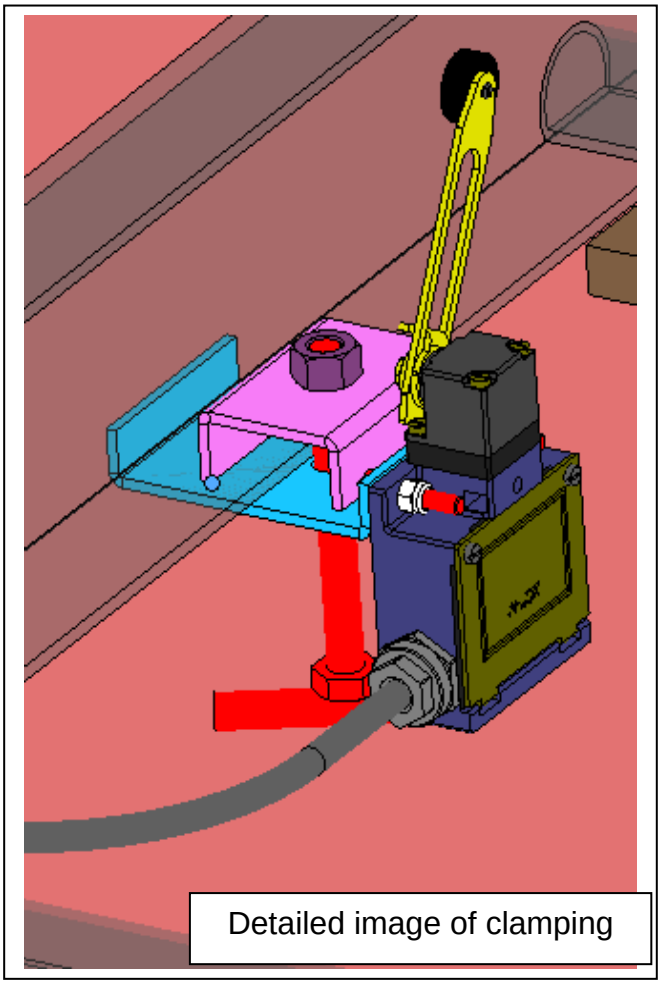


INSTALLATION OF THE UPPER LIMIT SWITCH ON THE LADDER

The installation of the upper limit switch on the ladder is identical for all types of electric winch (**175CA or 200/250ABM-VF)**

Fit the upper limit switch by clamping it to the bottom flange of the ladder profile at the point at which you wish to stop the trolley in the upward direction. Before connecting the upper limit switch to the winch, install the guide hooks for the upper limit electric cable (see next chapter).





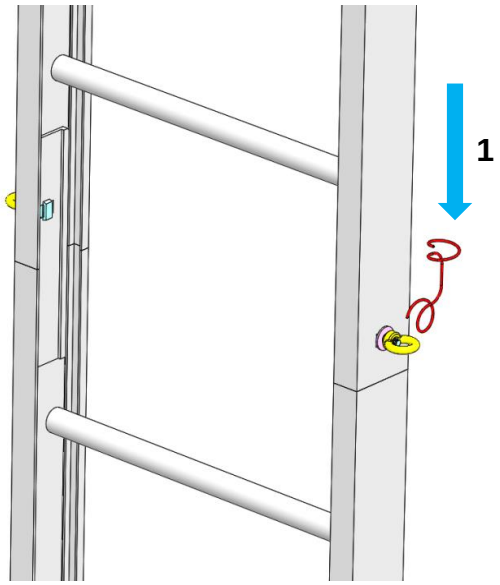
Detailed image of clamping

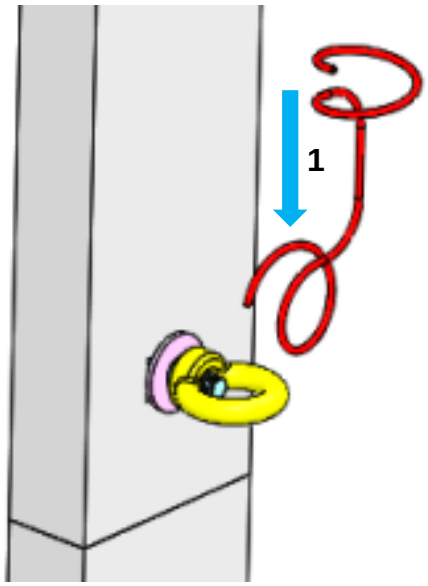
INSTALLATION OF THE GUIDE HOOKS FOR THE UPPER LIMIT ELECTRICAL CABLE

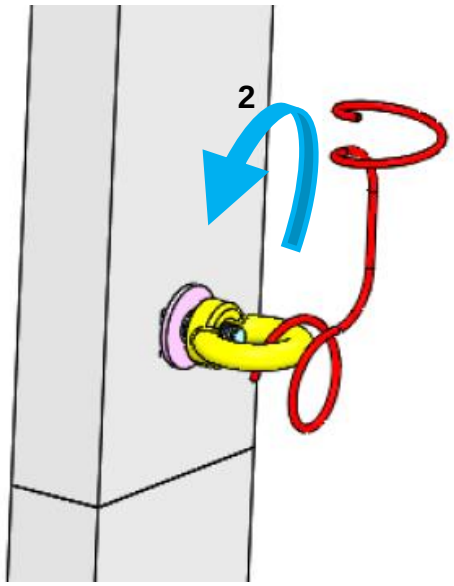
The guide hooks are used to guide the electrical cable of the upper limit switch along the ladder mat of the hoist to prevent the cable from hanging freely in the void and being damaged, crushed or cut.
The shape of the guide hooks allows them to be easily and quickly attached to the rings of the quick bolts at the connections between ladders and at the knee joints.
A set of 3 guide hooks is supplied with each hoist. As a rule, a set of 3 hooks is sufficient for base heights between 10 and 11m. When the total height of the lift exceeds 11m and depending on the inclination, as many hooks as necessary must be added to ensure optimal guidance of the upper limit switch cable.
These hooks are available in sets of 3 pieces under the article code 312703001.

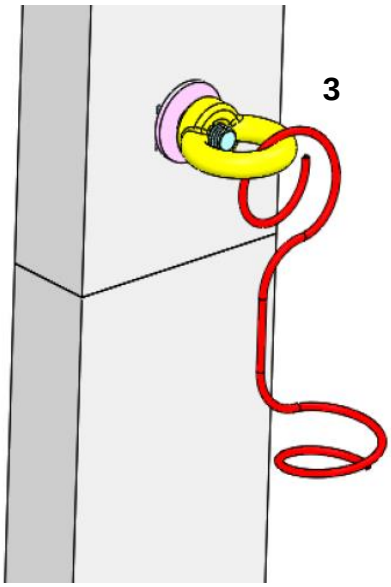
Installation of hooks:

- Bring the guide hook close to a quick bolt ring at the ladder connections or knee joints.
- Engage the spiral end of the hook in the ring of the quick bolt (1)
- Then turn the hook 180° so that the spiral is screwed around the ring (2)
- Release the hook, it is now in place and ready to receive the electric cable to be guided (3)



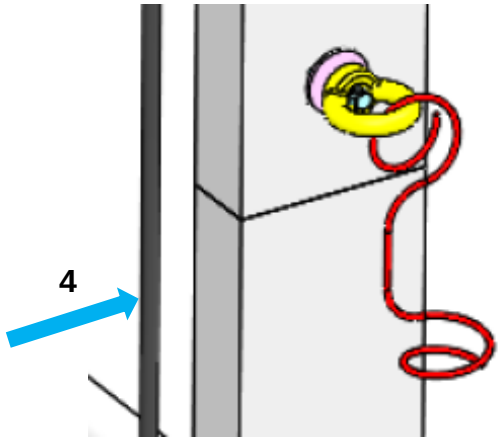


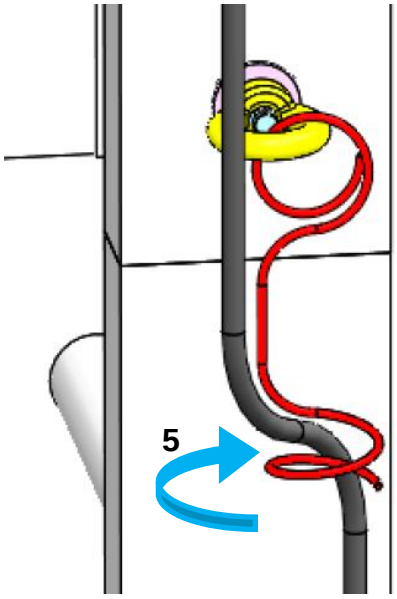


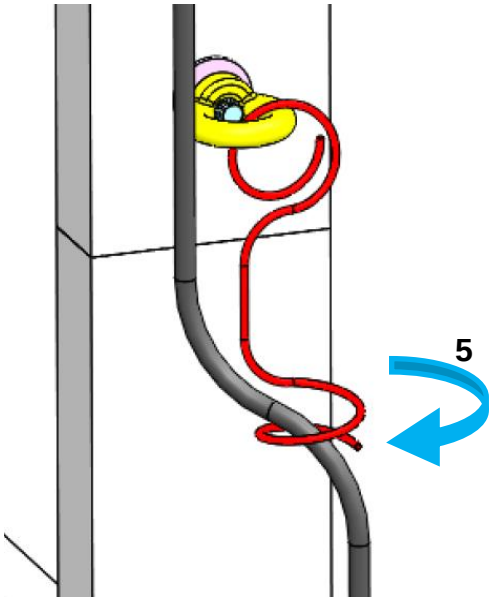


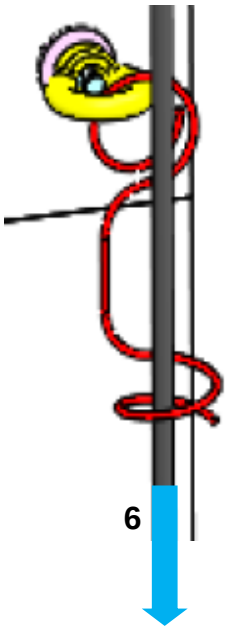
Cable guidance using hooks:

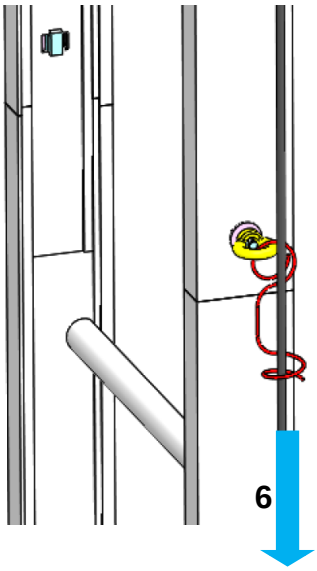
- Bring the electric cable to the hook (4)
- Insert the cable into the lower spiral of the hook until the cable passes through the spiral (5)
- Stretch the cable and then move on to the next hooks to repeat the operation as many times as necessary (6)
- When the electric cable is fully guided along the ladder mat, connect the upper limit switch to the winch so that the hoist can operate











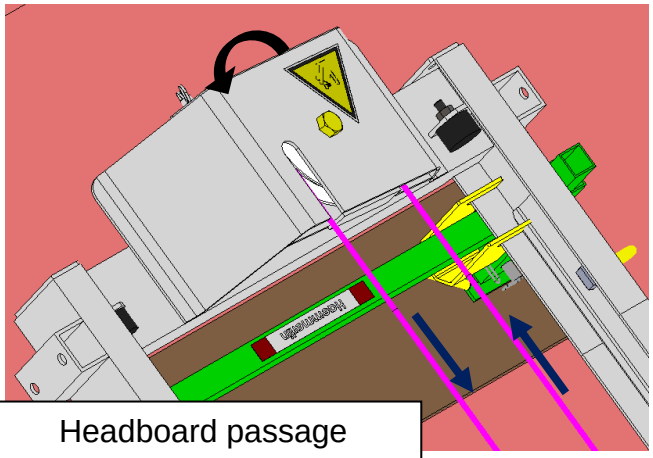
INSTALLATION OF THE LIFTING CABLE

The installation of the lifting cable requires the complete installation of the hoist and the electrical connections.
Unwind the drum lifting cable, a length equivalent to twice the maximum travel of the trolley from the bottom to the top end of the ladder, by pressing the "DOWN" button (black) on the remote control and pulling on the loop at the end of the cable.
When the lifting rope is not tense, the cable slack safety device prevents unwinding. To disable this lower slack cable safety device, stand in front of the winch and push the lower safety roller towards the inside of the winch.
Perform this operation with two people, one handling the remote control and disabling the lower cable slack safety device and one unwinding the cable, taking care not to leave the cable drum disordered.
The other way to override this safety device is simply to pull the lifting cable upwards strongly to create tension.
During this action of unwinding the cable, be very careful not to press the "UP" button accidentally, because the cable would then be wound up on the drum and could also wind your hand (the one which holds the end of the cable) towards the interior of the drum and cause serious injuries.
In all cases, the person who unwinds, handles and winds the hoisting cable must wear protective gloves throughout the installation operations.
As a reminder, it is forbidden to climb on the ladder of the hoist, even during the lifting cable assembly or installation phase.
To lift the lifting cable up to the headboard at the upper end of the ladder via the knee joint, a rope attached to the loop of the cable must be used and the work must be carried out from the top of the site, taking all necessary precautions, i.e. being secured by a railing or safety harness equipped with a fall arrest system and attached to the building.
Run the lifting cable between the trolley and the ladder rungs, then over the knee joint pulleys (right), then over the headboard pulley (right to left), then back down over the knee joint pulleys (left) and under the trolley.
It is not necessary to dismantle the pulleys to install the cable, but be very careful not to get your fingers caught, cut or crushed!
Then attach the cable loop to the cable hooking shaft "A" of the trolley's parachute shaft and lock the cable hooking shaft "A" with the clip pin "B".
Stretch the lifting cable and wind the excess cable onto the drum by pressing the "UP" button (white) on the remote control.
Verify the proper winding of the lifting cable around the winch drum. In case of the lifting cable on the drum being in disorder (incorrect winding, winding only on one side of the drum, cable strands which cross each other, etc), unwind all the disorderly part of the cable and wind it again correctly.
We remind you that the lifting rope must always be perfectly wound with adjoining turns and without the strands crossing. This is very important to avoid premature wear and tear of the cable.
The risk of the rope being in disorder on the drum can be eliminated by making sure that the rope is always taut during assembly and operation as well as when handling the hoist.
Check the free passage and positioning of the cable on all pulleys and the attachment of the cable to the trolley.

⚠ **Verify the general condition of the lifting cable. It must be replaced if it shows tears or crushing.**
It is strictly forbidden to repair a lifting cable using couplers or cable ties!

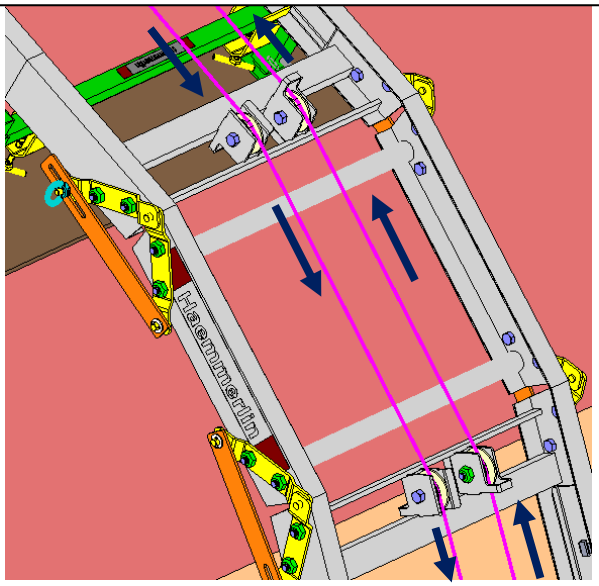
Test that the parachute system is working properly by lifting and suddenly releasing the trolley.
Check the correct operation of the upper limit switch and the slack cable detector.
Perform an empty test, then a loaded test and an overloaded test
The hoist is now ready for use.

INSTALLATION OF THE LIFTING CABLE

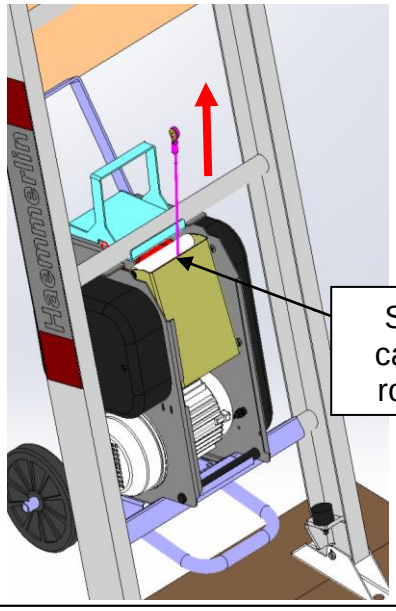


Headboard passage

Knee joint passage

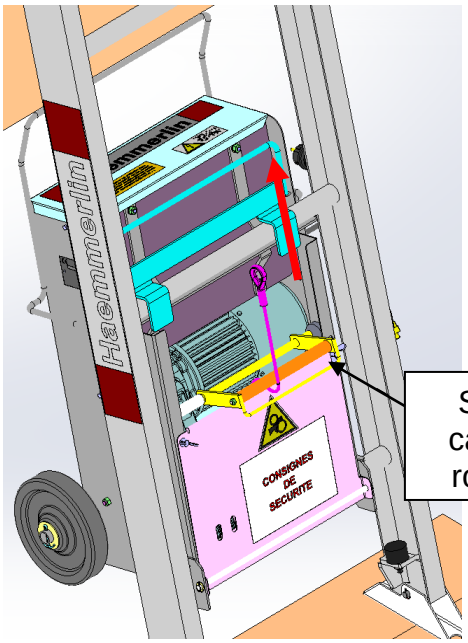


Winch output 175 CA



Soft cable roller

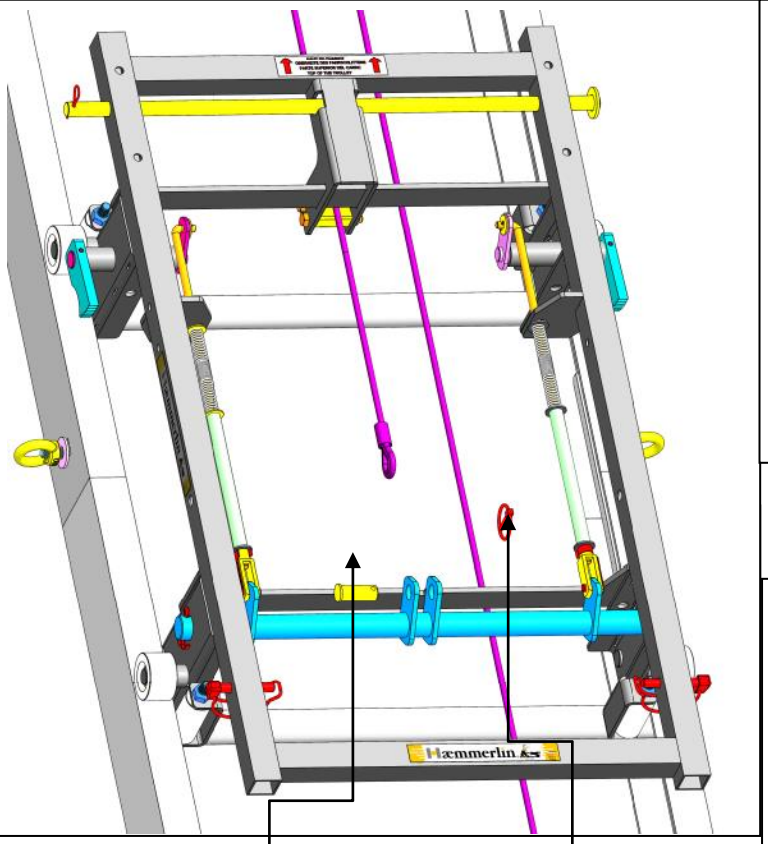
Winch output 200/250 ABM-VF



Soft cable roller

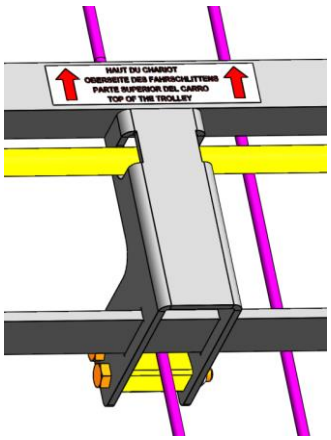
INSTALLATION OF THE LIFTING CABLE

Hooking the cable onto the parachute shaft of the trolley

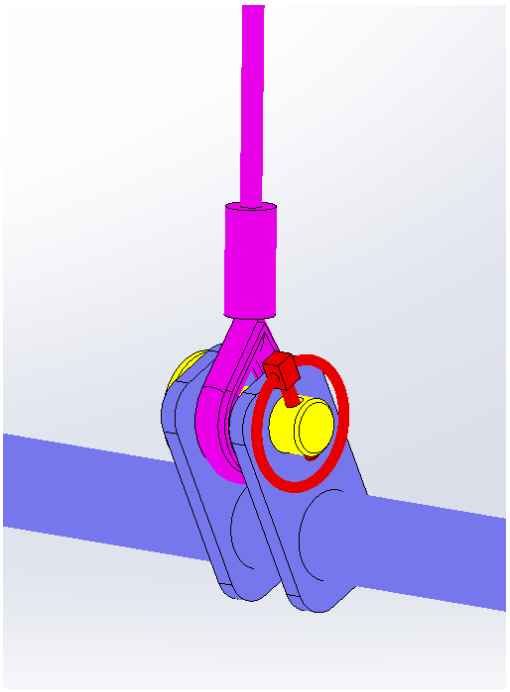


Cable hooking shaft A

Clip Pins B



Cable hooked on the parachute shaft of the trolley



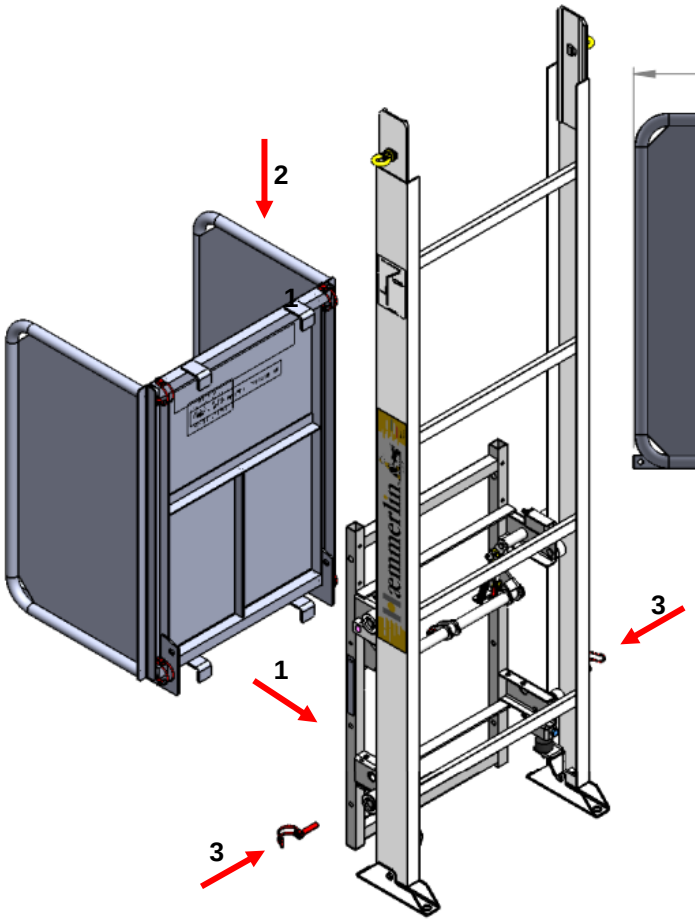
INSTALLATION AND USE OF ACCESSORIES

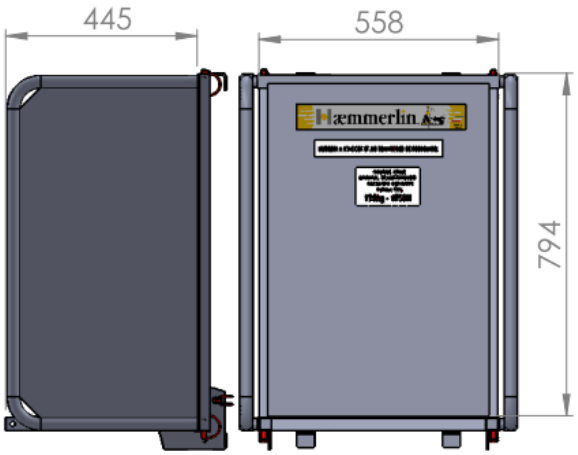
ROOFER PLATFORM

The roofer platform can transport all types of materials and equipment vertically and inclined. When the hoist is installed vertically, the front panel must be installed. It can also be used to transport very long or bulky items by removing the side panels. Care should always be taken to properly secure, brace or strap down equipment and materials being transported so that no part of the load can fall off.

Installation:

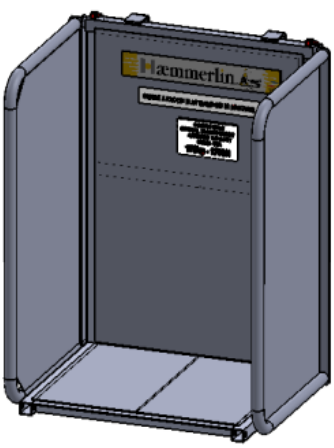
- Hang the roofer platform on the trolley (1-2) so that the 2 upper hooks of the platform are hooked onto the upper crossmember of the trolley and the lower hooks of the platform are hooked onto the lower crossmember of the trolley.
- Lock the platform to the trolley with the clip pins (3) to secure it and so the roofer platform cannot become unhooking or fall off.



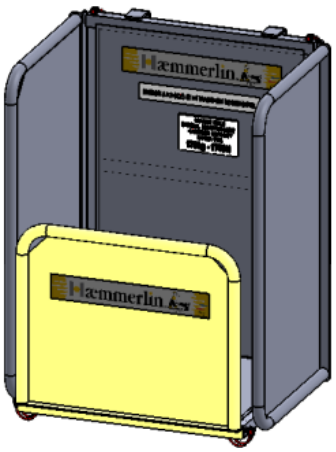


Useful dimensions

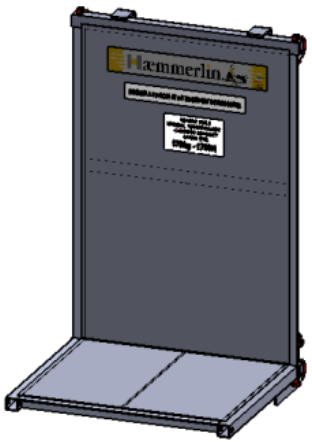
MAX PAYLOAD 175kg



Roofer platform with side panels



Roofer platform with side and front panels



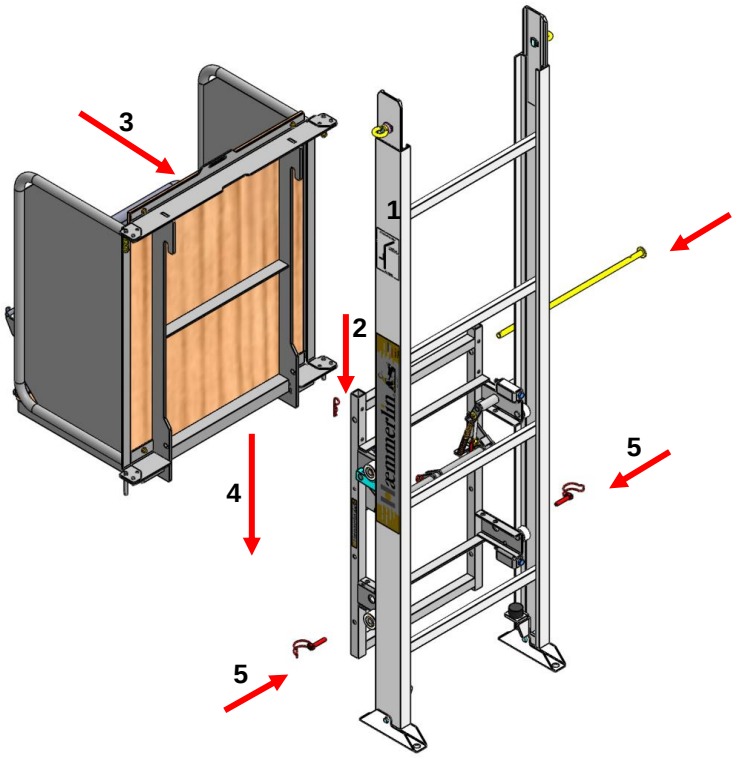
Roofer platform without panels

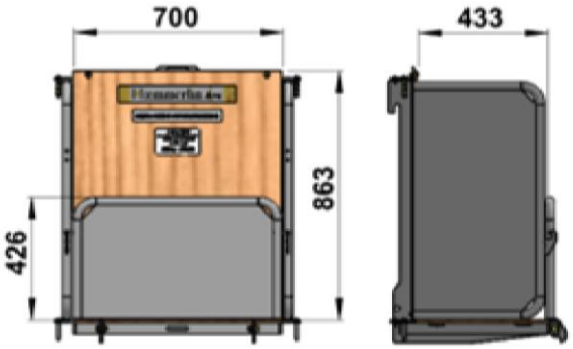
UNIVERSAL PLATFORM

The roofer platform can transport all types of materials and equipment vertically and inclined. It can also be used to transport very long or bulky items by deploying the side panels and the front panel. Care should always be taken to properly secure, brace or strap down equipment and materials being transported so that no part of the load can fall off.

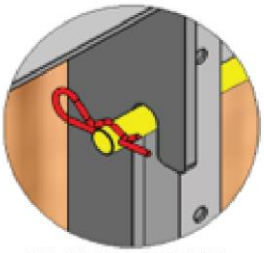
Installation:

- Place the hooking shaft on the trolley (1) and secure it with the pin (2).
- Attach the universal platform to the trolley (3-4) so that the hooks on the platform insert into the trolley's hooking shaft (see detailed image for hooking).
- Lock the universal platform to the trolley with the clip pins (5) to secure it against unhooking and falling off (see detailed image for locking).





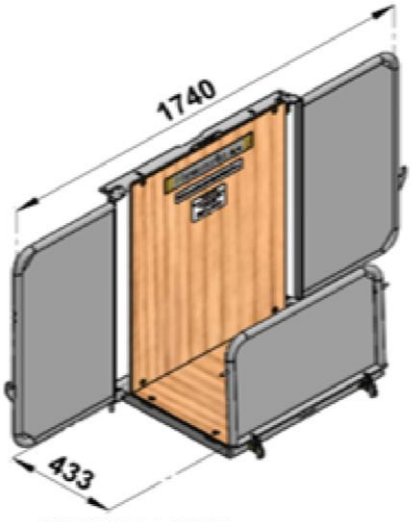
EFFECTIVE DIMENSIONS
SIDE AND FRONT PANELS CLOSED



DETAILED IMAGE OF THE HOOKING

DETAILED IMAGE OF THE LOCKING

SIDE AND FRONT PANELS OPEN



SIDE PANELS OPEN

MAX PAYLOAD 250kg

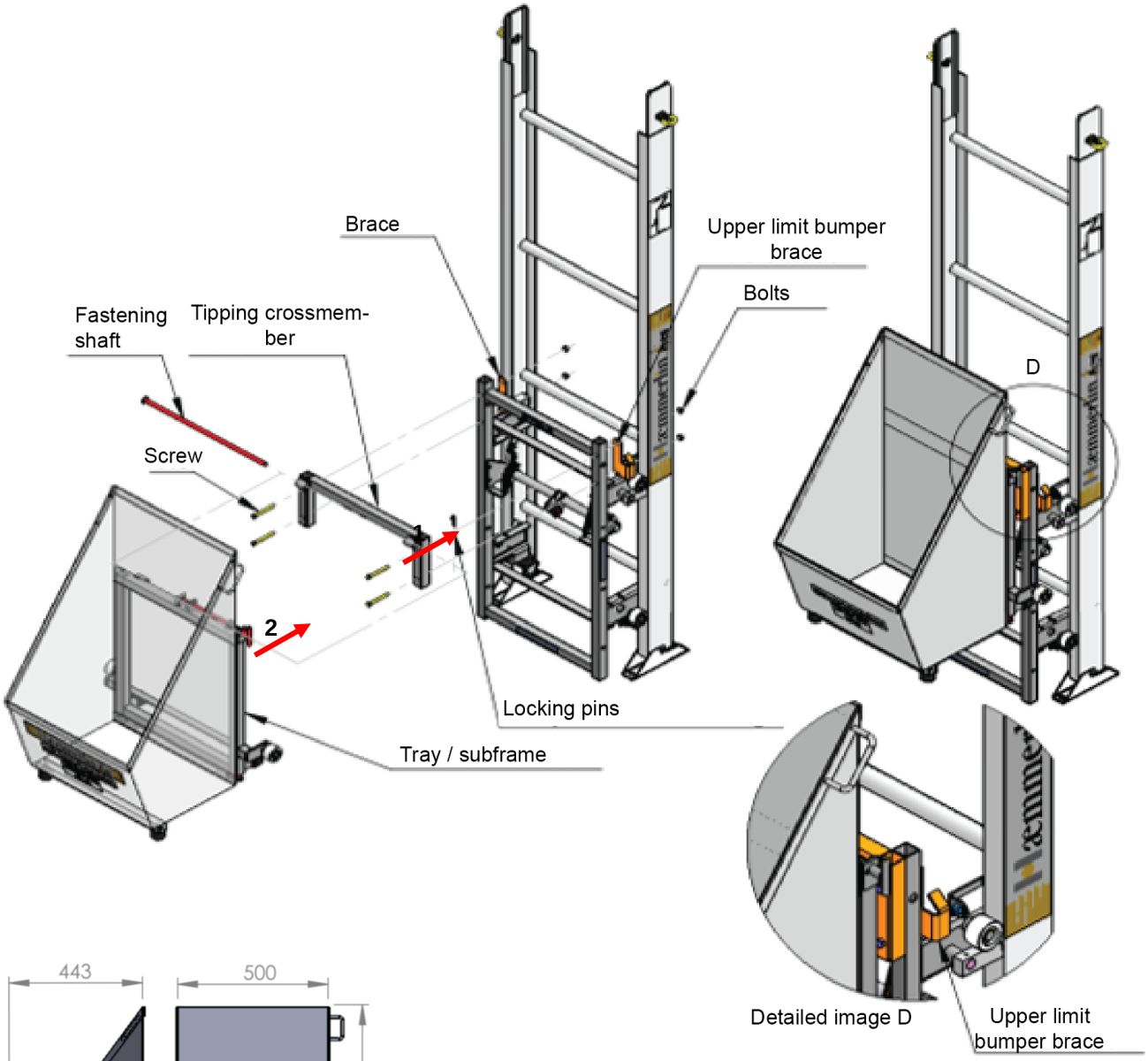
Only the body of the tray can support a load of 250kg. The side and front panels are not designed to support heavy loads, but only to prevent objects from falling off or to balance bulky loads that may protrude from the platform.

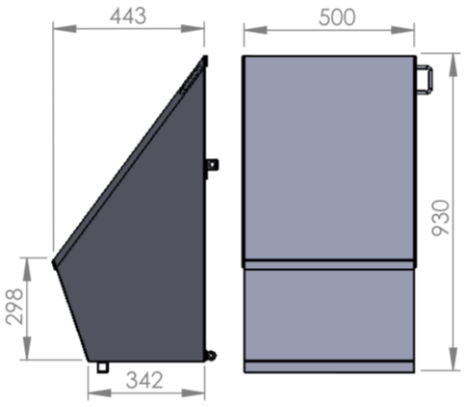
DOUBLE TIPPING SKIP

The tipping skip is used to transport and dump concrete, sand and rubble of all kinds automatically up and manually down. Care must always be taken to ensure that the material being transported cannot fall.

Installation of the skip:

- Fasten the tipping crossmember to the trolley (1) with the brace, the upper limit bumper brace, 4 screws and 4 bolts. Before tightening the bolts, make sure that the braces are positioned under the trolley frame and that the upper limit bumper brace is positioned on the right (see detailed image D).
- Then hook the tray/ subframe onto the tipping crossmember (2) using the fastening shaft and secure with the locking pin.



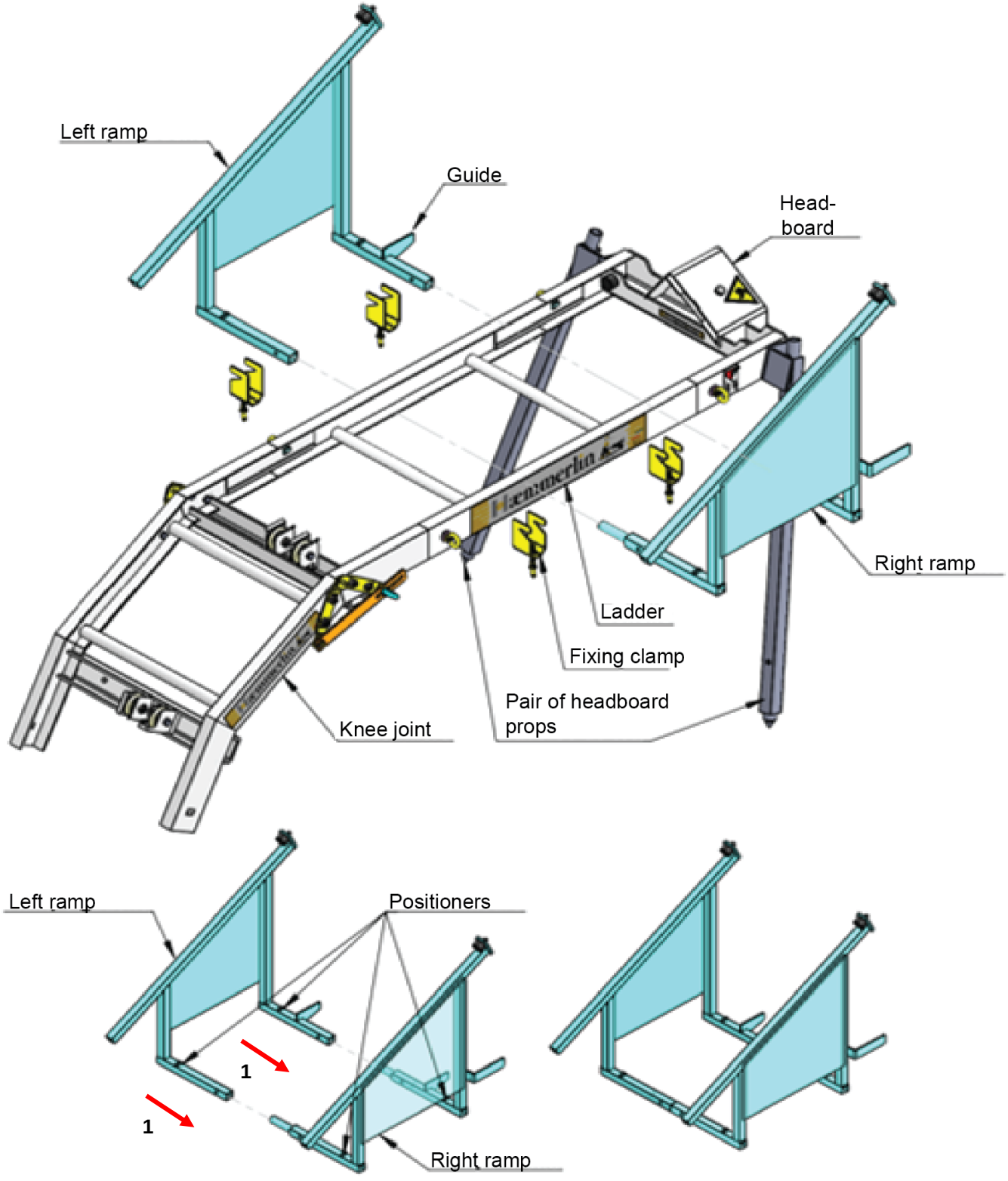


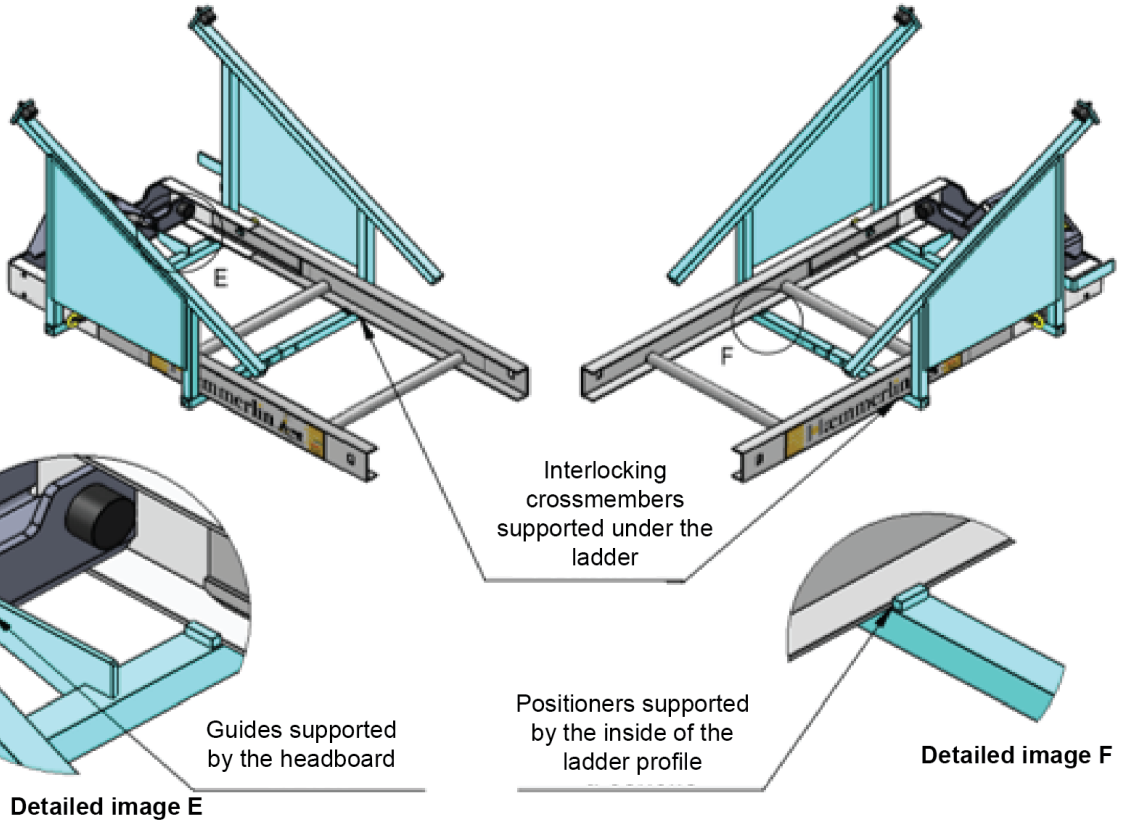
Useful dimensions

Before installing the tipping ramps, check that the end of the ladder is supported. If this is not the case, a pair of headboard props must be installed first (see page 56).
In order to install the tipping ramps, a ladder 0.5m, 1m, 2m or more must be installed between the knee joint and the headboard.

Installation of the tipping ramps:

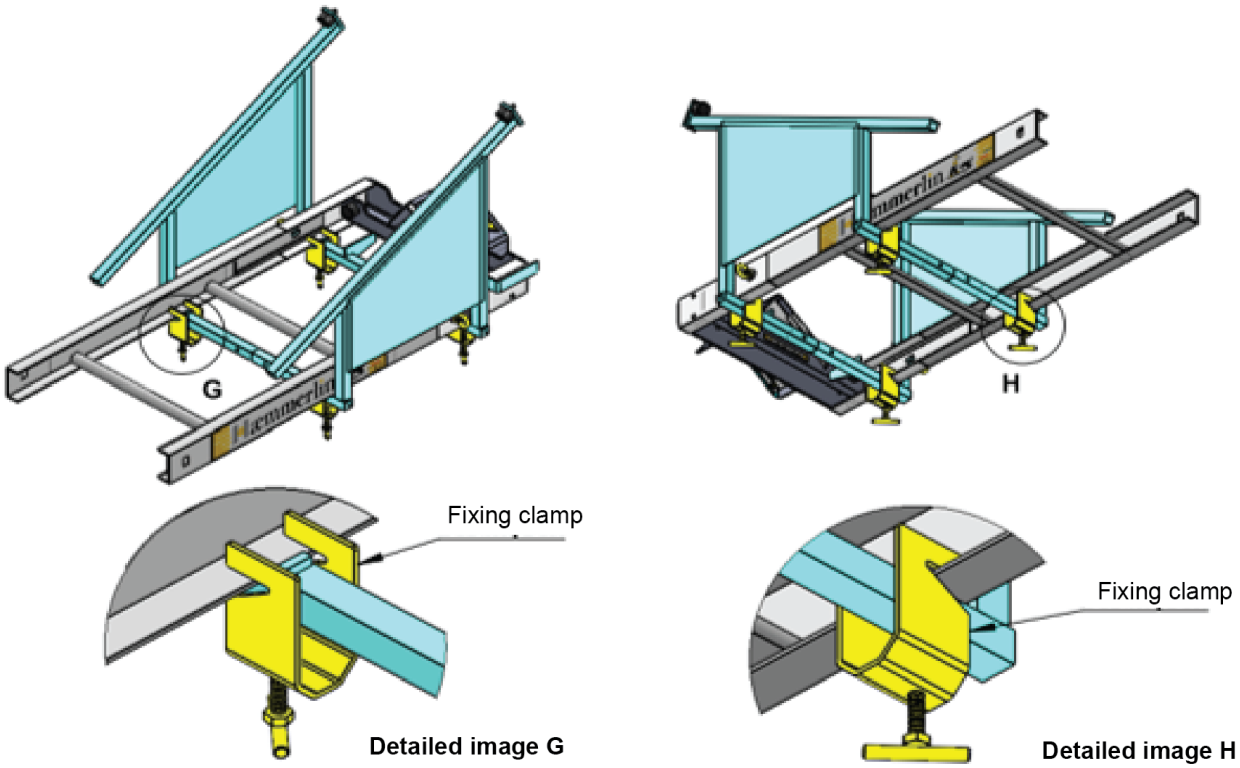
- Fit the left and right ramps (1) together, then fit the left and right ramp unit to the end of the ladder (2) so that:
  - the interlocking crossmembers are supported under the ladder.
  - the guides are in contact with the headboard (detailed image E).
  - the positioners are supported by the inside of the ladder profile (detailed image F).
- Lock the assembly in this position with the 4 fixing clamps (3)-(detailed images G-H).





Detailed image E

Detailed image F



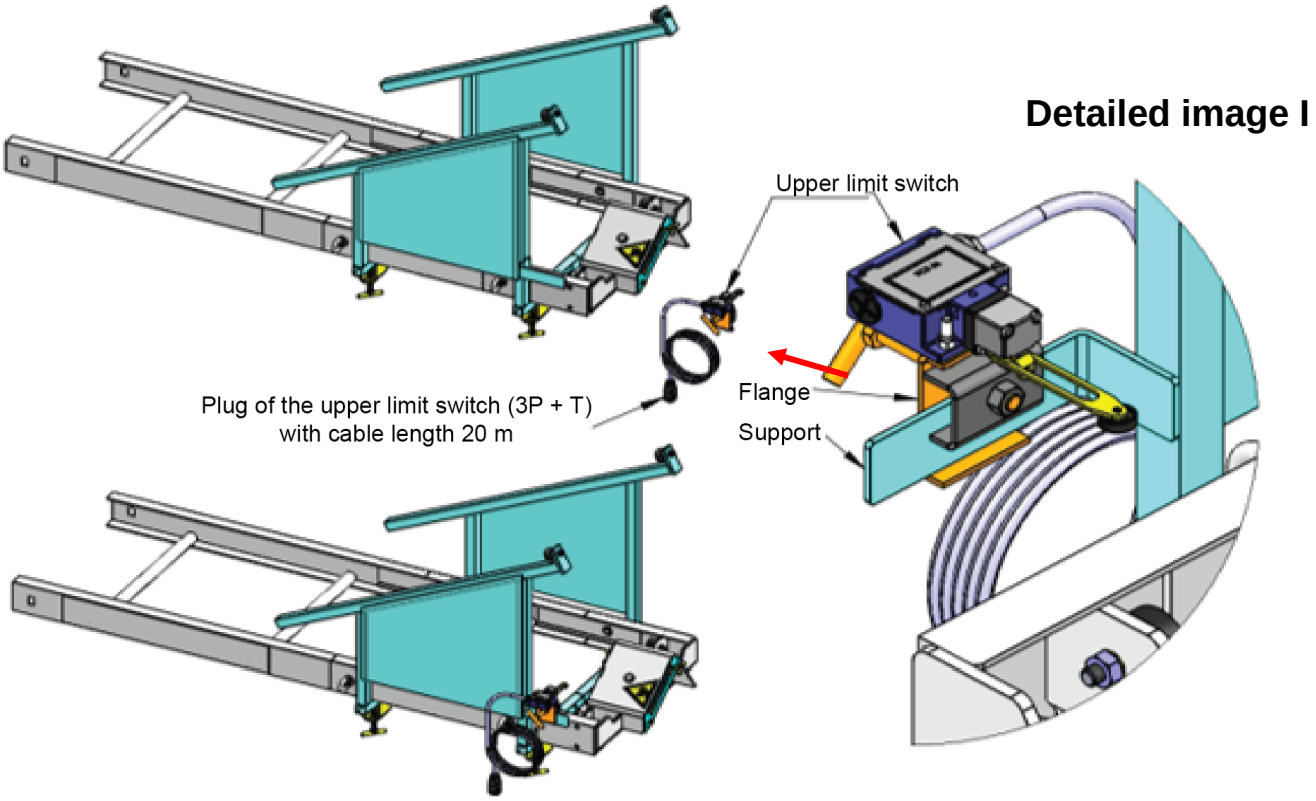
Detailed image G

Detailed image H

The upper limit switch is used to stop the equipment moving in the upward direction.
It is also used to stop the skip from tipping when it reaches the end of its movement during tipping.

Installation of the upper limit switch:

- The upper limit switch must be installed on the right tipping ramp.
- Clamp the upper limit switch to the ramp support using the upper limit switch flange.
- Connect the plug of the upper limit switch to the mobile socket at the winch output (see chapter entitled “Electrical Connections of the Winches" pages 23 and 26)

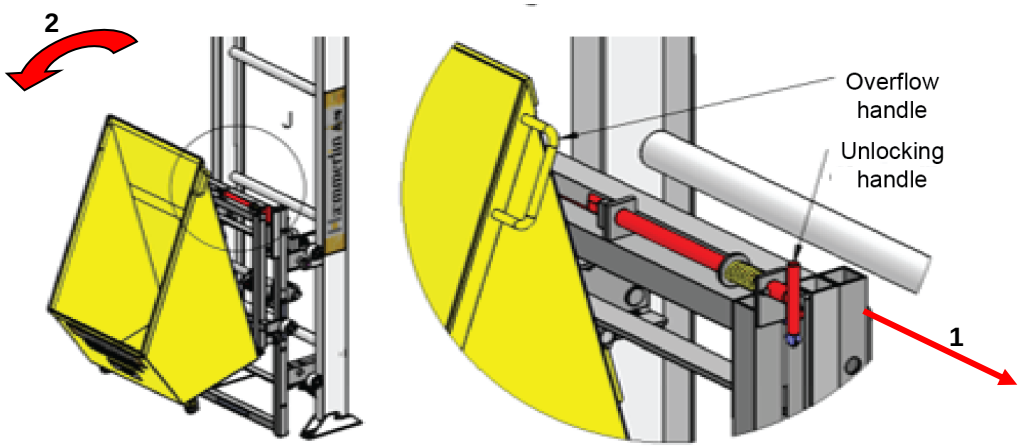


Detailed image I

USE OF THE DOUBLE TIPPING SKIP

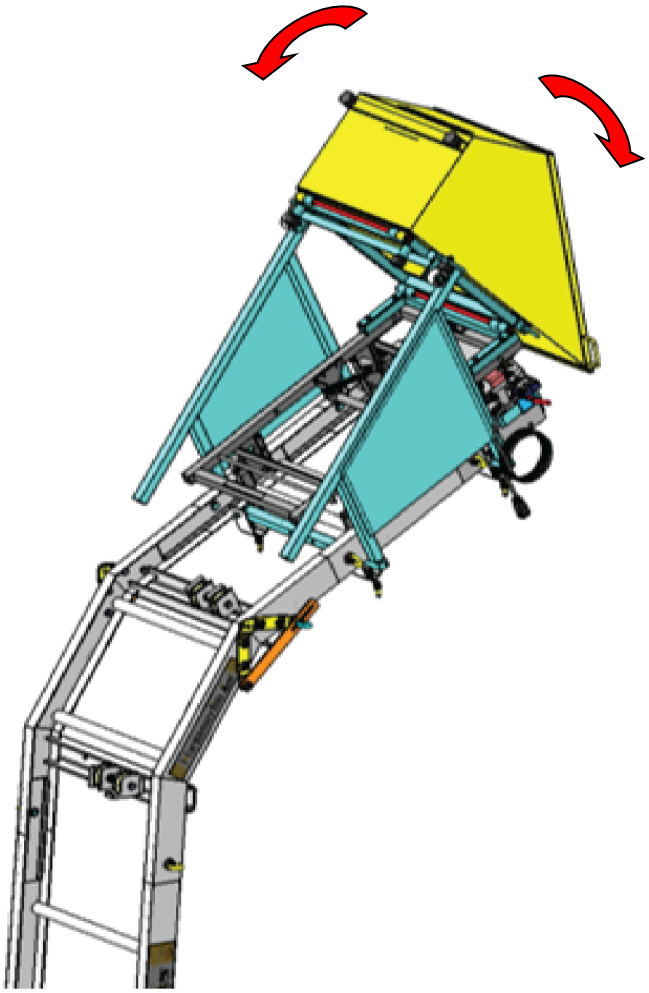
Manual tipping downwards:

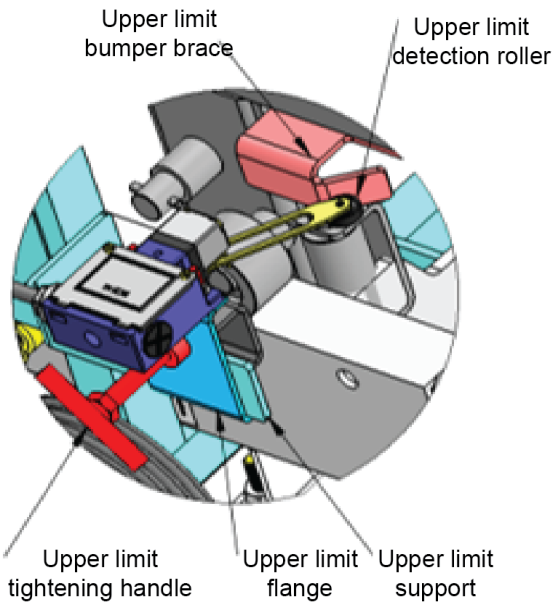
- Pull the unlocking handle (1) while holding the tipping handle firmly to prevent the skip from suddenly tipping down.
- Move the tipping handle (2) to gradually tip the skip to empty it.
- To close the skip, fold the skip in by pressing the handle until it locks automatically.



Detailed image J

Automatic tipping upwards:
Tipping up and returning the skip is done automatically by pressing the "up" and "down" buttons on the remote control respectively.
The upper limit switch installed beforehand on the right tipping ramp stops the skip from tipping when it reaches the end of its movement.





Detailed image K

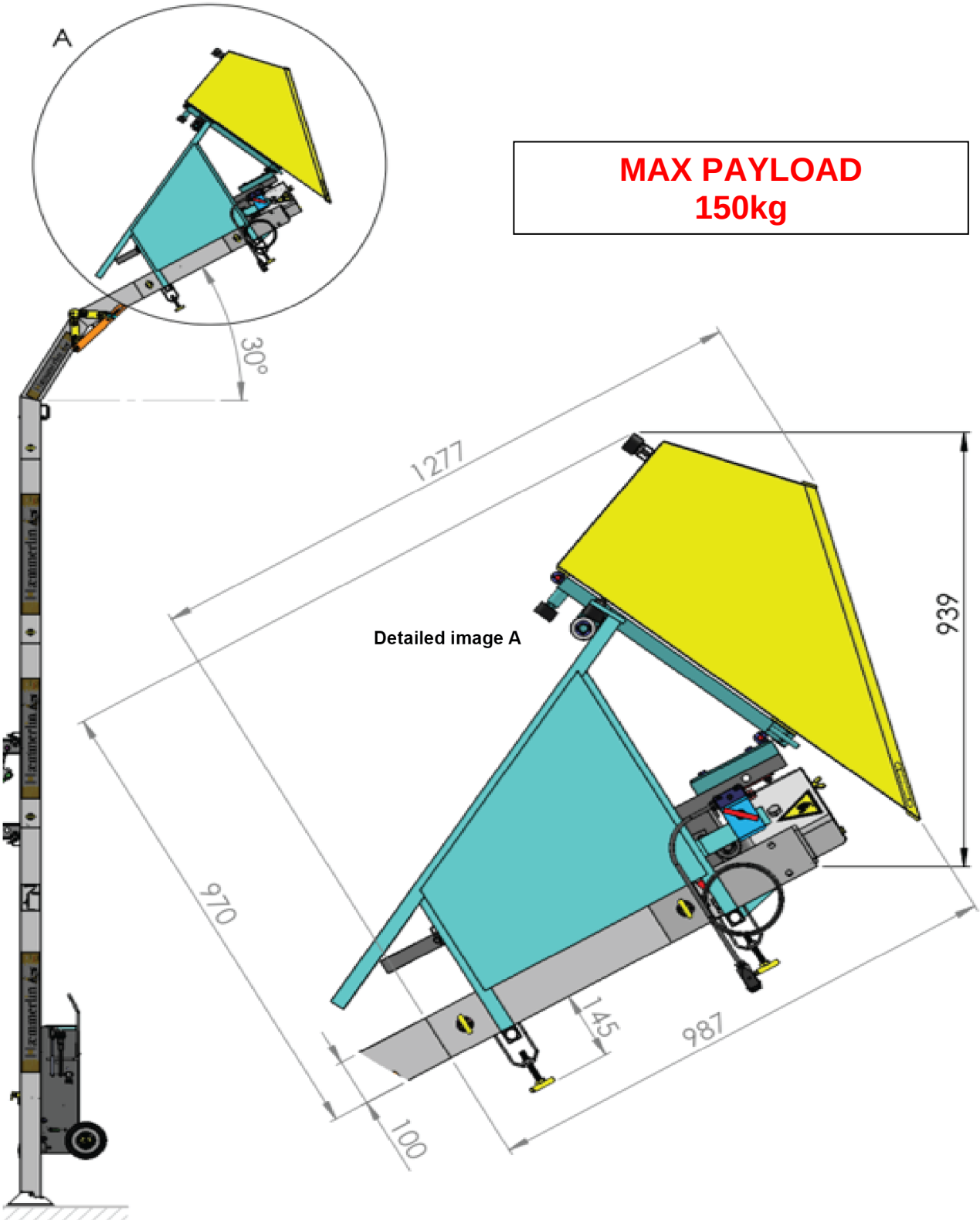
Before doing an empty test, check that the ladder slope is greater than or equal to 30° in relation to the ground in order to guarantee that the skip returns in good conditions.
Due to the high dynamic forces generated during the upward tip, it must be ensured that the end of the ladder is well supported. We recommend the use of the pair of headboard props (see page 56). However, other means are possible, provided that the headboard is well supported and fixed to the building to prevent the hoist from sliding or tipping over**.**

Perform several empty test, then a loaded test:
- assembly of the mobile equipment,
- automatic tipping upwards of the skip,
- return of the skip,
- descent of the mobile equipment,
- manual tipping downwards of the skip.

Also verify that the upper limit switch is working properly. This switch must stop the skip from tipping when it reaches the end of its movement during automatic tipping upwards. To do so, the detection roller must be crushed by the bumper brace when the skip tips at the end of the movement. If necessary, adjust the position of this detection roller by moving the clamping handle and the flange to adjust the position of the upper limit switch (see detailed image K).

When the above points have been checked, the double tipping skip is ready for use.

OVERLOAD OF THE DOUBLE TIPPING SKIP



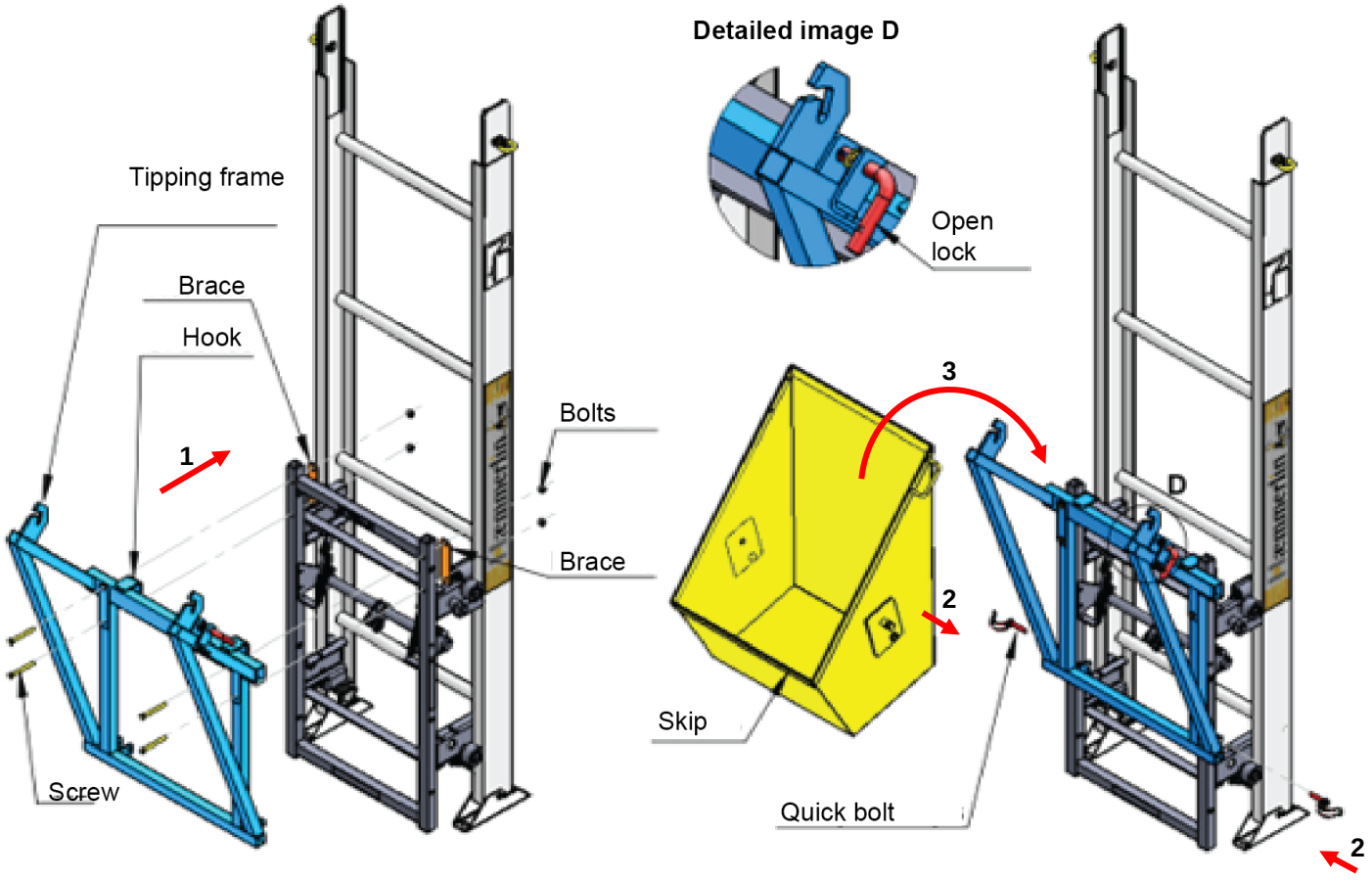
MAX PAYLOAD
150kg

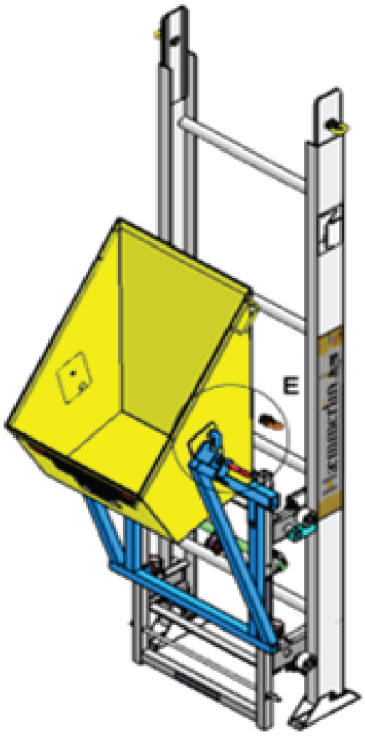
TIPPING SKIP

The tipping skip is used to transport and dump concrete, sand and rubble of all kinds manually up and down.
It has the particularity of being designed for tipping which allows the skip to remain in the same position, regardless of the slope of the ladder including during the passage of the knee joint.
When the skip is loaded, it must be empty.
When the skip is empty, it should always be secured with the lock.
Care must always be taken to ensure that the material being transported cannot fall.
Tipping up and down is done manually.

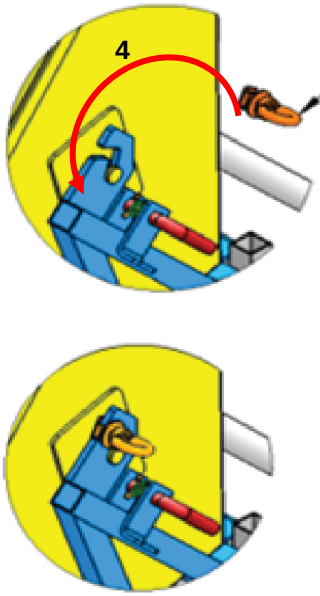
Installation of tipping skip:

- Attach the tipping subframe to the trolley so that the hooks of the tipping subframe hook onto the upper crossmember of the trolley (1), then secure the assembly with the 2 braces, 4 screws and 4 bolts. Before tightening the bolts, make sure that the braces are positioned under the trolley frame.
- Lock the tipping subframe to the trolley using the clip pins (2).
- Before hooking the skip, make sure the lock is in the open position (see detailed image D).
- Then hook the tray onto the tipping frame (3) by inserting the tipping shafts of the skip into the compartments provided on the tipping frame.
- When the skip is hooked onto the tipping frame, fit the quick bolt (4) (see detailed image E).
- Tighten the quick bolt properly so that the skip is securely attached and cannot fall off (see detailed image F).

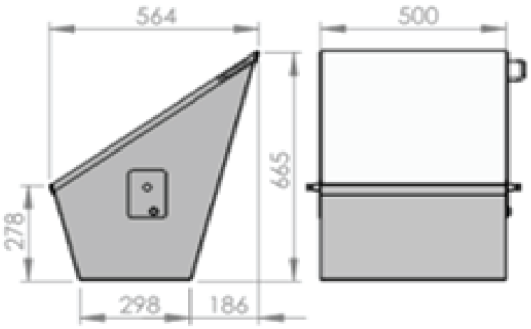




Detailed image E



MAX PAYLOAD
150kg



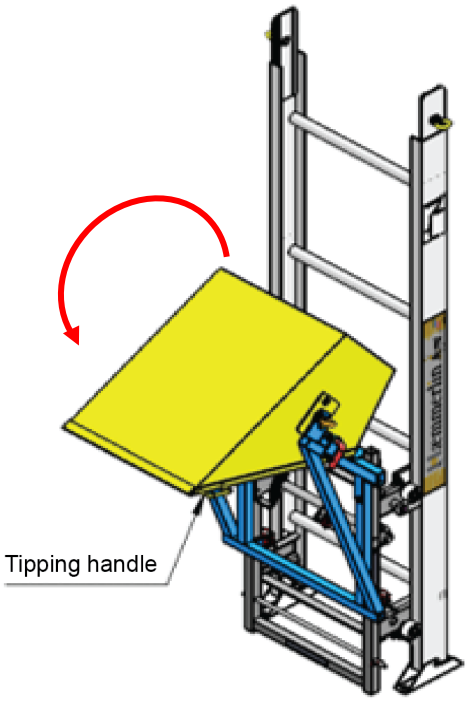
Useful dimensions

Detailed image F

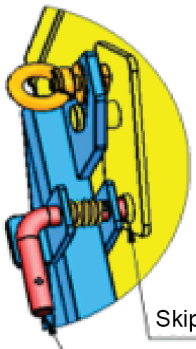
USE OF THE TIPPING SKIP

Manual tipping downwards:

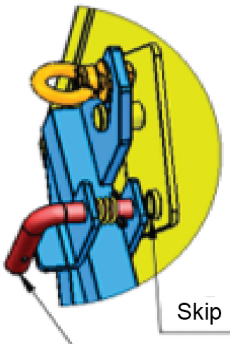
- Move the tipping handle to gradually tip the skip to empty it. We remind you that to be emptied, the skip must be unlocked (see detailed image G)
- When the skip is emptied, it must be locked (see detailed image H) by moving the skip lock before raising the mobile equipment.



Detailed image H

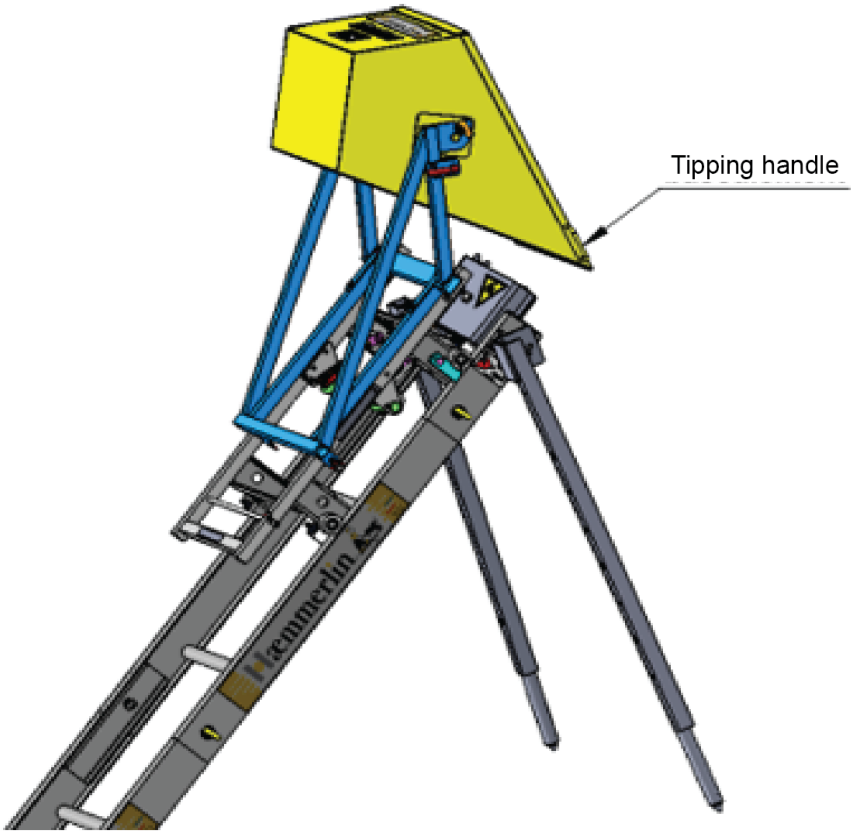


Detailed image G



Manual tipping upwards:

- Move the tipping handle to gradually tip the skip to empty it. We remind you that to be emptied, the skip must be unlocked (see detailed image G)
- When the skip is emptied, it must be locked (see detailed image H) by moving the skip lock before lowering the mobile equipment.



Before doing an empty test, check that the ladder slope is greater than or equal to 30° in relation to the ground in order to guarantee that the skip returns in good conditions.
Due to the high dynamic forces generated during the upward tip, it must be ensured that the end of the ladder is well supported. We recommend the use of the pair of headboard props (see page 56). However, other means are possible, provided that the headboard is well supported and fixed to the building to prevent the hoist from sliding or tipping over**.**

Carry out several empty tests (skip locked) and then loaded tests (skip unlocked):

- assembly of the mobile equipment,
- manual tipping up of the skip,
- return of the skip,
- descent of the mobile equipment,
- manual tipping downwards of the skip.

Also verify that the upper limit switch is working properly.
If necessary, adjust the position of this upper limit switch by moving the clamping handle and the flange (see chapter entitled “Installing the upper limit switch on the ladder” page 27)

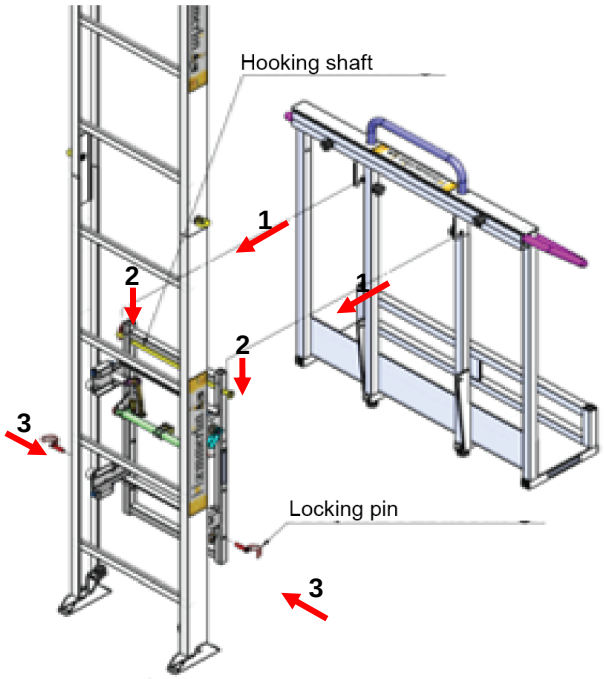
When all of the above points have been checked, the tipping skip is ready for use.

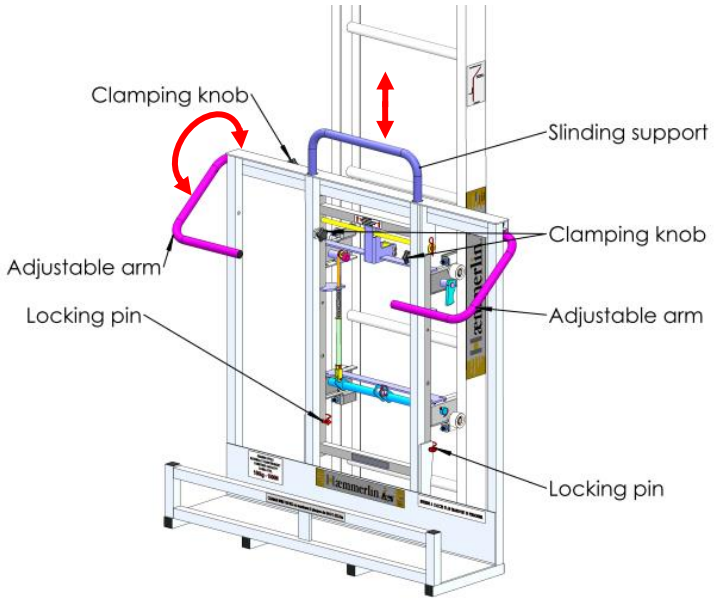
HORIZONTAL/VERTICAL SHEET CARRIER

The aluminium horizontal/vertical sheet carrier allows the transport of sheets, panels and joinery arranged horizontally or vertically. It can be used vertically and inclined.
The adjustable retaining arms ensure the lateral and frontal lock of the transported sheets, panels and joinery.
The sliding support supports sheets, panels and joinery when these exceed the height of the frame.
To adjust the position of the retaining arms, loosen the clamping knobs to release the arms, then position the arms so that they block the sheets, panels and joinery on the sides and the front, then retighten the knobs.
To adjust the position of the sliding support, loosen the clamping knobs to release the sliding support, then position the sliding support so that the sheets, panels and joinery are supported by it, then retighten the knobs.
Care should always been taken that the materials being transported are supported and properly secured so that no part of the load can fall off.

Installation:

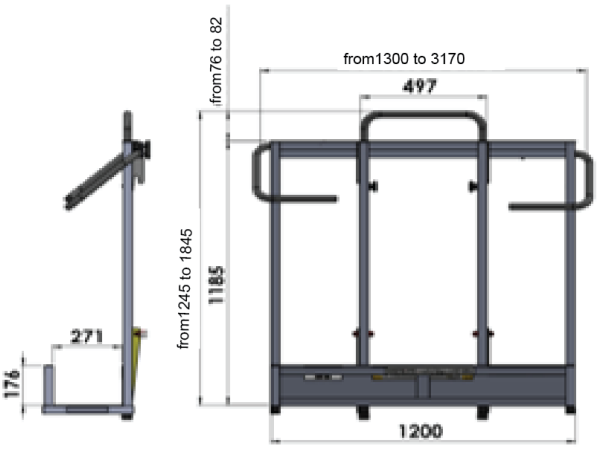
- Place the hooking shaft onto the top of the trolley and secure it with the pin.
- Attach the sheet carrier to the trolley (1-2) so that the hooks on the frame insert into the trolley's previously installed hooking shaft.
- Insert the locking pins (3) on both sides of the trolley to ensure that the hooks are secure and the sheet carrier cannot become unhooked and fall off.





MAX PAYLOAD
150kg

Dimensions of the horizontal sheet carrier



RENOVATION PLATFORM

The renovation platform can be used on inclined and vertical hoists.
It allows to transport materials of all kinds in a horizontal position for the fast supply of building sites, in front of a window, a terrace, a balcony, a mezzanine, a landing, a scaffolding or any other opening of building.
A tipping adjustment cylinder allows the platform to be positioned horizontally with a variable slope from 40 to 90° from the horizontal axis.
When loading the platform, when the mobile equipment is located at the bottom of the hoist, the loading height is about 1m above the ground.
This removes the need for the operator to bend over to place the load on the platform.
Thanks to the horizontal position of the platform, it is particularly easy to unload, as the operator pulls the transported items into the building without having to bend over to pick up the load.
It is therefore the ideal solution for all interior and exterior renovation jobs.
Thanks to its compactness and light weight (aluminium structure), the renovation platform is very easy and quick to install on the standard Maxial trolley. Its installation does not require any tools.
The side and rear panels can be opened for loading and unloading. Thanks to the sliding support arms, the side panels can also be used in the horizontal position for the transport of long and bulky items. The side panels and the fixed wall are equipped with handles that allow the transported items to be strapped down if necessary. The opening rear side and the fixed front side are equipped with removable extensions for the transport of very bulky items.
Care should always be taken to properly secure the materials being transported so that no part of the load can fall off.
Attention, the renovation platform is not compatible with a knee joint!

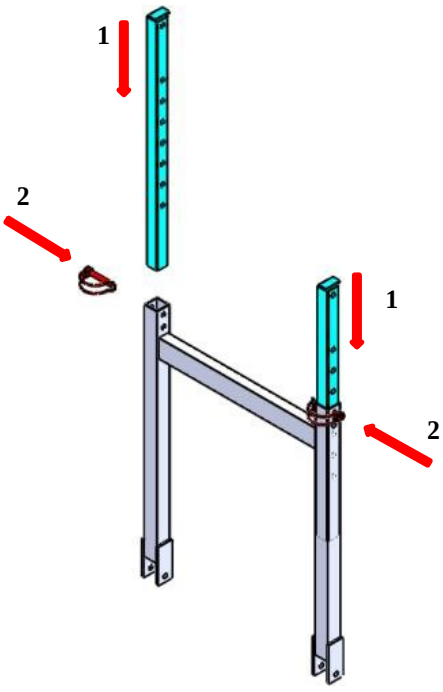
INSTALLATION

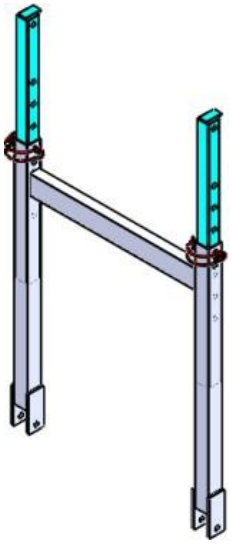
We also remind you that during the assembly and disassembly operations, it is mandatory to wear protective gloves and it strongly recommended to wear them throughout the duration of the work.
It is mandatory to wear a helmet and safety shoes for all persons present on the site, whether or not they are involved in assembly or disassembly operations.
The work area around the plant must be kept clean and the danger zone must be physically marked off.

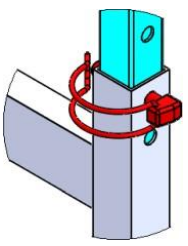
PREPARATION OF THE INCLINATION ADJUSTMENT CYLINDER OF THE RENOVATION PLATFORM (fig.1):

- Insert the slides into the cylinder.
- Choose the position of the holes of the slides in relation to the cylinder, so that the renovation platform can be positioned horizontally.
- Insert the shaft simultaneously through the cylinder and the slides.
- Lock the shaft with the pin.

The complete cylinder is ready for use (fig.2).



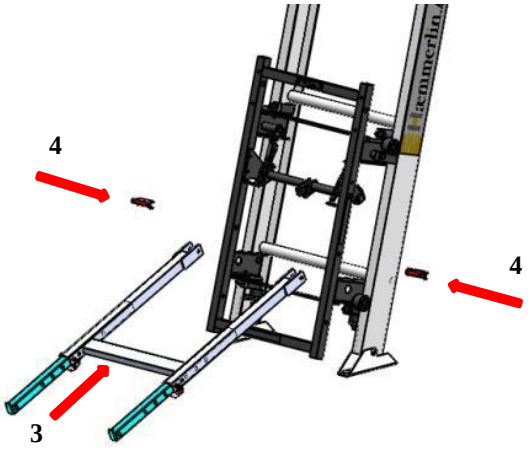


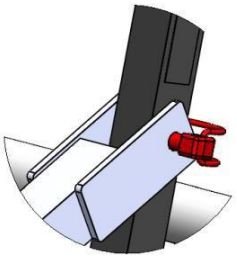


Locking details

Setting up the tilt cylinder on the standard carriage:

- Bring the tilt cylinder against the carriage so that the stacking lugs face the holes on the bottom of the carriage (3).
- Then engage the locking pins simultaneously through the tilt cylinder and the trolley (4).

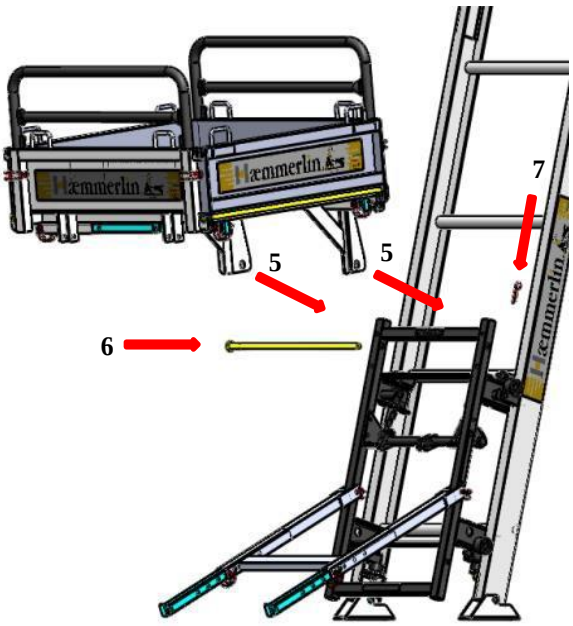


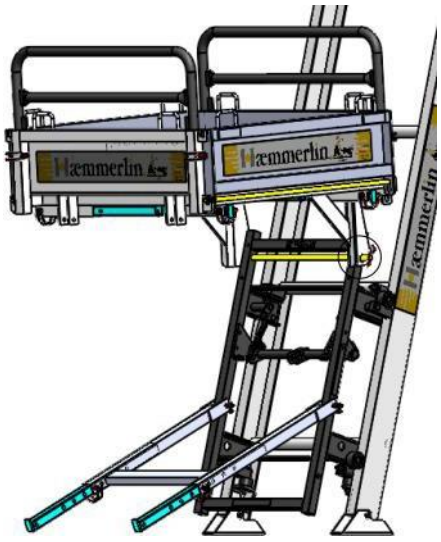


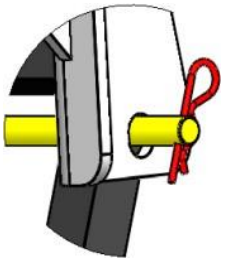
Locking details

Hooking the platform on the trolley:

- Carry out this operation with at least 2 people.
- Bring the tray against the trolley so that the hooking brackets face the holes on the top of the trolley (5). Carry out this operation with at least 2 people.
- Engage the hooking pin simultaneously through the hooking brackets of the platform and the carriage (6), without releasing the tray.
- Then use the pin to lock the locking pin (7).



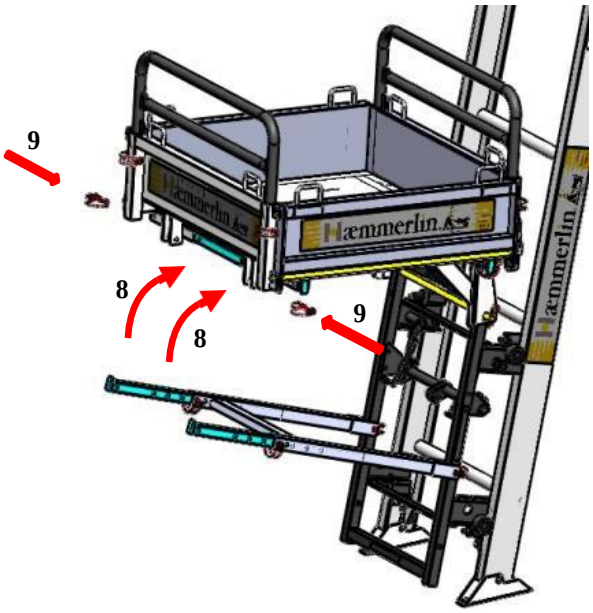


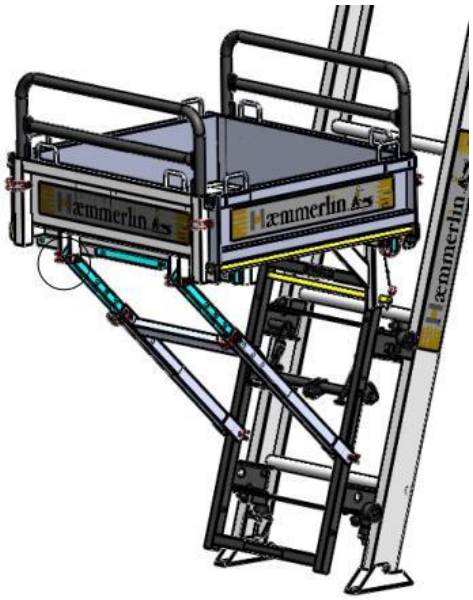


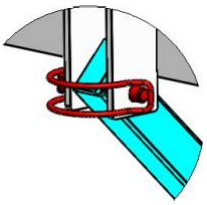
Locking details

Connection between the tilt cylinder and the platform:

- Carry out this operation with at least 2 people.
- The tilt cylinder and the platform are pre-assembled on the trolley.
- Hold the table top in an upright or horizontal position, then raise the tilt cylinder so that the ends of the rails can be engaged between the lugs on the top of the platform (8).
- Then engage the locking pins simultaneously through the stacking lugs of the platform and the ends of the tilt cylinder rails (9).



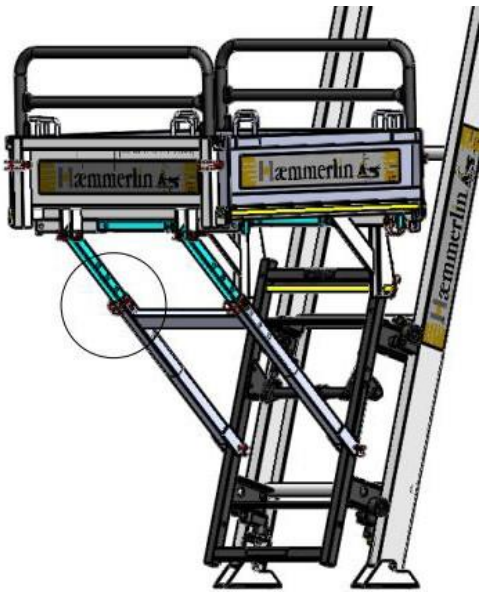


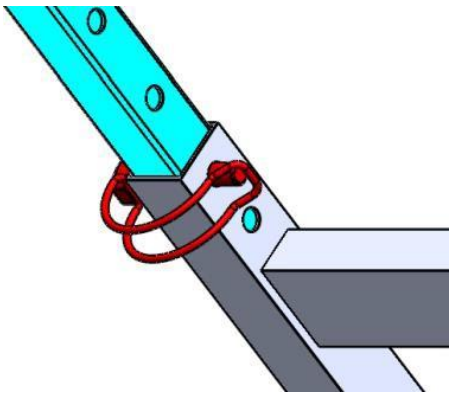


Locking details

If necessary, fine-tune the tilt of the platform so that it is as close to horizontal as possible:

- Choose the position of the holes of the slides in relation to the cylinder.
- Then engage the locking pins simultaneously through the cylinder and the slides.





The renovation platform is then ready for use.

USE OF THE RENOVATION PLATFORM

Attention, the renovation platform is not compatible with a bend section!

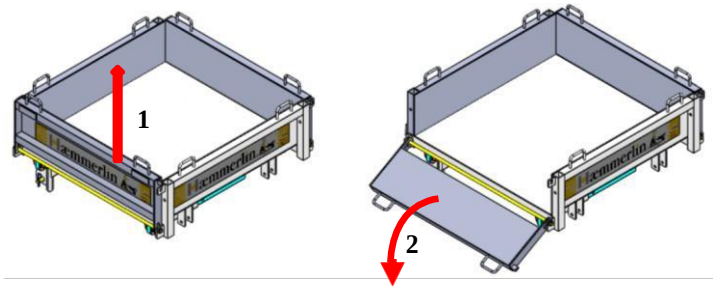
The renovation platform is highly efficient due to its many features and can be used on both sloping and vertical hoists.

Open side panels for easy loading:

- Lift the side panel with the handles (1) to release the lock, then swing it out (2).

To close the side panels, proceed in reverse order:

- Raise and lift the panels simultaneously, then lower it to lock in the lock.
- The side panels must remain closed when the platform is being raised or lowered!

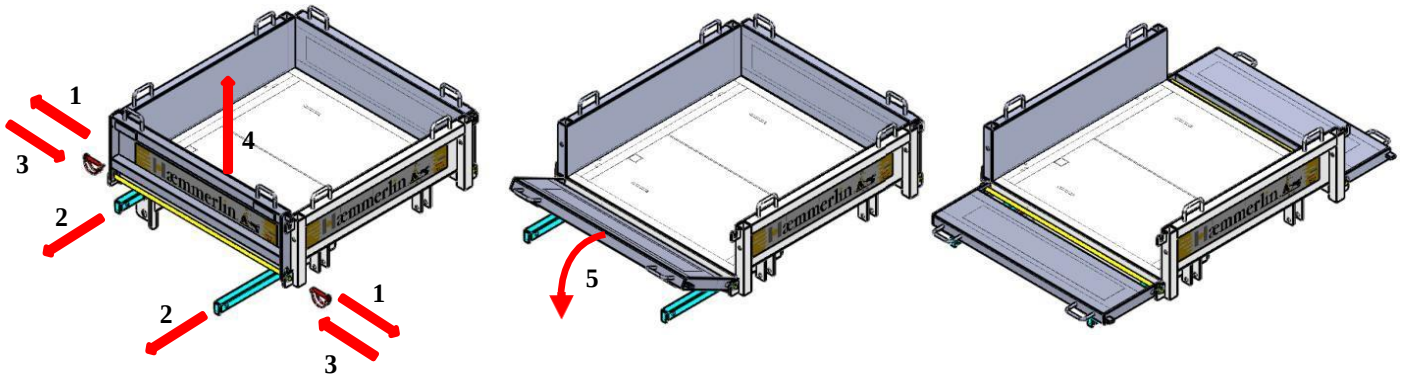


Horizontal opening of the side panels to increase the working area:

- Remove the locking pins from the sliding support arms (1)
- Deploy the sliding support arms (2).
- Replace the locking pins to secure the sliding support arms (3).
- With the sliding support arms in place and locked, lift the side panel with the handles to release the lock (4), then swing it out (5).
- Proceed in the same way for the 2nd side panel.

To close the side panels, proceed in reverse order:

- Raise and lift the panels simultaneously, then lower it to lock in the lock.
- Release, then retract the slides under the tray and secure them with the locking pins.



When the platform is being raised or lowered, the side panels may remain open provided that the support arms are deployed and the materials being transported are properly secured so that no part of the load can fall out

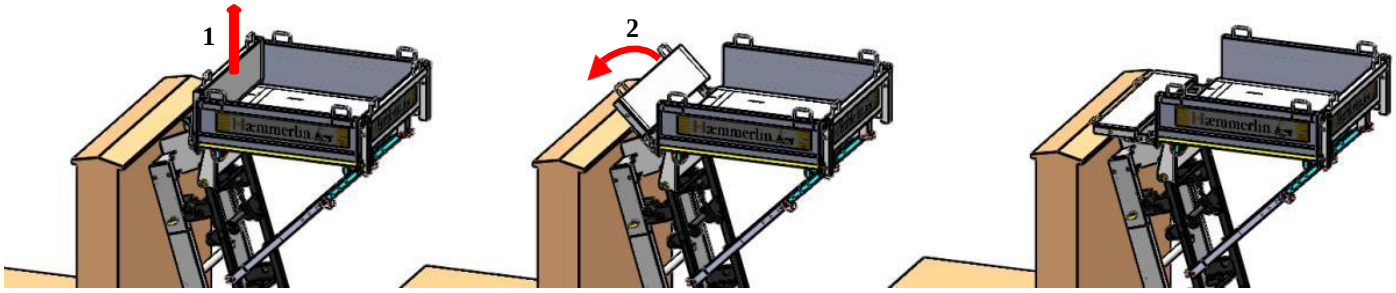
Opening of the rear panel for easy unloading:

- Lift the side panel with the handles (1) to release the lock, then swing it out (2).

When the rear panel is open (fig.20), it can rest directly on the window sill or balcony. This makes the platform very accessible for unloading as you simply slide the elements back towards you.

To close the rear panel, proceed in reverse order:

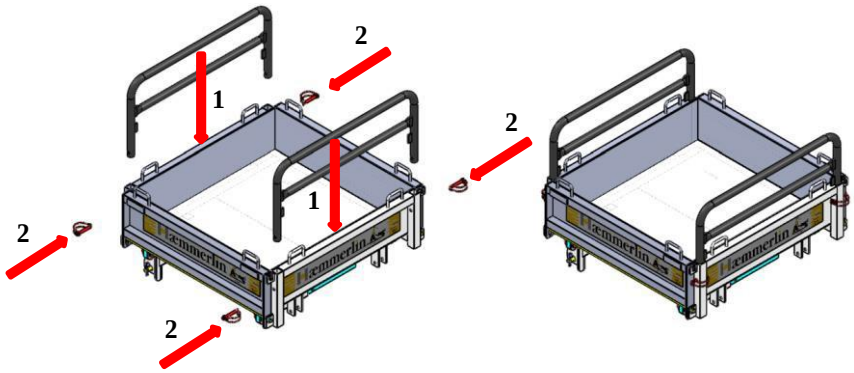
- Raise and lift the panels simultaneously, then lower it to lock in the lock.



When raising and lowering the platform, the rear panel must always remain closed!

Installation of removable extensions for the transport of very bulky items:

- Insert the extensions into the recesses provided on the fixed backrest and rear panel (1).
- Then block the extensions using the locking pins (2).

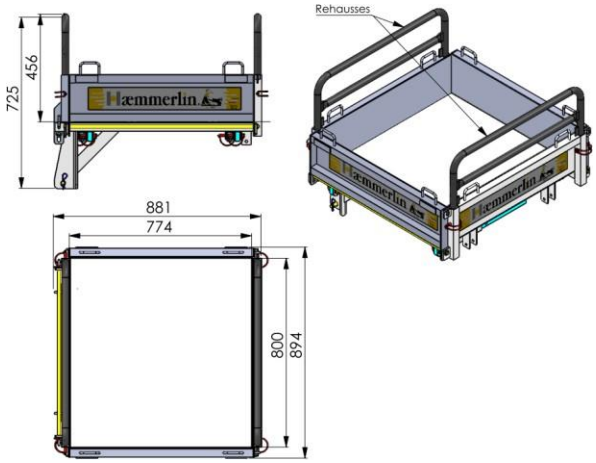


To remove the extensions, proceed in reverse order:

- Unlock the extensions by removing the locking pins.
- Then remove the extensions.

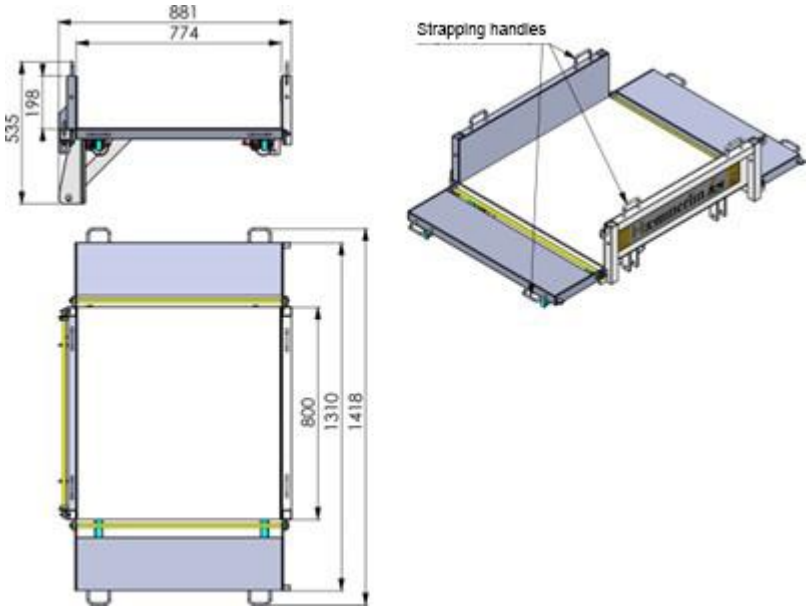
The extensions are also used to secure bulky items that protrude from the platform. They can remain in place during ascent, descent, loading and unloading.

Dimensions of the renovation platform with closed panels:



MAX PAYLOAD
150kg

Dimensions of the renovation platform with open panels:



INCLINED SHORING

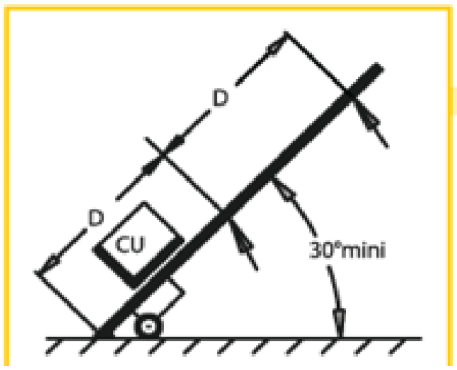
⚠ For safe installation, use the shoring elements for inclined work (see the shoring accessories available on pages 9 and in the sales documentation and on our website www.haemmerlin.com).
The installation of the hoist ends with its attachment to the building or scaffolding structure depending on the configuration of the site.

GENERAL RULES FOR INCLINED SHORING:

- Minimum slope of the ladder ≥ 30° from the horizontal axis.
- The ladder can be supported directly on a wall, windowsill, terrace, roof, etc.
- The hinged base ladder shoes must always be anchored to the ground using dowels or fixing plugs adapted to the type of support. The dowels or fixing plugs must have a minimum Ø of 12 mm and pass through the holes provided for this purpose in the hinged base shoes. The anchoring to the ground must be solid and durable.
- The knee joint must always be supported and secured to the building or scaffold using a rope, strap, chain, bridle, etc.
- The headboard must always be supported and secured to the building or scaffold using a rope, strap, chain, bridle, etc.
- The ladder must be shored up at least every:
    - 5.5 m for a payload of 175kg
    - 5 m for a payload of 200kg
    - 4 m for a payload of 250kg

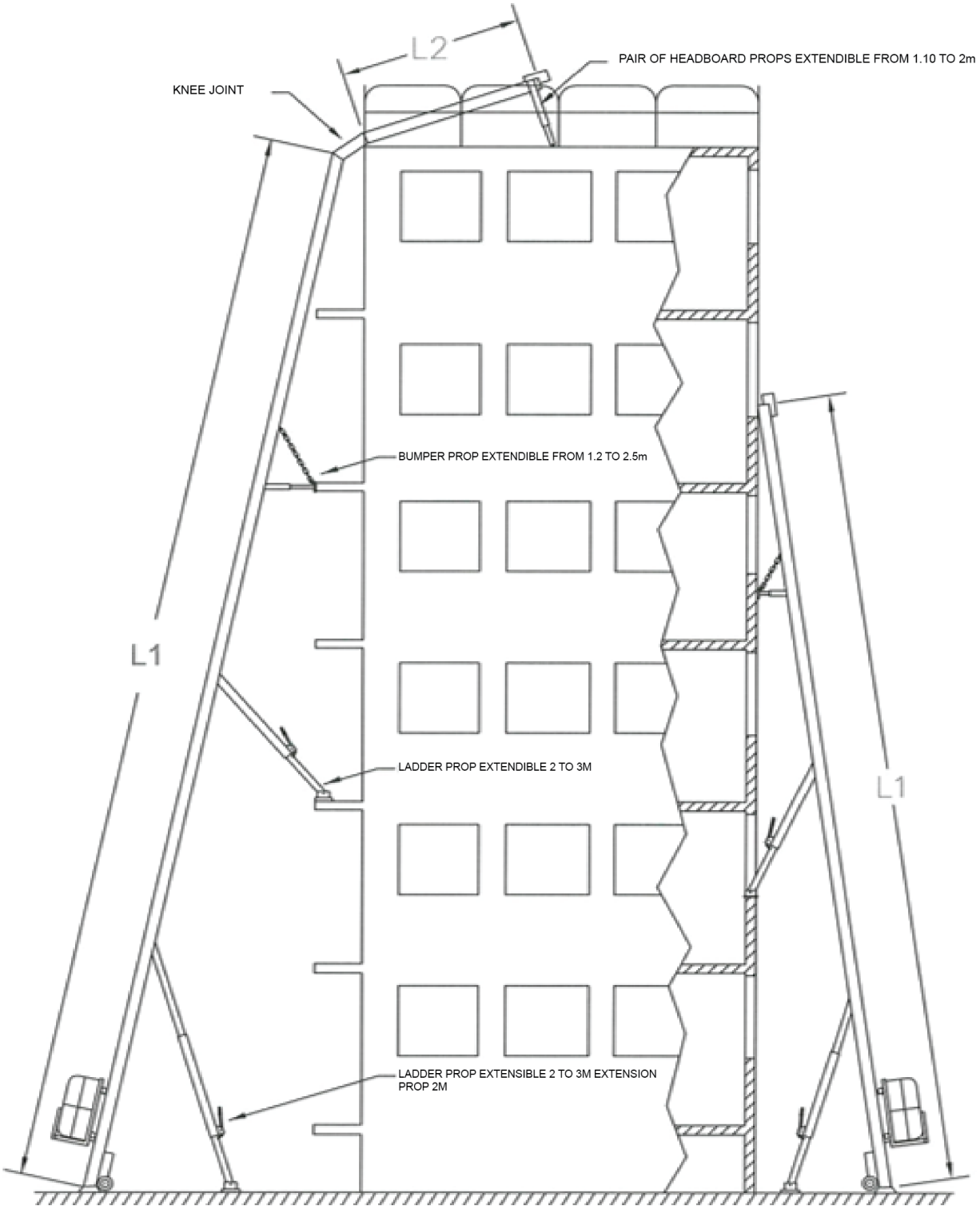
  using the 2 to 3 m base prop, the 2m extension prop, the bumper props and the trestles.

In all cases, refer to the shoring chart below:



Distance D between 2 supports (m)						
8.5	7.5	6.5	6	5.5	5	4
80	100	125	150	175	200	250
Payload PL (kg)						

EXAMPLES OF INCLINED INSTALLATIONS OF THE HOIST ON THE FAÇADE OF A BUILDING



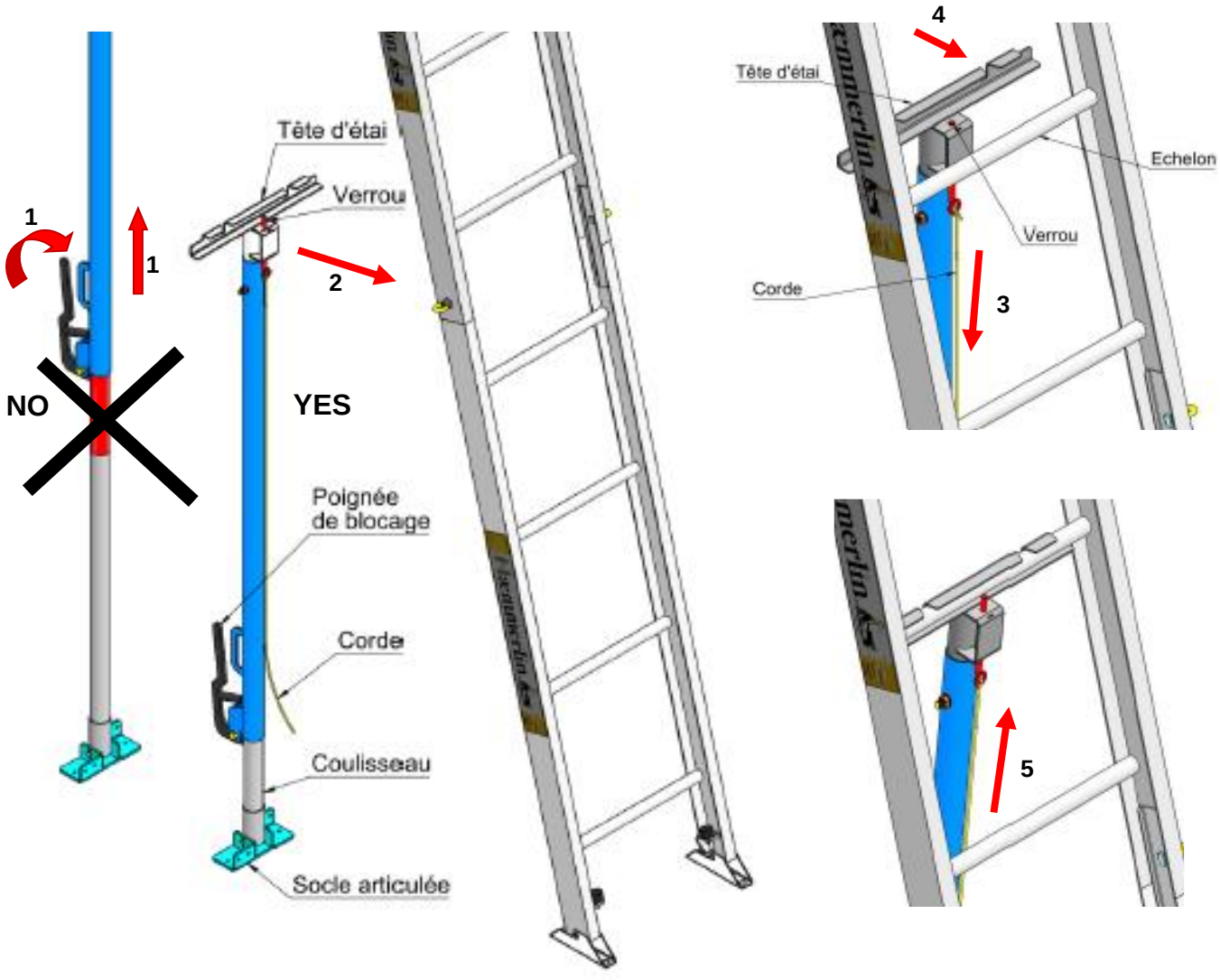
INSTALLATION AND USE OF SHORING ACCESSORIES

BASE LADDER PROP 2 TO 3m

The base ladder prevents the ladder structure from bowing when the mobile equipment is loaded. It can be attached to any rung of the ladder structure. The hinged base crossmember can be supported on the floor, on a window sill or on a balcony floor. It must be always anchored to the ground using dowels or fixing plugs adapted to the type of support. The dowels or fixing plugs must have a minimum Ø of 12 mm and pass through the holes provided for this purpose in the hinged base crossmember. The anchoring to the ground must be solid and durable.
The base ladder prop is extendible from 2 to 3m.

Installation:

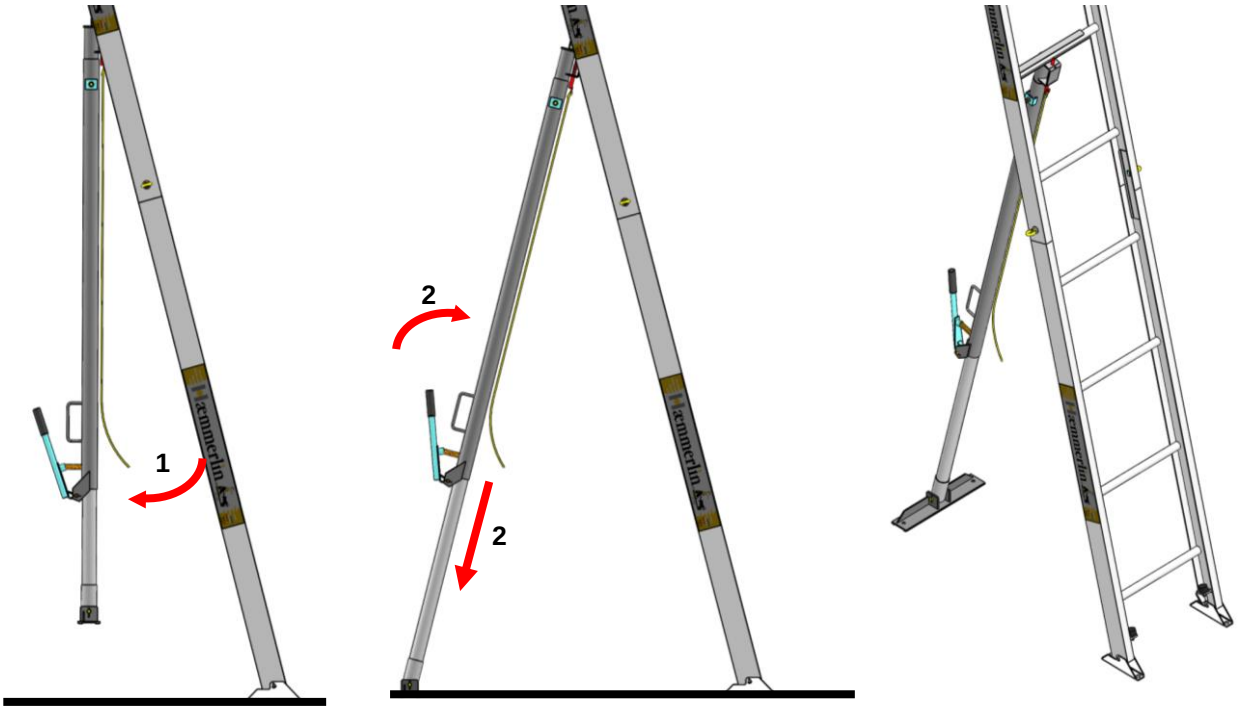
- Stretch the base ladder prop 2 and 3m by pressing the locking handle (1) until the headboard prop reaches the vicinity of the ladder to which it will be attached. Be careful not to stretch the base ladder prop more than 1 metre, as the red area of the rung must not be visible under any circumstances.
- Bring the base ladder prop in line with the previously installed ladder structure (2).
- Open the lock by pulling on the rope (3) and then hook the headboard prop onto the rung (4). Lock the hook by releasing the rope.



Supporting the base ladder prop :

- Incline the base ladder prop for greater efficiency (1).
- Stretch the base ladder prop 2 and 3m by pressing the locking handle (2) until the hinged base crossmember is stable on the ground

- Anchor the hinged base crossmember to the ground by means of dowels or fixing plugs with a minimum diameter of 12 mm passing through the holes provided. The anchoring to the ground must be solid and durable.



LADDER PROP 2m

The 2m extension prop is used to extend the base ladder prop to allow it to hook onto higher rungs. The base ladder prop is extendible from 4 to 5m.

Installation:

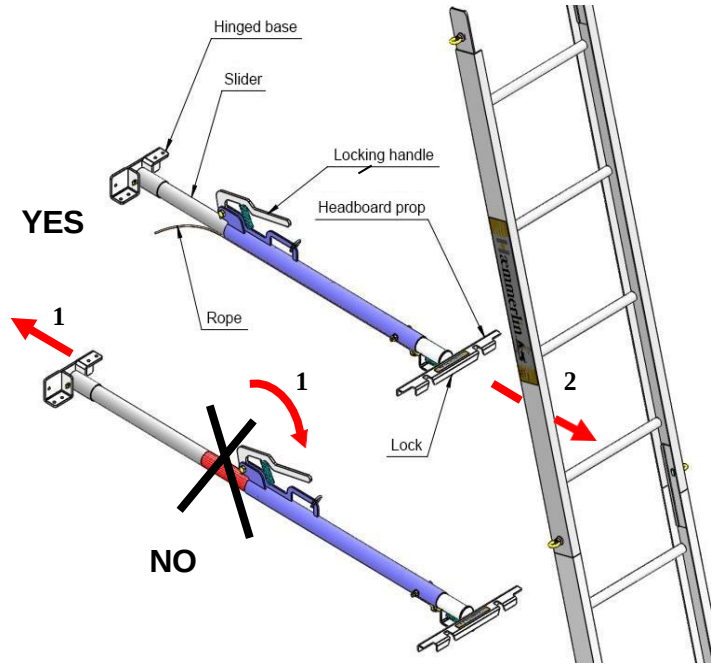
- Remove the pole prop from the base ladder prop by unscrewing the screws and clamping bolt.
- Assemble the 2m extension prop onto the pole of the base ladder prop (1) and secure with the flanges, screws and clamping bolt (2).
- Assemble the headboard prop on the 2m extension prop (3) and secure with the flanges, screws and clamping bolt (4).

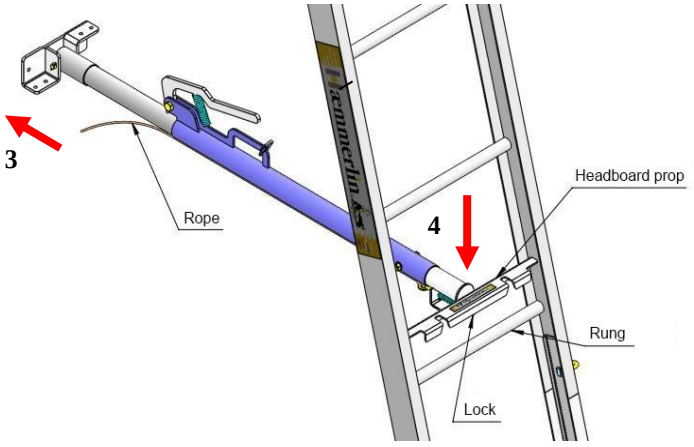
BUMPER PROP 1.33 TO 1.87m

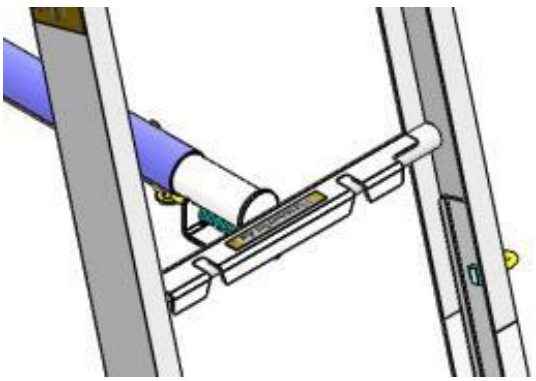
The bumper prop prevents the ladder structure from bowing when the mobile equipment is loaded. The bumper prop is used when the support point is too high to use a base bumper prop. It can be attached to any rung of the ladder structure. The hinged base of the bumper prop can be supported against a facade, wall, slab or be clamped against scaffolding. The support against the façade of the building or the scaffolding must be solid and durable. The installation can be done from a window opening, a balcony or from scaffolding. The persons installing the bumper prop must wear a safety harness with a fall arrest system, anchored to a suitable part of the building or the structure. If the installation cannot be done from a window opening, a balcony or from scaffolding, an access platform must be used to install the bumper props. The hinged base must be always anchored to the ground using dowels or fixing plugs adapted to the type of support. The dowels or fixing plugs must have a minimum Ø of 12 mm and pass through the holes provided for this purpose in the hinged base. The anchoring to the building must be solid and durable.
The adjustable bumper prop is extendable from 1.33 to 1.87m.

Installation:

- Extend the bumper prop by pressing the locking handle (1) until the headboard prop reaches the vicinity of the ladder to which it will be attached. Be careful not to stretch the bumper prop more than 0.54 metre, because the red area of the slider must not be visible under any circumstances.
- Bring the bumper prop into line with the previously installed ladder frame (2).
- Open the lock by pulling on the rope (3) and then hook the headboard prop onto the rung (4). Lock the hook by releasing the rope.

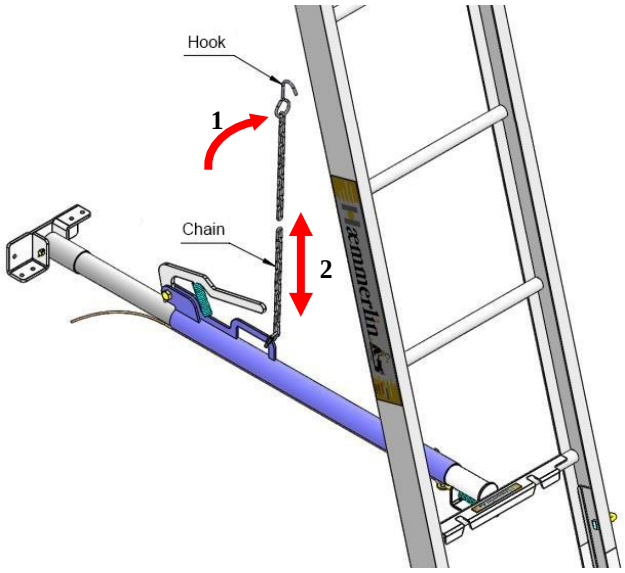


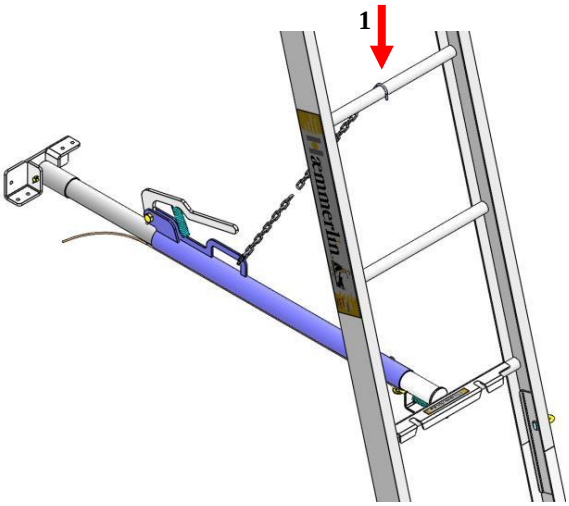




Hooking the bumper prop:

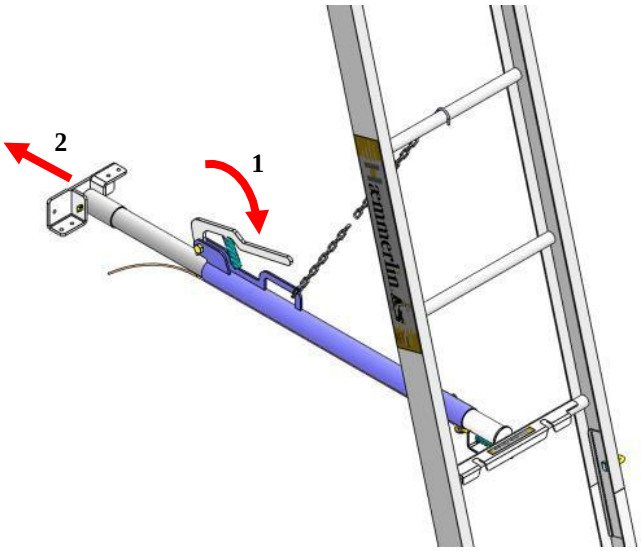
- Hook the bumper prop on an upper rung of the ladder using the chains and hooks (1) supplied with the bumper prop.
- Adjust the position of the bumper prop by adjusting the chain and quick link so that it is as close to horizontal as possible to make the bumper more efficient (2).

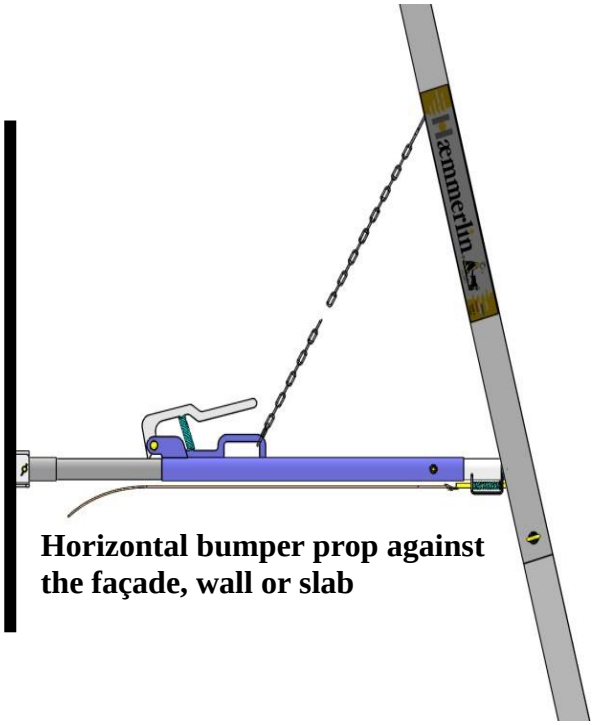




Hooking the bumper prop:

- Then extend the bumper prop by pressing the locking handle (1) until the hinged base comes to rest against the front, wall or slab (2).
- Anchor the hinged base crossmember to the ground using dowels or fixing plugs with a minimum diameter of 12 mm passing through the holes provided. The anchoring to the ground must be solid and durable.





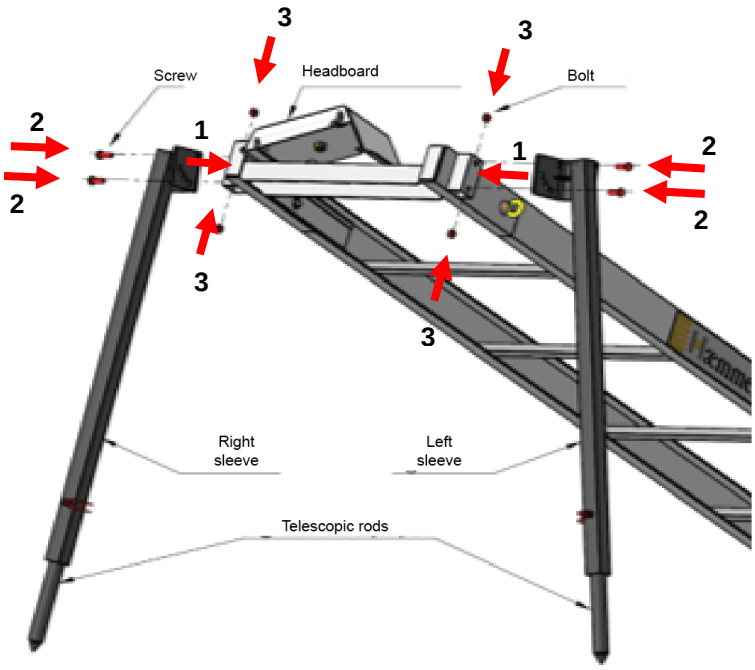
Horizontal bumper prop against the façade, wall or slab

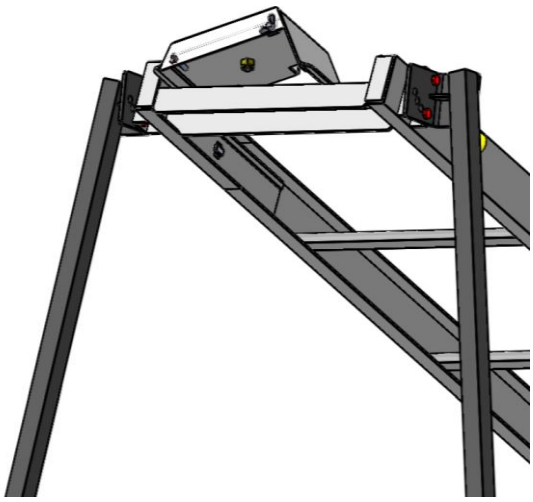
PAIR OF HEADBOARD PROPS 1.1 TO 2m

The pair of telescopic headboard props ensures that the end of the ladder is supported so that it does not overhang, regardless of the inclination of the ladder on a terrace or inside a building.
The pair of telescopic headboard props can be extended from 1.5 to 2.5 m.

Installation:

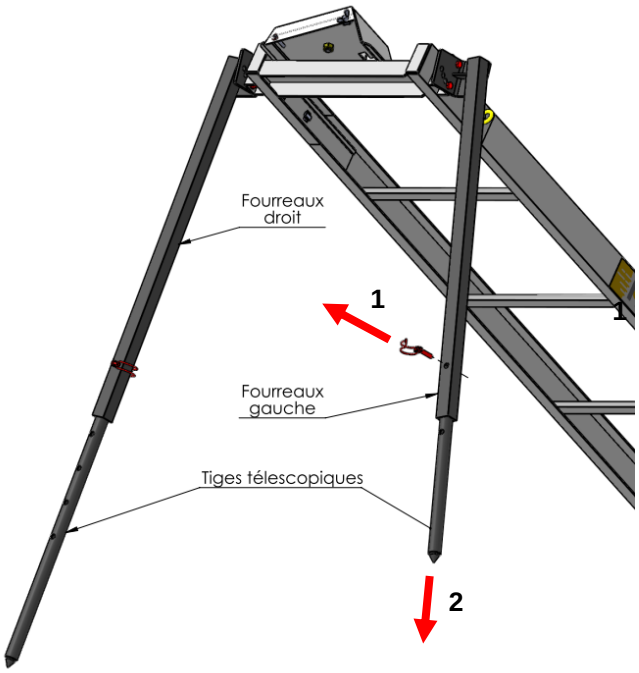
- Bring the right sleeve to the headboard (1).
- Insert the screws simultaneously through the holes in the sleeve and the headboard (2) and secure with the bolts (3).
- Proceed in the same way for the left sleeve





Supporting the pair of headboard props:

- Unlock the telescopic rods from the sleeves by removing the locking pins (1)
- Extend the telescopic rods until they reach the ground (2)
- Lock the telescopic rods by replacing the locking pins in the most appropriate hole of the sleeve.
- If the ground is loose, insert a board between the tip of the telescopic rod and the ground.

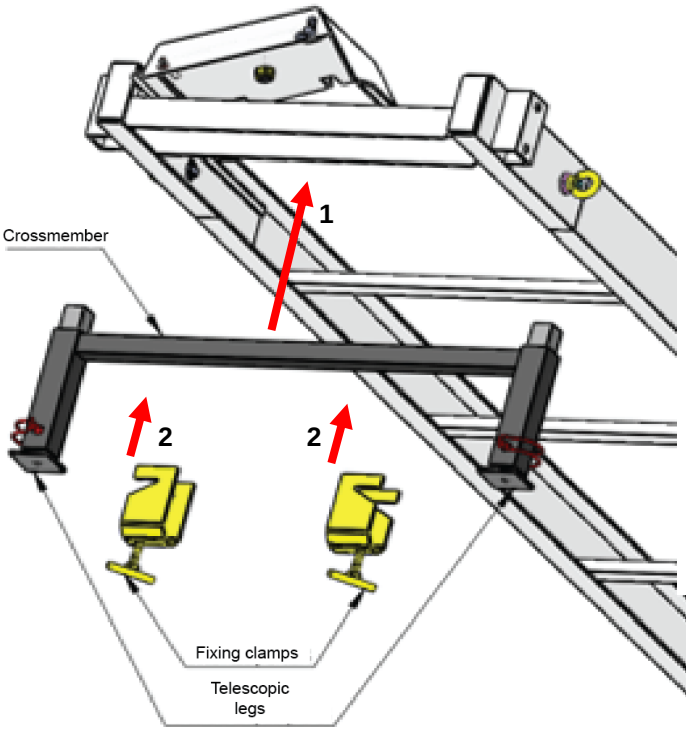


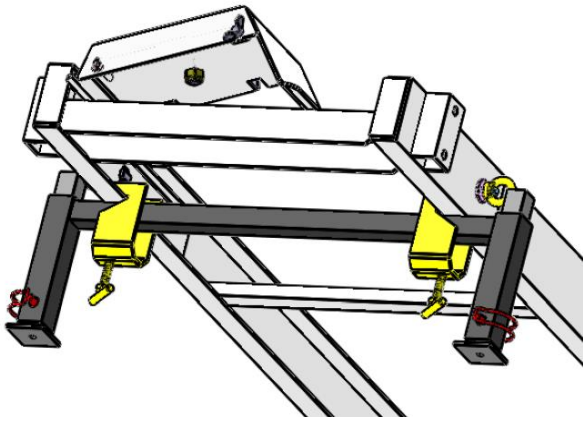
COMPLETE TRESTLE WITH 2 FIXING CLAMPS

The trestle is used to support the ladder or the knee joint when it cannot rest directly on the roof or a window sill.
The trestle is attached to the underside of the ladder structure or knee joint by means of the 2 fixing clamps provided.
The adjustable legs allow the trestle to be extended from 0.21 to 0.35m.

Installation of the trestle:

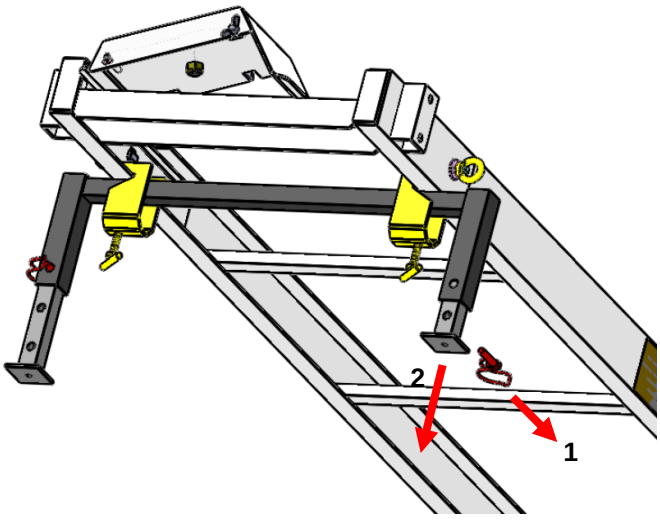
- Place the trestle under the ladder frame so that the trestle crossmember is centred and supported under the ladder profile (1).
- Secure the trestle to the ladder structure with two fixing clamps (2).

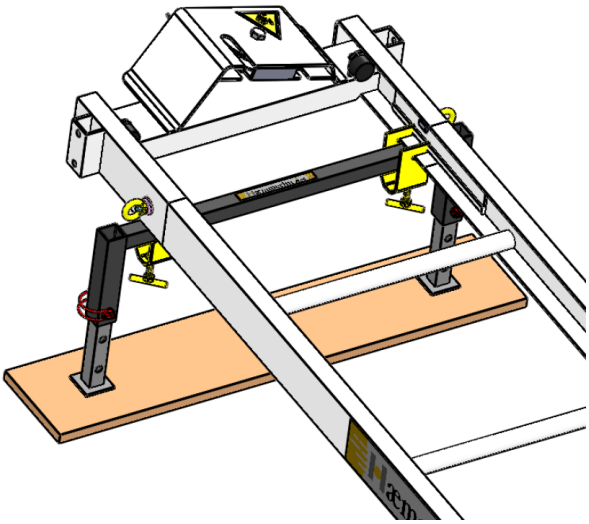




Supporting the trestle:

- Unlock the telescopic legs by removing the locking pins (1)
- Extend the telescopic legs until they fit (2)
- Lock the telescopic legs by replacing the locking pins in the most appropriate hole.
- If necessary, insert a board between the legs of the trestle and the building structure.





VERTICAL ANCHORING

⚠ For safe installation, use the anchoring elements for vertical work (see the anchoring accessories available on pages 9 and 10 and in the sales documentation and on our website www.haemmerlin.com).
The installation of the hoist ends with its attachment to the building or scaffolding structure depending on the configuration of the site.

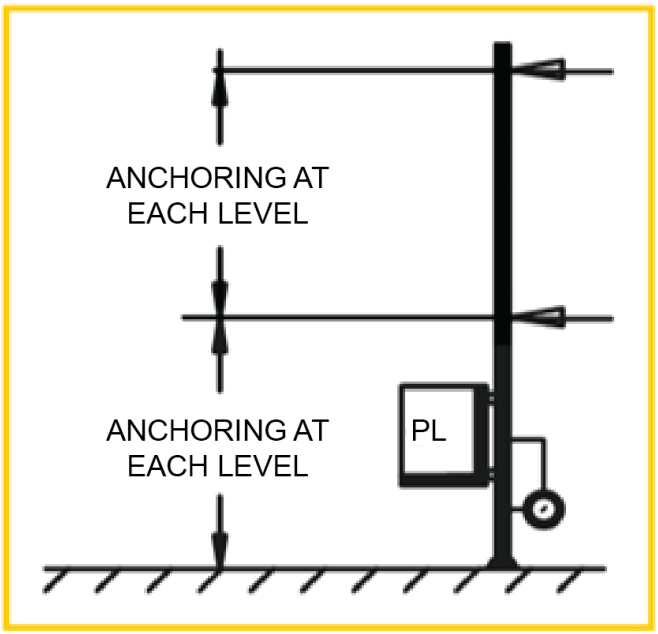
GENERAL RULES FOR VERTICAL ANCHORING:

- A hoist is said to be vertical when the angle that the ladder structure describes with the vertical axis is ≤3°
- The hinged base ladder shoes must always be anchored to the ground using dowels or fixing plugs adapted to the type of support. The dowels or fixing plugs must have a minimum Ø of 12 mm and pass through the holes provided for this purpose in the hinged base shoes. The anchoring to the ground must be solid and durable.
- Anchoring on each floor of the building and at the top end of the ladder using:
    - enclosure clamp + 2 fixing clamps
    - balcony clamp + 2 fixing clamps
    - mooring cylinder + 1 tube Ø49x3mm + 1 orthogonal coupler + 2 VE fixing clamps

  The ladder can be supported directly against the square tubes of the clamps.
- Anchoring on each floor of the scaffolding and at the top end of the ladder using:
    - 1 tube Ø49x3mm
    - 2 orthogonal couplers
    - 2 VE fixing clamps

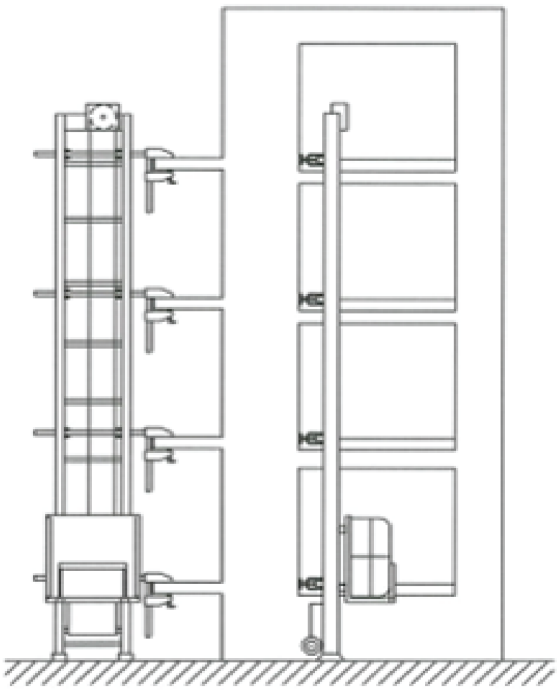
  The ladder can be supported directly against the round tubes of the scaffolding.

In all cases, refer to the shoring chart below.

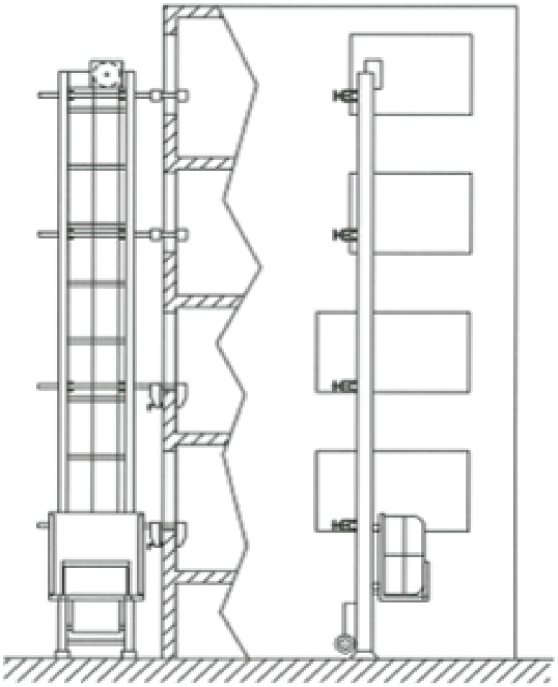


EXAMPLES OF VERTICAL INSTALLATIONS OF THE HOIST ON THE FAÇADE OF A BUILDING

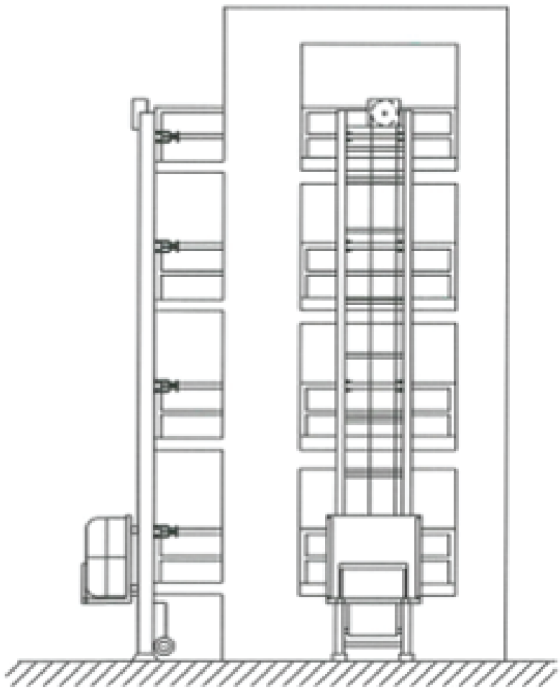
LADDER PERPENDICULAR TO THE BUILDING
Anchoring on the floor of the balcony or terrace, using a balcony clamp



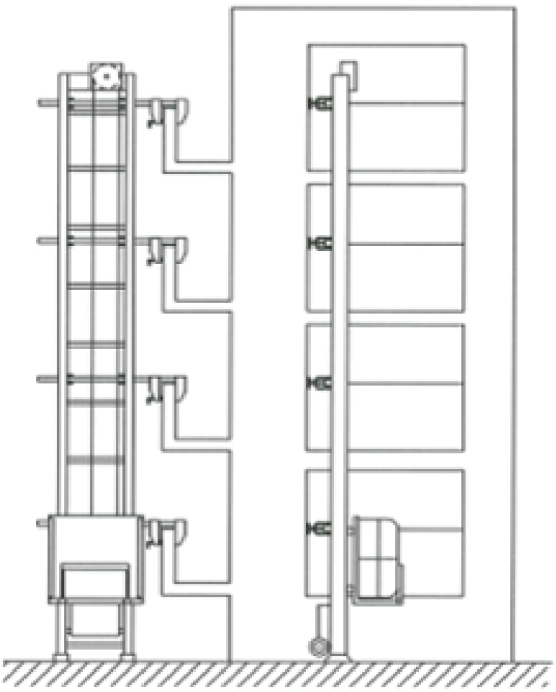
LADDER PERPENDICULAR TO THE BUILDING
Anchoring to the opening or the sill of a window using an enclosure clamp



LADDER PERPENDICULAR TO THE BUILDING
Ladder directly supported by the balcony ramp and anchored using fixing clamps



LADDER PERPENDICULAR TO THE BUILDING
Anchoring on the wall or the railing of the balcony using an enclosing clamp



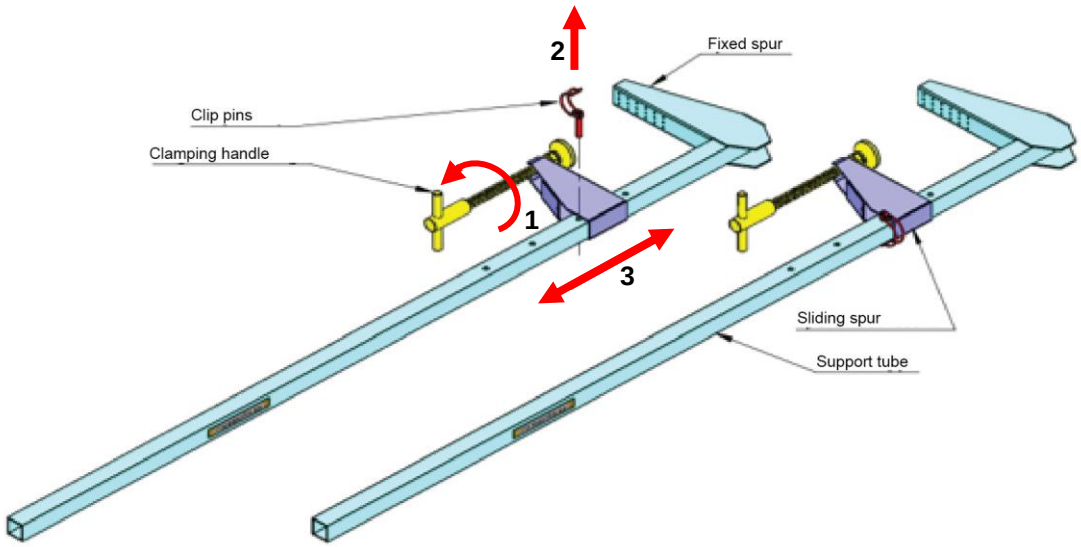
INSTALLATION AND USE OF ACCESSORIES FOR ANCHORING AGAINST THE FACADE OF A BUILDING

ENCLOSURE CLAMP

The enclosure clamp allows the ladder structure of the hoist to be positioned and locked perpendicular to the building façade in an opening of a window.

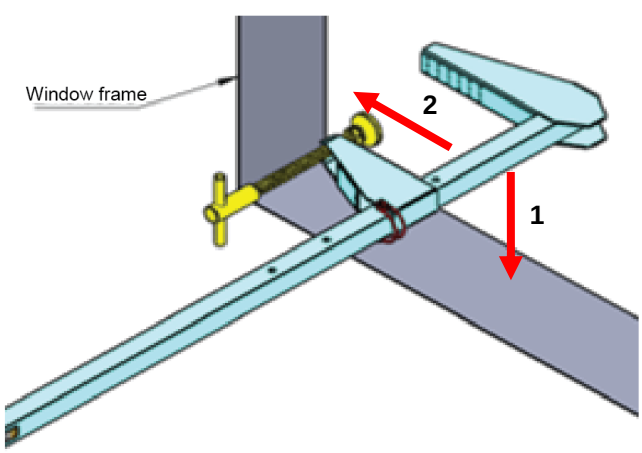
Adjusting the enclosure clamp:

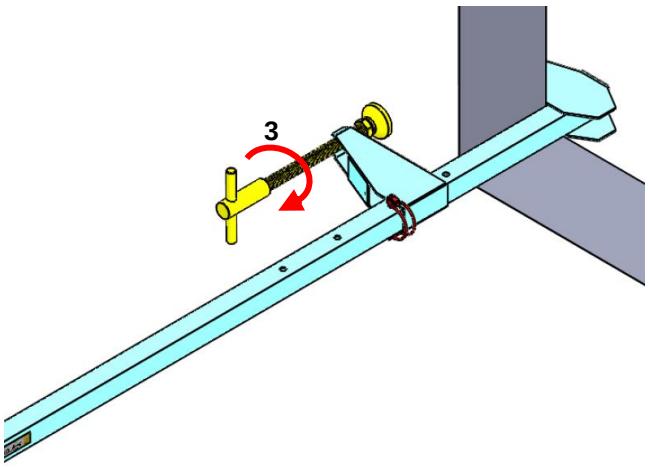
- Unscrew the clamping handle (1).
- Remove the clip pin to release the sliding spur (2).
- Adjust the position of the sliding spur on the rod so that the space between the base of the clamping handle and the fixed spur is slightly greater than the thickness of the wall of the enclosure where the closure clamp (3) will be installed.
- Replace the clip pin to lock the sliding spur.



Installation of the enclosure clamp:

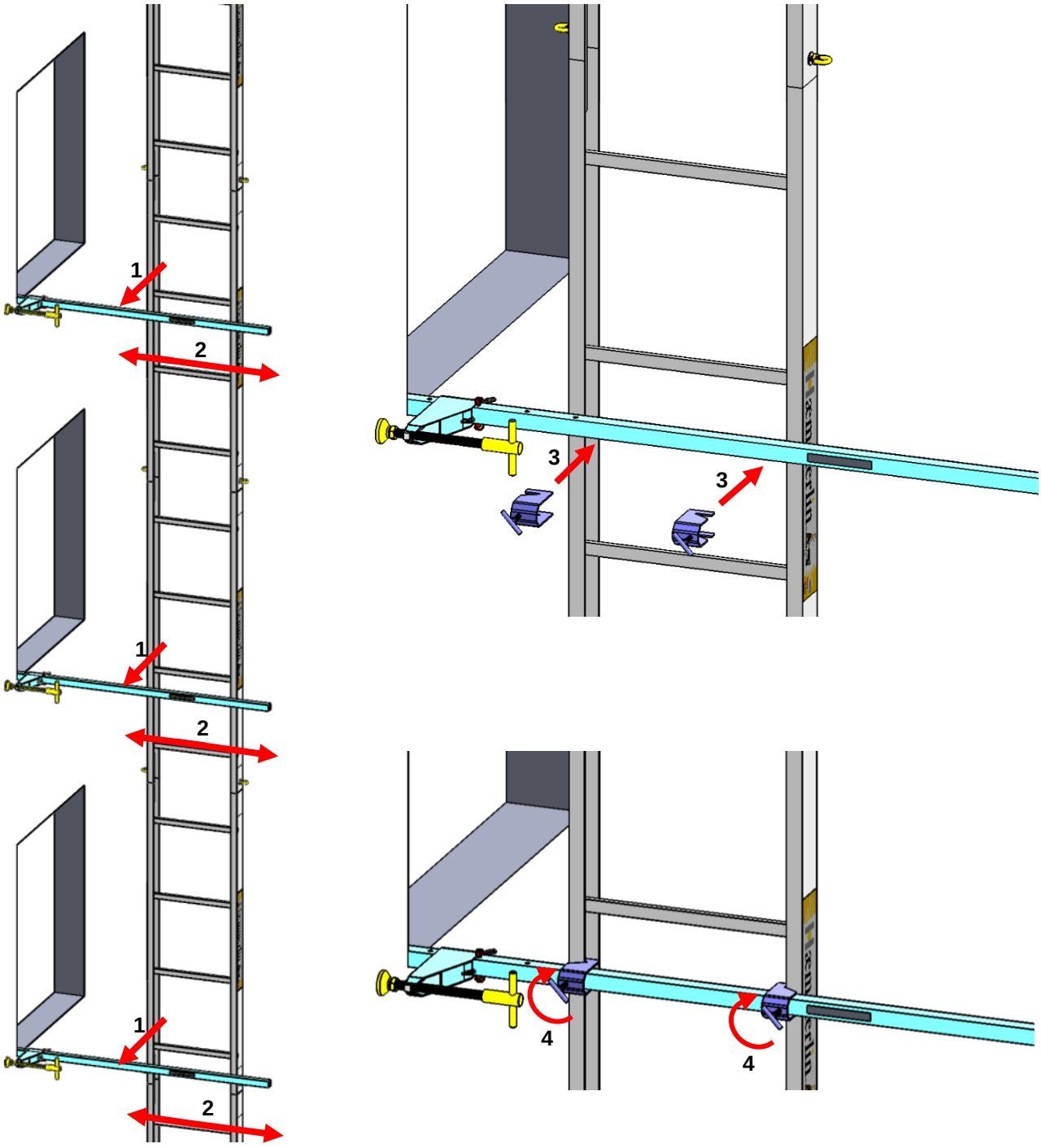
- Bring the enclosure clamp to the window frame (1).
- The support tube can rest on the apron wall of the window frame (1) and must be resting on the sill of the frame in order to have the same vertical alignment reference for the next clamps on the upper floors (2).
- Secure the enclosure clamp by turning the clamping handle with a properly shaped tube (3). The minimum tightening torque to be applied to the clamping handle is 50Nm.
- Proceed in the same way to install the other enclosure clamps on each floor.





Anchoring the ladder structure against the enclosure clamps:

- After the ladders have been slotted and locked together with the quick bolts, the ladder mat is pressed against the support tubes of the clamps previously installed on the various floors of the building (1).
- Position the ladder in relation to the façade, taking into account the accessory that will be used, in order to guarantee free passage for the mobile equipment (2).
- Stabilise the ladder mat against the support tubes of the clamps on each floor with 2 fixing clamps per enclosure clamp (3), then lock the assembly by tightening the fixing clamps (4).



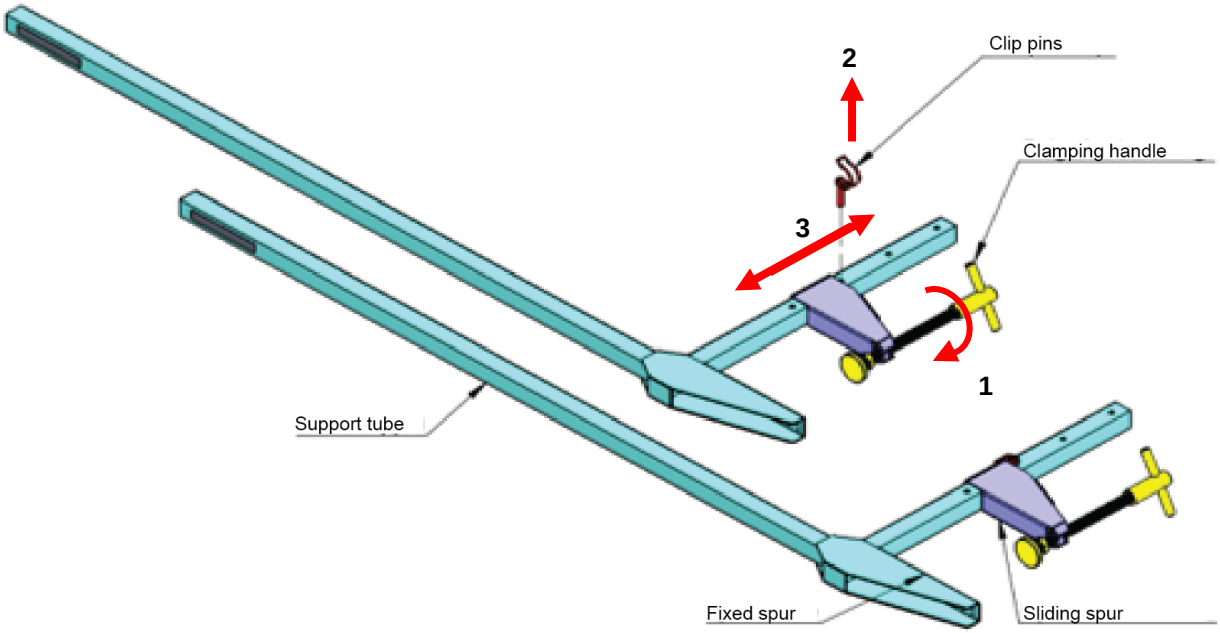
The risk of sliding must be compensated for by tightening the clamping handle as described above, but also by anchoring the fixed spur of the enclosure clamp with Ø8mm dowels or fixing plugs adapted to the type of support.

BALCONY CLAMP

The balcony clamp allows the ladder structure of the hoist to be positioned and locked perpendicular to the building façade on a balcony or a concrete floor.

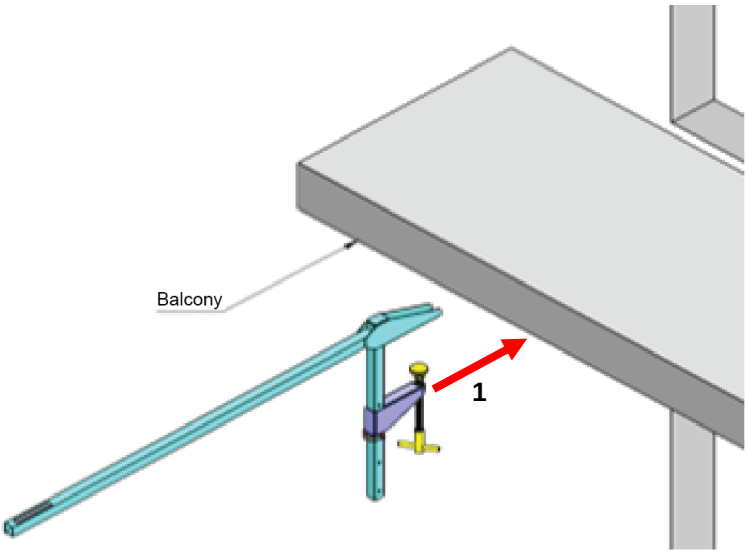
Adjusting the balcony clamp:

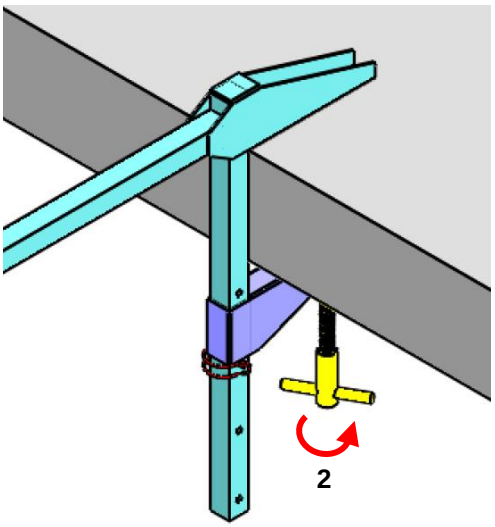
- Unscrew the clamping handle (1).
- Remove the clip pin to release the sliding spur (2).
- Adjust the position of the sliding spur on the rod so that the space between the base of the clamping handle and the fixed spur is slightly greater than the thickness of the balcony or the concrete floor where the balcony clamp (3) will be installed.
- Replace the clip pin to lock the sliding spur.



Installation of the balcony clamp:

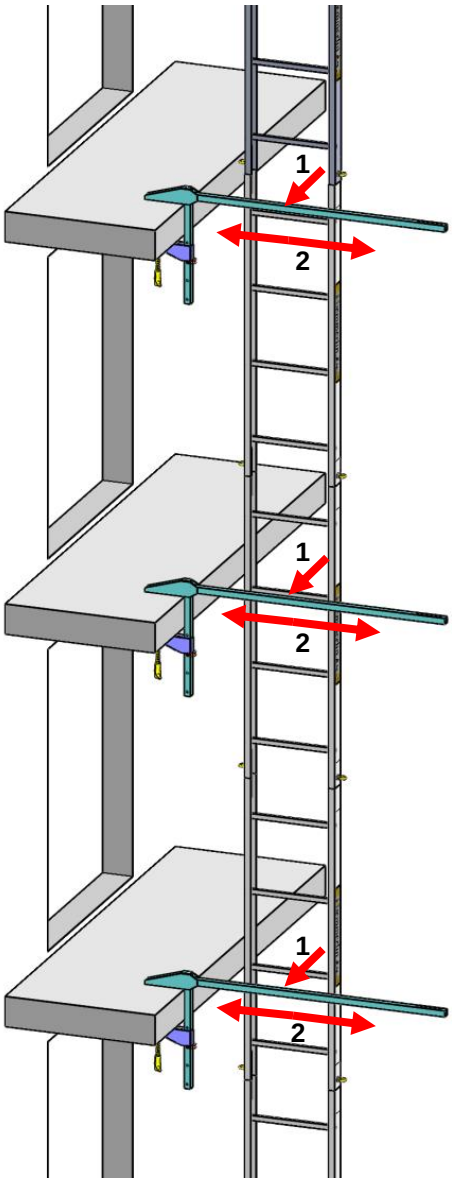
- Bring the balcony clamp to the level of the balcony or concrete floor (1).
- The vertical tube must be in contact with the edge of the balcony or the concrete floor.
- Secure the balcony clamp by turning the clamping handle with a properly shaped tube (2). The minimum tightening torque to be applied to the clamping handle is 50Nm.
- Proceed in the same way to install the other balcony clamps on each floor ensuring that all the following balcony clamps on the upper floors are perfectly aligned vertically.

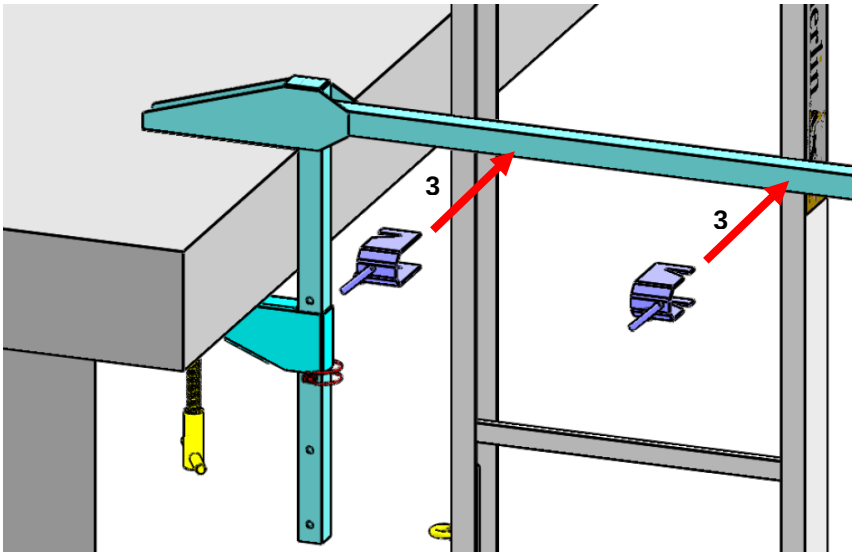


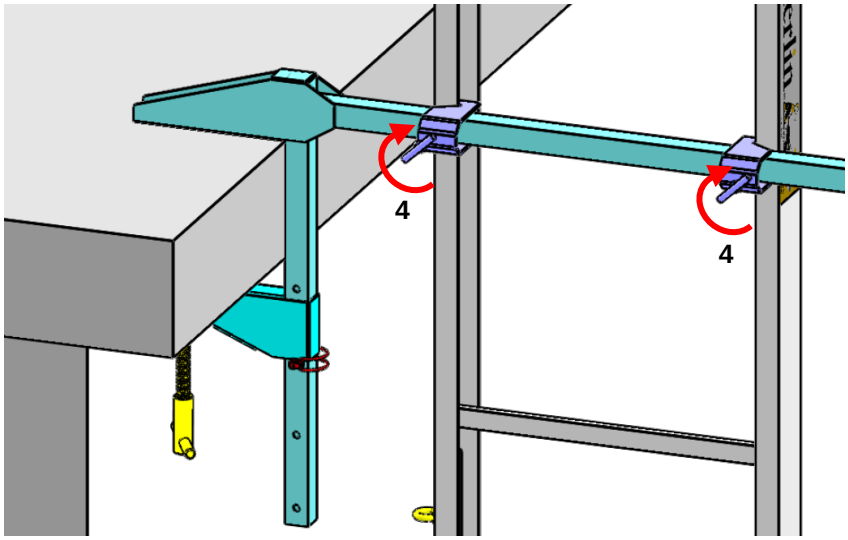


Anchoring the ladder structure against the balcony clamps:

- After the ladders have been slotted and locked together with the quick bolts, the ladder mat is pressed against the support tubes of the clamps previously installed on the various floors of the building (1).
- Position the ladder in relation to the balcony or concrete floor, taking into account the accessory that will be used, in order to guarantee free passage for the mobile equipment (2).
- Stabilise the ladder mat against the support tubes of the clamps on each floor with 2 fixing clamps per balcony clamp (3), then lock the assembly by tightening the fixing clamps (4).







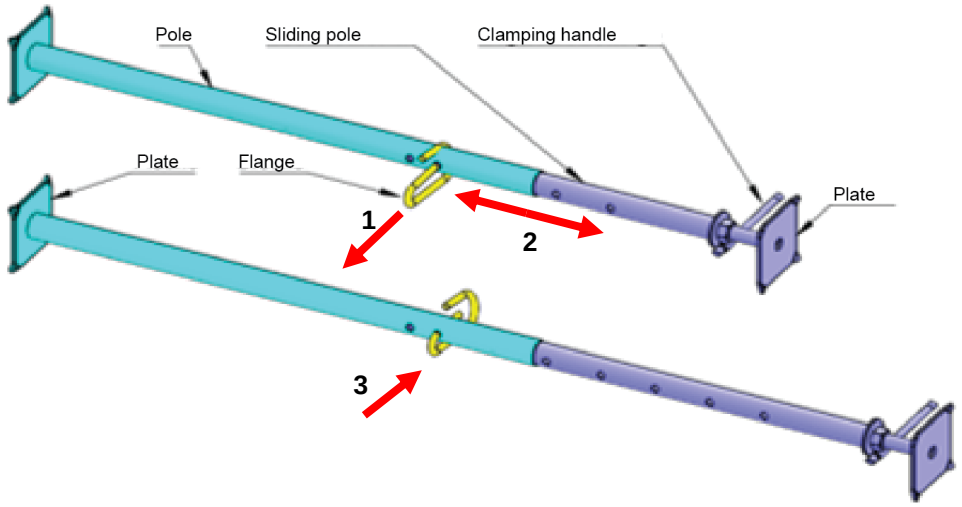
The risk of sliding must be compensated for by tightening the clamping handle as described above, but also by anchoring the fixed spur of the balcony clamp with Ø8mm dowels or fixing plugs adapted to the type of support.

WINDOW MOORING CYLINDERS 0.70 to 1m and 1 to 1.70m

The mooring cylinder allows the ladder structure of the hoist to be positioned and locked perpendicular to the building façade in an opening of a window. It is also used to position and lock the headboard of the hoist in the opening of a window.

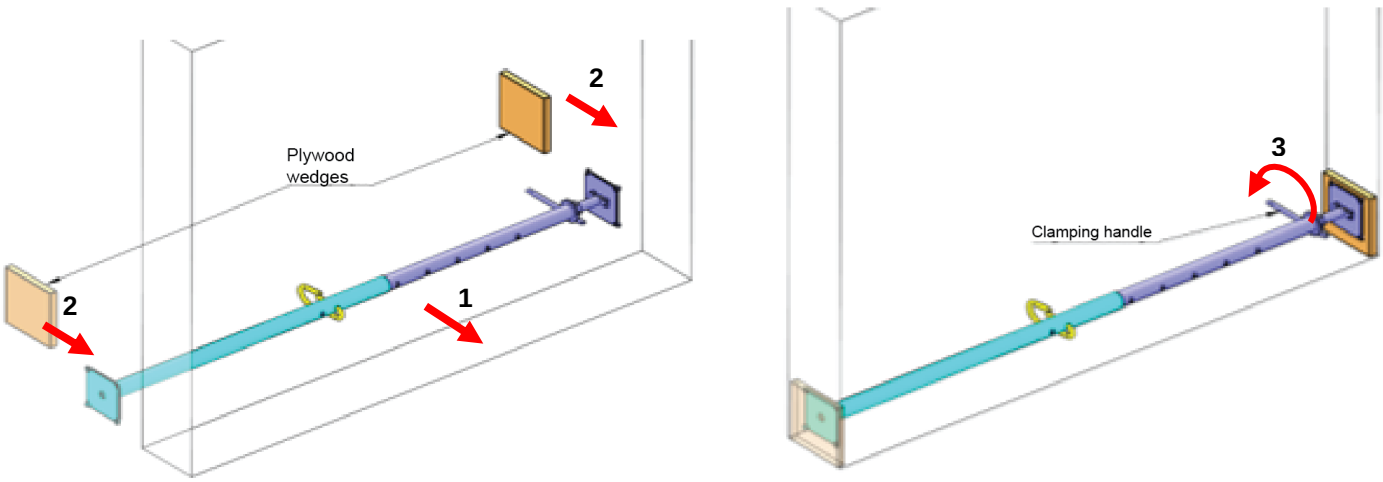
Adjusting the mooring cylinder:

- Remove the pin to release the sliding spur (1).
- Adjust the position of the sliding tube in relation to the pole so that the length of the mooring cylinder is similar to the width of the enclosure (2). Allow enough space to insert the plywood wedges between the enclosure and plate supports.
- Replace the pin to secure the sliding tube (3).



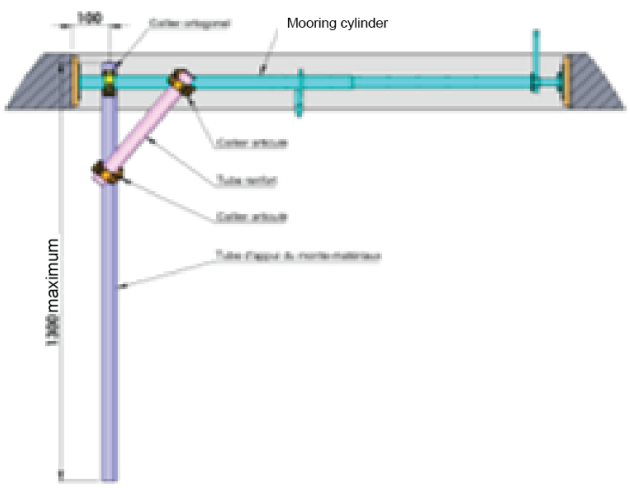
Installation of the mooring cylinder:

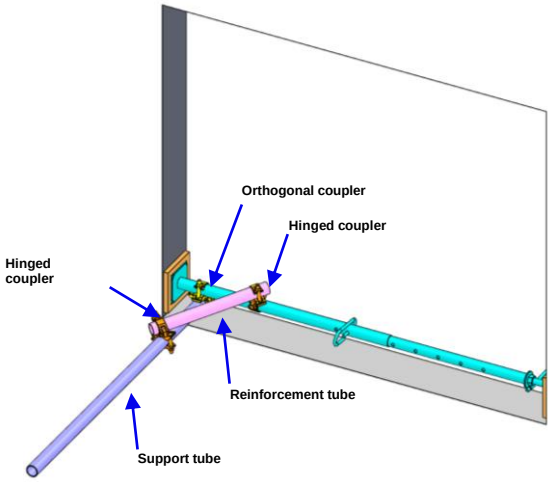
- Bring the mooring cylinder up to the enclosure and position it horizontally (1).
- Place marine plywood or equivalent wedges between the plates and the enclosure supports (2).
- Screw the clamping handle to block the cylinder (3). The minimum tightening torque to be applied to the clamping handle is 50Nm.



Installation of the anchoring tubes for an installation perpendicular to the building:

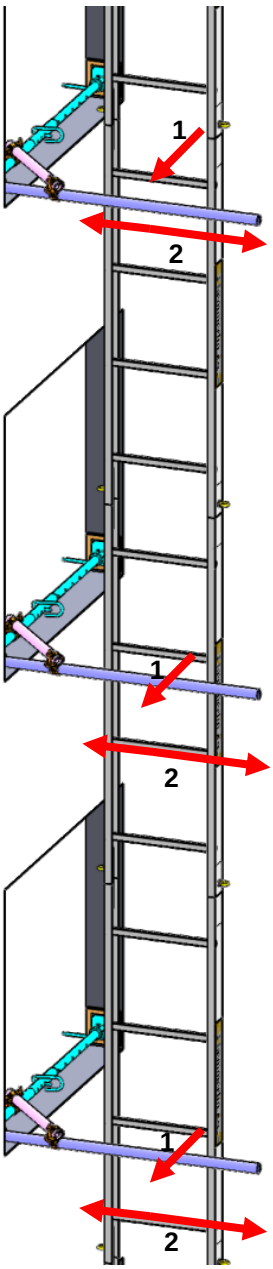
- With the mooring cylinder installed horizontally in the doorway, the support tube (1) is installed perpendicular to the façade using an orthogonal coupler (2).
- Then fit the reinforcement tube (3) with 2 hinged couplers (4).
- Tighten the couplers (2) and (4) with a minimum torque of 50Nm.

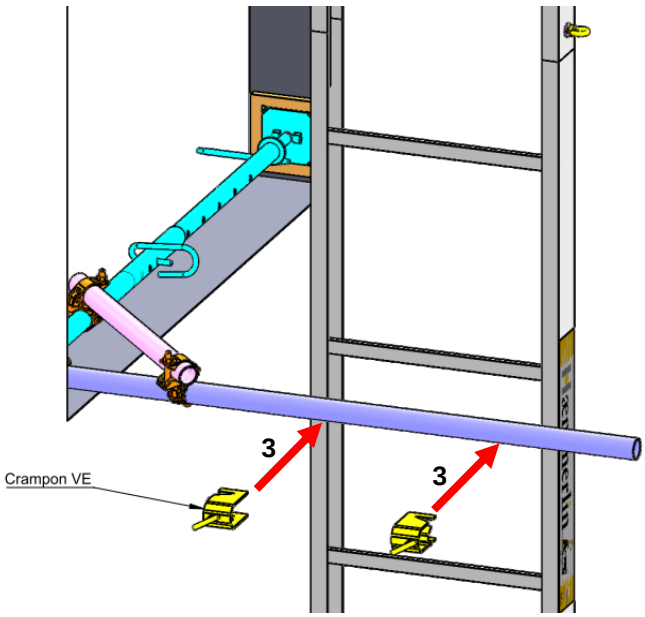


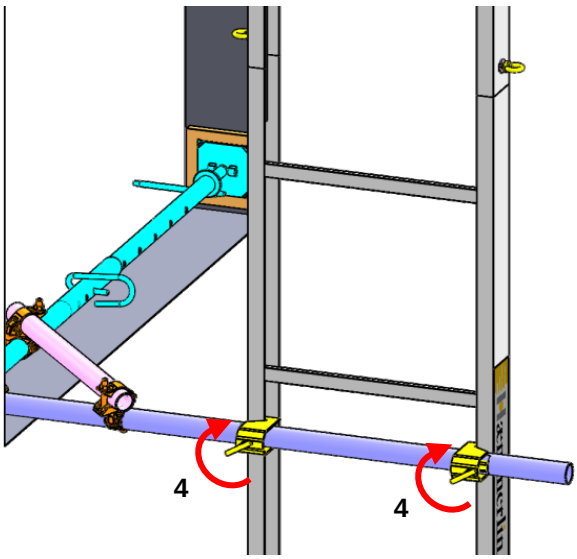


Anchoring a vertical ladder mat against the support tubes on the mooring cylinders:

- After the ladders have been slotted and locked together with the quick bolts, the ladder mat is pressed against the support tubes previously installed on the mooring cylinders on various floors of the building (1).
- Position the ladder in relation to the façade, taking into account the accessory that will be used, in order to guarantee free passage for the mobile equipment (2).
- Stabilise the ladder mat against the support tubes of the mooring tubes on each floor with 2 fixing clamps per support tube (3), then lock the assembly by tightening the fixing clamps (4).

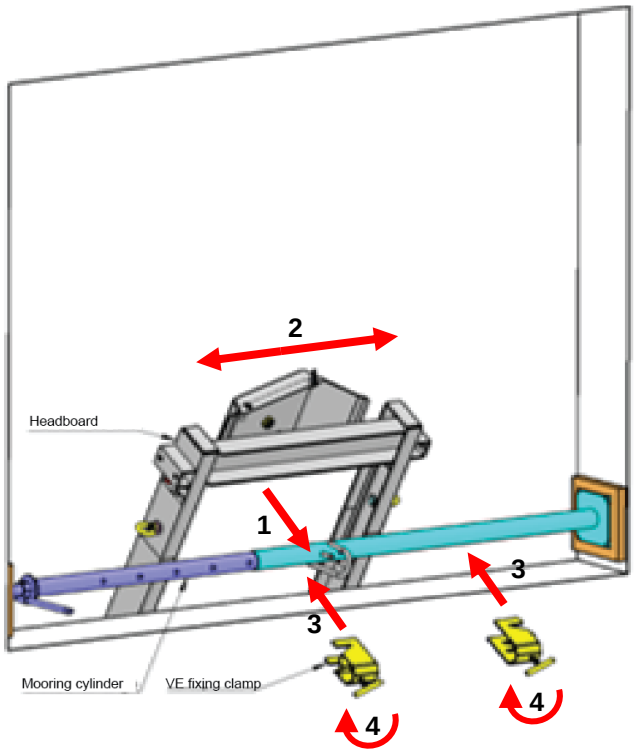


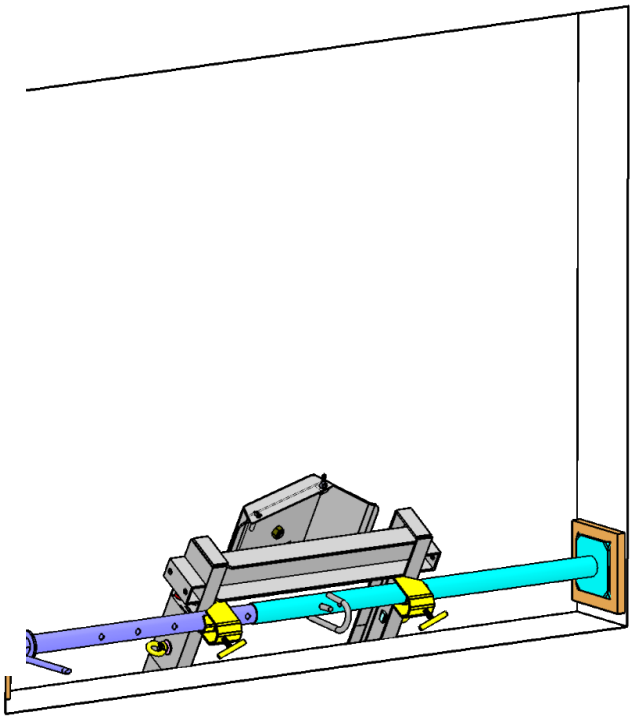




Anchoring of an inclined ladder mat against the mooring cylinder in front of an enclosure:

- Install the mooring cylinder horizontally in the enclosure (see page .....).
- With the ladder mast with the headboard already assembled and locked with the quick bolts, press the headboard against the mooring cylinder (1).
- Position the ladder mat in relation to the enclosure, taking into account the accessory that will be used, in order to guarantee free passage for the mobile equipment (2).
- Stabilise the headboard against the mooring cylinder with 2 clamps (3), then lock the whole unit by tightening the clamps (4).





VERTICAL INSTALLATION AGAINST THE FAÇADE OF A BUILDING USING CLAMPS

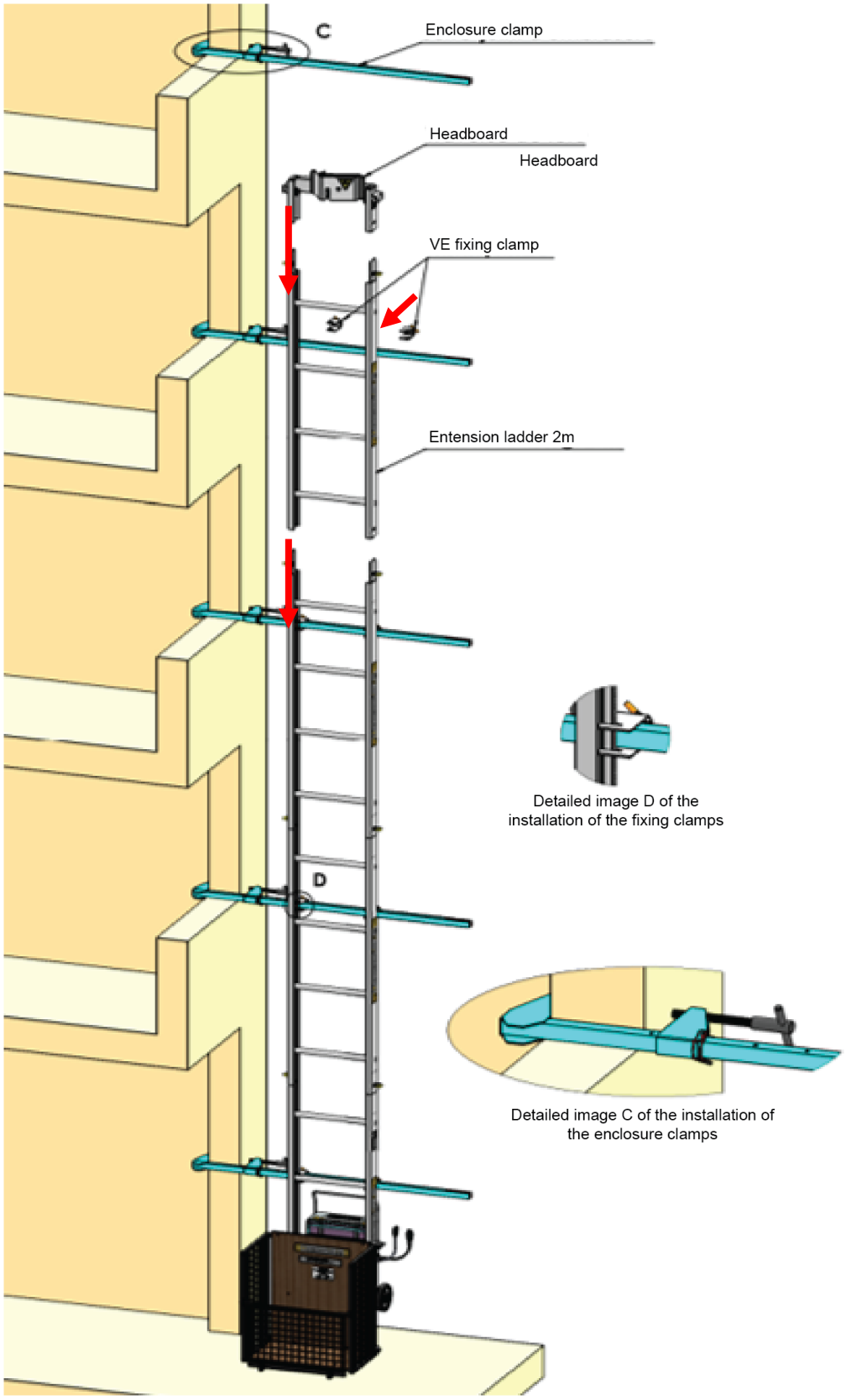
- Prepare the base of the unit, making sure that the floor surface is level. If the floor is wet and loose, install the unit onto boards.
- Lay the base ladder flat (rungs towards the ground) and then insert the trolley into the ladder so that the profile is clamped between the rollers. In order to fully insert the trolley into the ladder, the parachute cams must be unlocked by turning the shaft. The trolley must be oriented so that the parachute cams are at the top when the ladder is hoisted.
- Assemble the ladders and lock them with quick release bolts. The assembly on the ground can be done parallel or perpendicular to the façade of the building depending on the available space.
- Before installing the hoist on the façade, make sure that the anchors (balcony clamps, enclosure clamps, supports for fixing to the building, etc.) are correctly fixed to the building and that the building structure can withstand the forces generated by the hoist during its use.
- Up to 6 or 8 m of ladder length, hoist the unit with 1 person on the ground and 1 other on a higher floor of the building pulling on a rope attached to the end of the ladder (the person on the upper floor of the building must wear a safety harness with fall arrest system).
- Support the unit against the anchors previously installed on the balconies or windows. Set up 1 anchor per floor, i.e. approximately every 2 to 3 metres.
- Clamp the ladder to the anchoring with the fixing clamps, i.e. 2 fixing clamps per anchoring or floor level.
- The base of the structure of the hoist must be solid and durable.
- Secure the base ladder so that the ladder cannot slip to the ground. The ladder shoes must be anchored to the ground using dowels or fixing plugs adapted to the type of support. The dowels or fixing plugs must have a minimum diameter of 12 mm.
- Insert the headboard into the end of the ladders and lock it with 2 quick bolts.
- Set up the winch following all the instructions in the previous paragraphs concerning "Installation of winches...".
- Install the lifting cable, observing all the instructions in the previous paragraphs concerning “Installation of the lifting cable", and passing the cable over the headboard pulley (from right to left), then back down to under the trolley. It is not necessary to dismantle the pulley to install the cable, but be very careful not to get your fingers caught, cut or crushed!
- Then attach the rope to the trolley and tighten it, observing all the instructions in the previous paragraphs concerning "Installation of the lifting cable..." The hoist is now ready to be used for the assembly of the next ladders.

The following ladders can be assembled from the upper floors of the building:

- Bring the ladder sections up to the height of the headboard using the platform and unload them.
- Lower the moving equipment to the lower stop and then take up enough slack in the lifting rope so that the headboard can be removed without removing the lifting cable.
- When the headboard is removed, the new ladder elements must be inserted one after the other and locked with the quick bolts.
- Then unwind enough of the lifting cable so that the headboard can be reattached above the newly assembled ladders.
- Retract the lifting cable, ensure that it is wound correctly onto the winch drum.
- The trolley can be raised and lowered again.
- Proceed as above for the installation of the following ladders.
- As the ladders progress, clamp them against the previously installed anchors, using the fixing clamps, i.e. 2 fixing clamps per anchor or floor level.

During the installation and anchoring of the hoist to the building, the operators are of course obliged to comply with all safety instructions in order to preserve the safety of the personnel, the environment and the material.

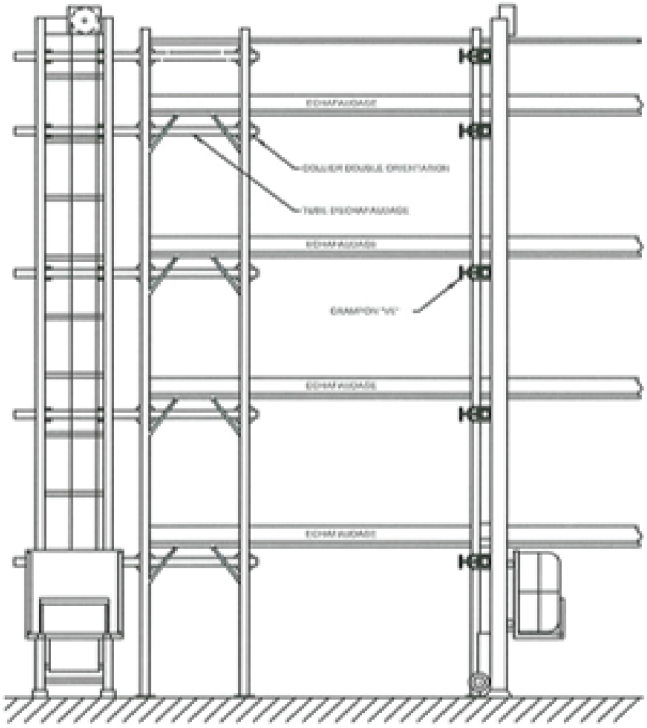
The personnel who will perform the installation and the anchoring of the ladders from a balcony or a window, will have to be equipped with a safety harness with a fall arrest system and a helmet.
We also remind you that it is strictly forbidden to use the hoist for access and transport of personnel.



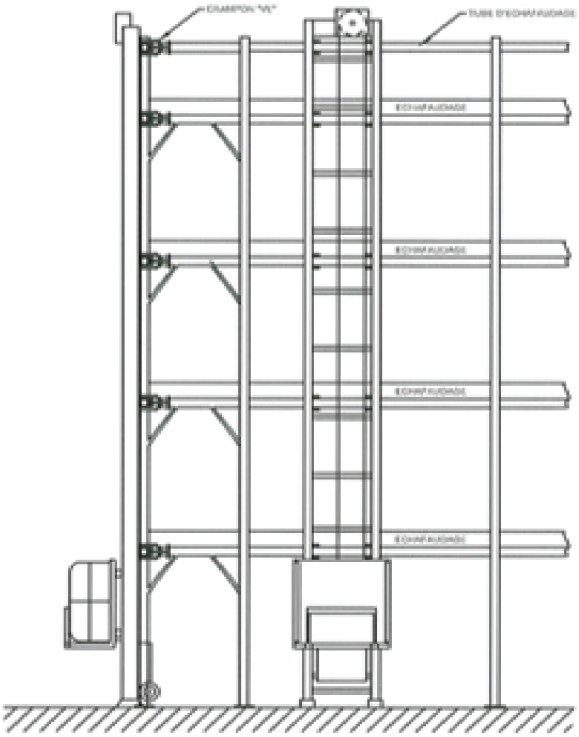
EXAMPLES OF VERTICAL INSTALLATIONS OF THE MATERIAL HOIST AGAINST SCAFFOLDING

ANCHORING AT THE BASE, AT EACH FLOOR AND AT THE TOP OF THE LADDER - A HOIST
IS SAID TO BE VERTICAL WHEN THE ANGLE BETWEEN THE MAT AND THE VERTICAL AXIS IS LESS THAN OR EQUAL TO 3°

LADDER PERPENDICULAR TO THE SCAFFOLDING
Ladder supported by the tubes clamped to the scaffolding and using double orientation coupliers (tubes and couplers not provided).
Ladder anchored against a scaffolding tube using VE fixing clamps.



LADDER PARALLEL TO THE SCAFFOLDING
Ladder directly supported by the scaffolding tubes using VE fixing clamps.



INSTALLATION AND USE OF ACCESSORIES FOR ANCHORING AGAINST SCAFFOLDING

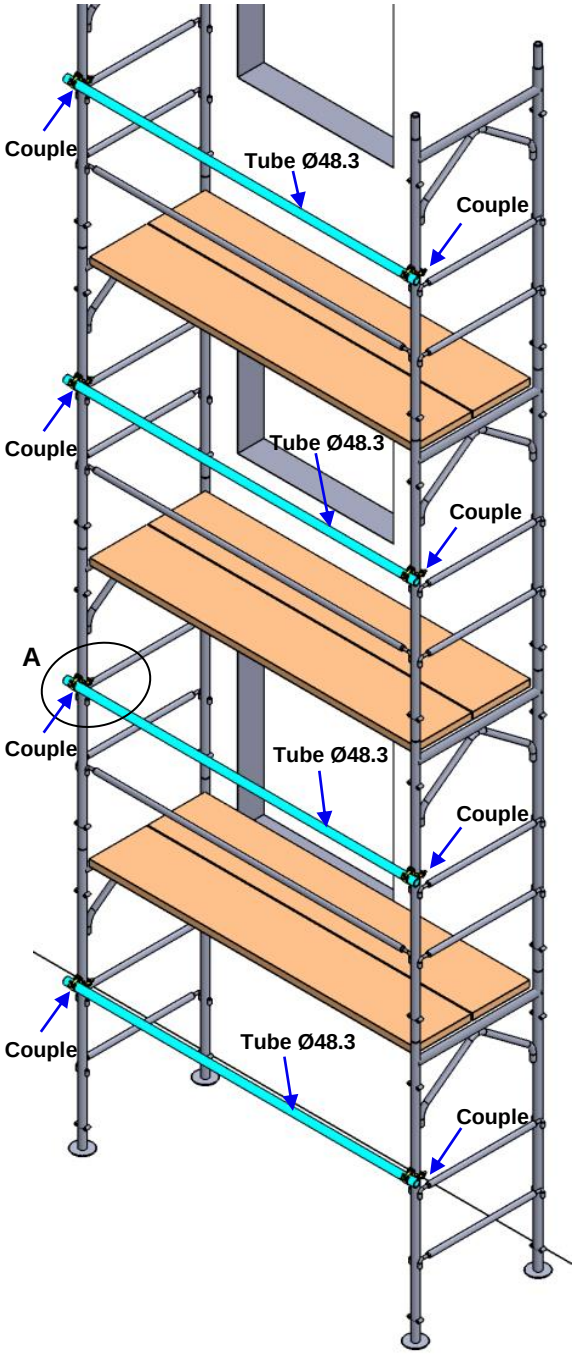
TUBE, COUPLERS AND VE FIXING CLAMPS

Scaffolding tubes, orthogonal couplers and VE fixing clamps are used to anchor the lift parallel or perpendicular to the scaffolding.
Regardless of the type of assembly, a complete anchorage must be provided at each level of the scaffold and only galvanised steel tube Ø48.3x3.2mm must be used.
For a parallel installation, the length of the tubes to be used will depend on the length of the scaffolding module. For example, for a 3m long scaffolding module, use tubes of length ≥ 3.10m.
For a perpendicular installation, the length of the tubes to be used will depend on the width of the scaffolding module + the length of the tube projection. For example, for a scaffolding module of 0.95m long + 1 projection of 1.20m, use tubes of length ≥ 2.25m.

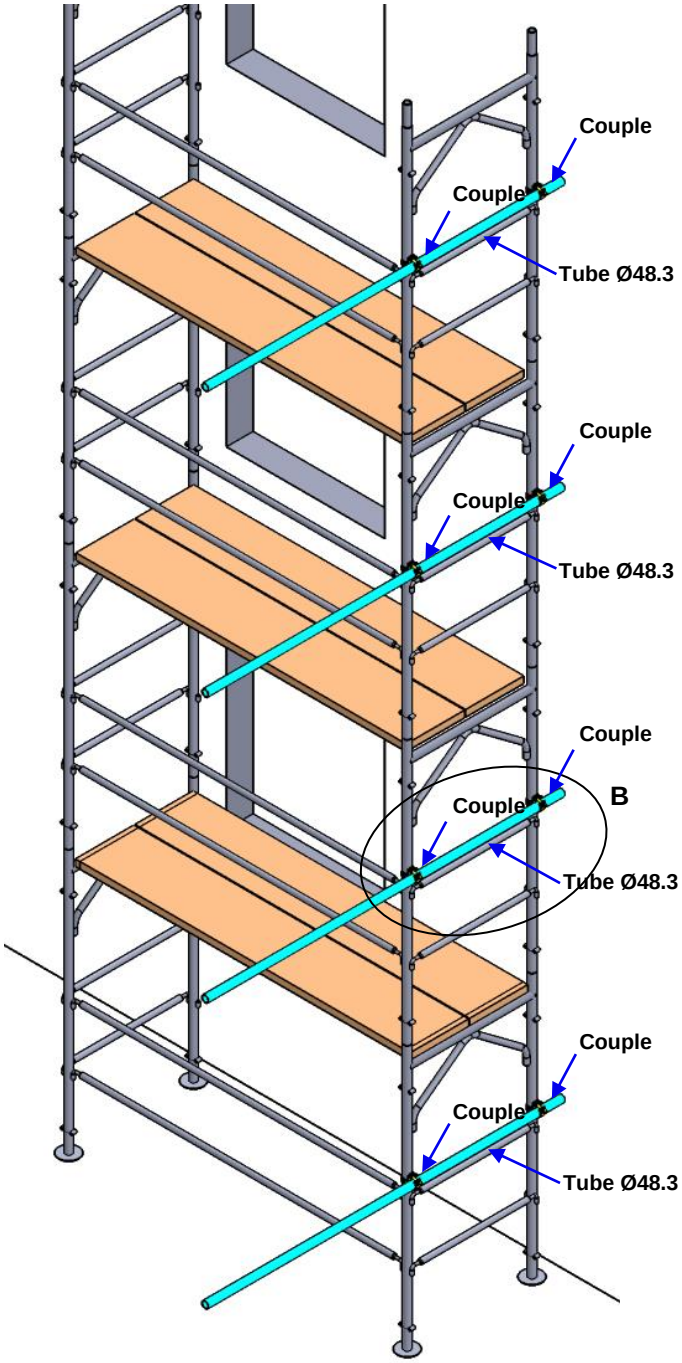
Installation of the anchoring tubes for an installation parallel or perpendicular to the hoist compared to the scaffolding:

- After the scaffolding has been set up and secured to the building, the support tubes (1) must be installed parallel or perpendicular to the scaffold using 2 orthogonal couplers (2) per tube and per level of scaffolding.
- Tighten the couplers with a minimum torque of 50Nm.

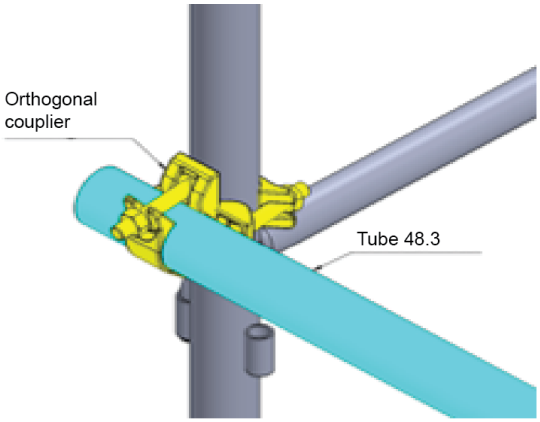
Parallel installation

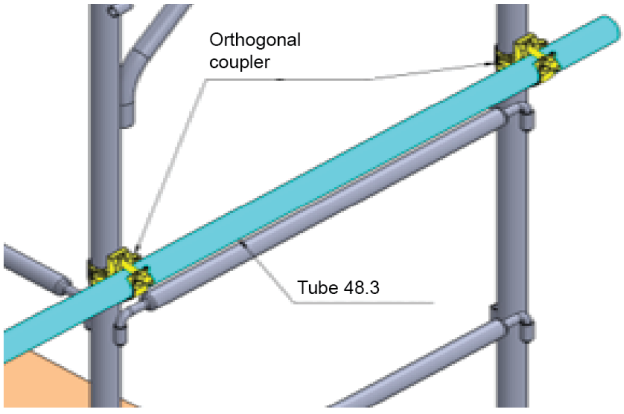


Perpendicular installation



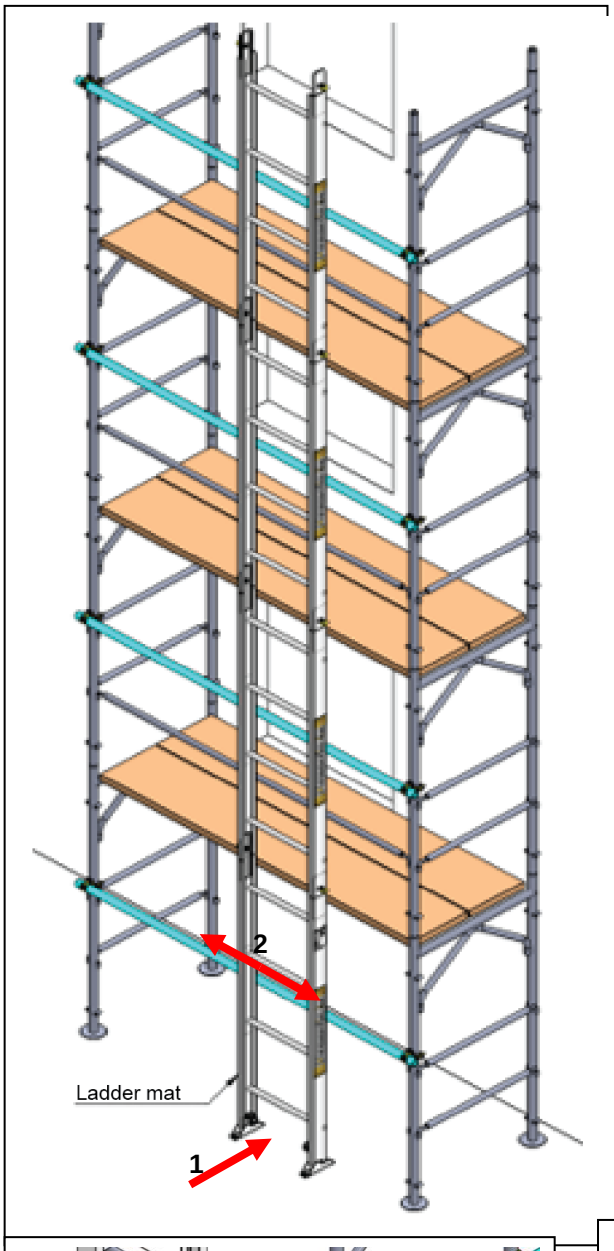
Detailed images A and B of the installation of Ø48.3 pipes and orthogonal couplers

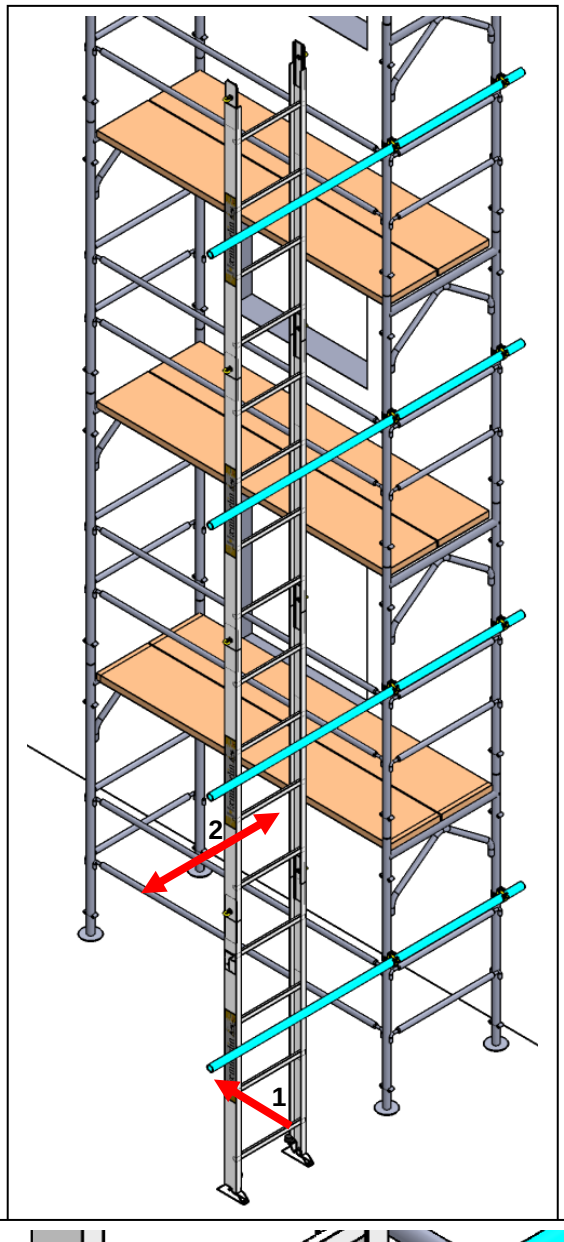


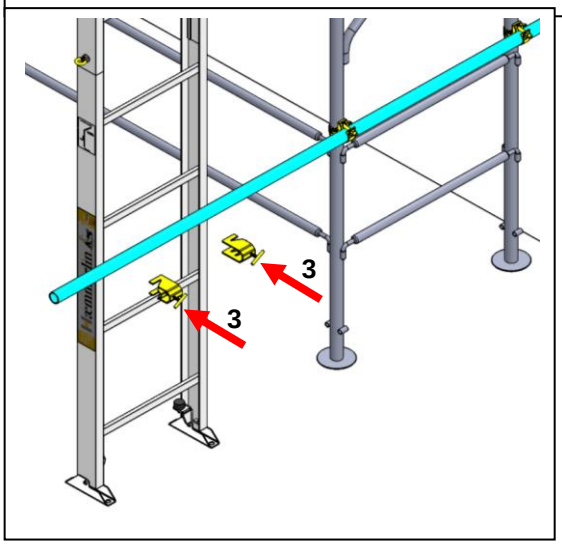


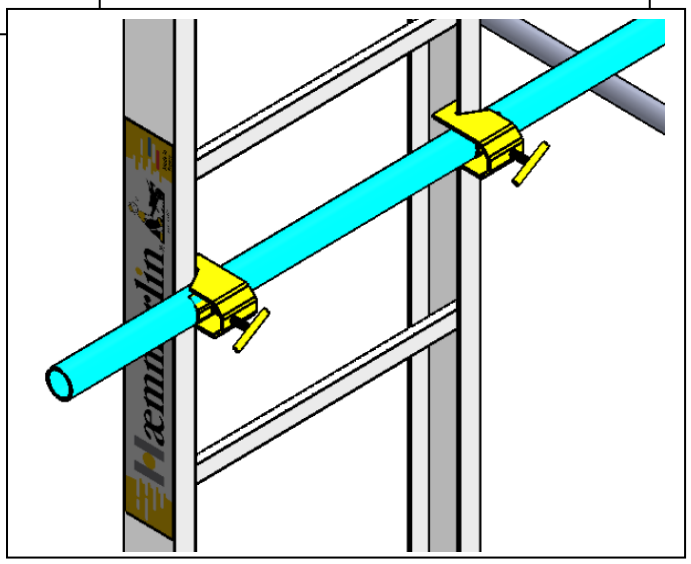
Anchoring a vertical ladder mat against the support tubes on the mooring cylinders:

- Press the ladder mat against the support tubes of the clamps previously installed on the various floors of the scaffolding (1).
- Position the ladder in relation to the scaffolding, taking into account the accessory that will be used, in order to guarantee free passage for the mobile equipment (2).
- Stabilise the ladder mat against the support tubes of the mooring tubes with 2 fixing clamps per support tube and on each floor (3), then lock the assembly by tightening the fixing clamps (4).









VERTICAL MOUNTING AGAINST SCAFFOLDING USING VE FIXING CLAMPS

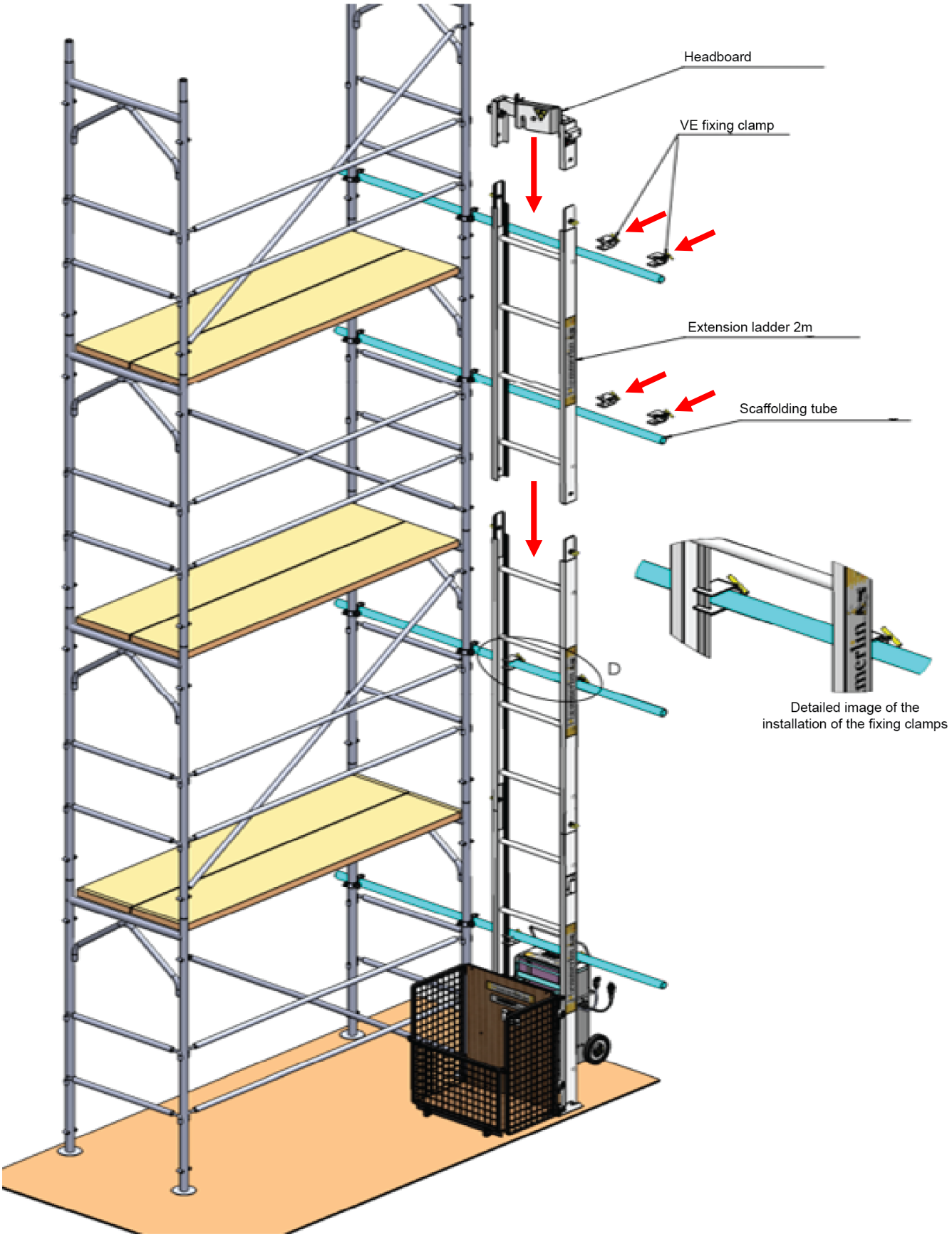
- Prepare the base of the unit, making sure that the floor surface is level. If the floor is wet and loose, install the unit onto boards.
- Lay the base ladder flat (rungs towards the ground) and then insert the trolley into the ladder so that the profile is clamped between the rollers. In order to fully insert the trolley into the ladder, the parachute cams must be unlocked by turning the shaft. The trolley must be oriented so that the parachute cams are at the top when the ladder is hoisted.
- Assemble the ladders and lock them with quick release bolts. The assembly on the ground can be done parallel or perpendicular to the façade of the building depending on the available space.
- Before installing the hoist on the scaffolding, make sure that it is correctly fixed to the building and that the building structure can withstand the forces generated by the hoist during its use
- Up to 6 or 8 m of ladder length, hoist the unit with 1 person on the ground and 1 other on the scaffolding pulling on a rope attached to the end of the ladder (the person on the scaffolding must wear a safety harness with fall arrest system).
- Press the whole unit against the scaffolding tubes previously clamped to the scaffolding with couplers. These tubes must protrude about 1m from the outside of the scaffolding. Use 1 tube per floor, i.e. every 2m
- Clamp the ladder to the scaffolding with the “VE” fixing clamps, i.e. 2 per tube or scaffolding level.
- The base of the structure of the hoist must be solid and durable.
- Secure the base ladder so that the ladder cannot slip to the ground. The ladder shoes must be anchored to the ground using dowels or fixing plugs adapted to the type of support. The dowels or fixing plugs must have a minimum diameter of 12 mm.
- Insert the headboard into the end of the ladders and lock it with 2 quick bolts.
- Set up the winch following all the instructions in the previous paragraphs concerning "Installation of winches...".
- Install the lifting cable, observing all the instructions in the previous paragraphs concerning “Installation of the lifting cable", and passing the cable over the headboard pulley (from right to left), then back down to under the trolley. It is not necessary to dismantle the pulley to install the cable, but be very careful not to get your fingers caught, cut or crushed!
- Then attach the rope to the trolley and tighten it, observing all the instructions in the previous paragraphs concerning "Installation of the lifting cable..." The hoist is now ready to be used for the assembly of the next ladders.

The following ladders can be assembled from the scaffolding:

- Bring the ladder sections up to the height of the headboard using the platform.
- Lower the moving equipment to the lower stop and then take up enough slack in the lifting rope so that the headboard can be removed without removing the lifting cable.
- When the headboard is removed, the ladder elements must be inserted one after the other and locked with the quick bolts.
- Then unwind enough of the lifting cable so that the headboard can be reattached above the newly assembled ladders.
- Retract the lifting cable, winding it correctly onto the winch drum.
- The trolley can be raised and lowered again.
- Proceed as above for the installation of the following ladders.
- As the ladders progress, clamp them against the previously installed scaffolding tubes, using the “VE” fixing clamps, i.e. 2 “VE” fixing clamps per tube or scaffolding level.

During the installation and anchoring of the hoist to the scaffolding, the operators are of course obliged to comply with all safety instructions in order to preserve the safety of the personnel, the environment and the material.

The personnel who will perform the installation and the anchoring of the ladders from the scaffolding, will have to be equipped with a safety harness with a fall arrest system and a helmet.
We also remind you that it is strictly forbidden to use the hoist for access and transport of personnel.



DISMANTLING THE HOIST

DISMANTLING THE LIFTING CABLE

At the end of the work, bring the trolley back to the bottom stop at the foot of the base ladder.
In the electric version, lock the remote control by pressing the red EMERGENCY STOP button on the remote control and disconnect the power supply to the winch in order to prevent it from being switched on accidentally when the lifting cable is removed.
In the petrol engine version, cut the motor by pressing the motor STOP button in order to prevent it from being switched on accidentally when the lifting cable is removed.
It is strictly forbidden to use the electric or thermal winch during dismantling operations, except at the very last moment to stow and wind the cable onto the drum.
Unlock and remove the attachment from the trolley.
Unlock the clip pins "B" and remove the cable hooking shaft "A" to release the lifting cable loop.
The person who detaches, handles and removes and re-winds the hoisting cable must wear protective gloves throughout the dismantling operations of the lifting cable.
Pull the lifting cable and disengage it from the knee joint pulleys and head pulley from the top of the site, taking the necessary precautions, i.e. be secured by a railing or safety harness equipped with a fall arrest system and attached to the building.
To avoid trapping fingers, only the person responsible for removing the cable from the pulleys should act on the lifting rope.
As a reminder, it is forbidden to climb on the ladder of the hoist, even during the lifting cable disassembly phase.
Then lower the lifting cable using a small cord attached to the loop.
Detach the cord from the loop, then reconnect the power supply and unlock the emergency stop by turning the red button on the remote control by a quarter turn in the electric version.
Then wind the entire lifting cable onto the winch drum by pressing the "UP" button (white) on the remote control in the electric version. Perform this operation with two people, one handling the remote control in the electric version or the control lever in the petrol version and the other winding the cable properly onto the winch drum.
The person winding the lifting rope onto the winch drum must wear protective gloves throughout this operation and ensure that the rope is always taut, that the turns are joined and that there is no disorder on the drum.
In order to prevent the rope from slackening when handling and transporting the winch, it is advisable to tighten the rope by tying it to the winch frame with a string.

Verify the general condition of the lifting cable. It must be replaced if it shows tears or crushing.
It is strictly forbidden to repair a lifting cable using couplers or cable ties!

DISMANTLING THE WINCH

Electric version:
Permanently disconnect the power supply, the remote control and the upper limit switch.
The winch can now be removed from the ladder and stored.
Unlock and remove the winch from the base ladder.
Remove the upper limit switch.

Continuation of the dismantling of the hoist:

Detach the headboard.
Remove any leftover headboard props.
Unscrew and remove the headboard.
Remove any trestles on which the ladder sections are supported.
Unscrew and remove the ladder elements.
Detach the knee joint and remove the trestle on which it may be resting.
Unscrew and remove the knee joint.
Straighten the rest of the ladder mat so it is vertical and then lay the unit on the ground perpendicular to the building or rotate to lay the whole unit parallel to the building.

The removal can be done in different ways:

- up to 8m in length, 2 people on the ground can lay down the ladder mat
- from 8 to 15m long, the ladder mat can be laid down by 2 people on the ground and 1 person on the roof or the top of the building site who holds and releases progressively by means of a rope fixed at the high end of the ladder mat

When the ladders are placed on the ground, unlock and remove all ladder parts, then remove the accessory trolley from the base ladder.
Alternative solution:
2 or 3 people support the entire ladder mat from the roof or top of the building site by means of a rope attached to the top end of the ladder mat. 1 person on the ground unlocks and removes the base ladder with the accessory trolley from below. Then as the lower person unlocks and removes the ladder sections one after the other, the people on the roof or top of the building site will let the ladder mat descend down to the ground.
Store all parts of the hoist very carefully so as not to damage them during handling, transport and storage.

 We remind you that during all dismantling operations, it is strictly forbidden to access and climb on the ladder elements as well as on the trolley and its accessories.

 The persons who participate in dismantling the hoist from the roof or the top of the site must take the necessary precautions, i.e. be secured by a railing or safety harness with a fall arrest system and attached to the building.

 It is mandatory to wear a helmet and safety shoes for all persons present on the site, whether or not they are involved in disassembly operations.

 We also remind you that during the disassembly operations, it is mandatory for the people who dismantle and put away the lifting cable to wear protective gloves and it strongly recommended for all other workers.

REGULATIONS AND SAFETY INSTRUCTIONS

In the following pages, we remind the user that they are bound to respect a certain number of texts, the essential points of which are mentioned here.
The Head of the Company shall post at all stations:

- sheets bearing the inscription "Transportation of Persons Prohibited" and giving the maximum payload according to the type of machine
- an instruction stating:
    * the safety measures to be taken during normal operation of the hoist,
    * the code of command signals,
    * the safety measures to be imposed to ensure maintenance and visits for the machine.

⚠SECURITY OF MOVEMENT AREAS

All workplaces at height must be protected by rails to prevent operators from falling.
Stations must be kept closed when the load is not level. The levels not used and in front of which the load passes, will have to be closed off with a fence so that no part of the moving elements can reach the personnel.
It is reminded that it is forbidden:

- to stand in the lifting area under a load being moved or unloaded in a higher station.
- touching or trying to touch any moving part, rollers, pulleys, cable etc. while the machine is in operation and its control has not been locked out.
- to step on the ladder or accessories for transporting material.

The danger zone must be delimited by a physical device consisting of two horizontal elements, one of which should be at a height of between 1 and 1.2m, the other at a height of about 0.5m. These elements should be marked in an eye-catching colour (e.g. red and white). The marked out space must protect an area of a width corresponding to the largest load envisaged, for a distance of at least 1.40m.

⚠ MAXIMUM ALLOWABLE WINDS

On installation or dismantling: 35km/h
During use: 45km/h
During use with V/H sheet carrier or double orientation sheet carrier: 10km/h
Out of use: 70km/h
If the wind speed exceeds 70km/h, suspend all activities around the hoist and mark out and seal off the area where a fall is likely to occur. It is strongly recommended to use a portable anemometer to check the wind speed.
When carrying out the installation in an environment with tall buildings, take all necessary precautions against swirling winds (vortex effect).

ASSIGNING OPERATORS

It is forbidden to assign workers to operators the hoist whose imperfect knowledge of the instructions and manoeuvres, their state of health, their physical, visual or auditory aptitudes, make them unfit to carry out these functions.
No person under the age of 18 years shall be responsible for the operation of an hoist or with giving signals.
The location of the hoist operator's station must allow for full monitoring of the route. This operating post shall be equipped with an emergency stop.
If part of the route is not visible from the main operator's station, a control extension that is long enough to allow full monitoring of the route must be used.

⚠ SECURING THE LOADS

The loads placed on a hoist must not exceed the permitted weight.
It is prohibited to place loose material on the platform of a hoist, if the platform is not closed all the way around, unless the material is securely palletised.
Mobile loads (wheelbarrows, wagons) must be wedged or securely fastened so as to prevent them from moving during the operation of the hoist. Wheelbarrows or wagons must be loaded in such a way that no parts of the load can fall off.
Casks, barrels or canisters must be placed upright and must be secured if necessary.
No parts of the load should project beyond any platform, cab or hoist shaft.

OPERATING INSTRUCTIONS

It is mandatory to wear safety shoes, gloves, protective goggles, a helmet and ear protection for all persons present on the site, whether or not they are involved in assembly and dismantling operations.
We also remind you that it is mandatory to wear safety shoes, gloves, protective goggles, a helmet and ear protection for all persons present throughout the entire duration of the work.
Instructions for use are to be drawn up by the Head of the Establishment after consultation with the company's Health and Safety Committee or, failing that, by staff representatives, following the model below:

IT IS FORBIDDEN

- to install the hoist in conditions not covered by these instructions.
- to use the hoist in conditions not covered by these instructions.
- to let any person outside the department or incompetent person handle the control of the unit.
- to use the installation as a ladder.
- to use the unit to transport people.
- **to overload the unit.**
- **to touch the moving equipment, pulleys and lifting cable during operation of the hoist.**
- **to place your hands on the rails of the ladder structure and risk having your hands cut off when the trolley passes.**
- to approach the unit except to load or unload.
- to stand or simply pass through the load travel area unless the winch motor is stopped and the trolley is in the lower limit position.
- **to install or dismantle the hoist if the wind exceeds 35km/h.**
- **to use the hoist if the wind exceeds 45km/h.**
- **to use the vertical/horizontal sheet carrier in case of wind.**
- **to approach and enter the potential fall zone if the wind exceeds 70km/h.**
- **to install, use or dismantle the hoist in the event of a storm.**
- to use the hoist in an ATEX zone or explosive areas.
- to touch the capacitors even after the power has been switched off.
- to fully unwind the winch drum except to properly wind the cable. **Leave at least 3 turns of cable on the drum at all times.**
- **to use a damaged, crushed or spliced cable (see the paragraph on the lifting cable on pages 93-94.**
- **to repair a lifting cable using couplers or cable ties.**
- to insert your hands into the winch, which could cause serious injury.
- to work on the hoist when it is loaded or when the winch is under tension.
- to use the hoist for other uses than its intended purpose.
- to tire the button box cable by unnecessary twisting (risk of breaking wires).
- to use the hoist under conditions that would expose it to direct water jets.
- to use the lift if the safety systems (upper limit switch, lower limit switch, anti slack rope and parachute system of the trolley) are locked out.
- to use the hoist if the base ladder shoes are not anchored to the ground
- to use the hoist if the knee joint is not supported and locked to the building.
- to use the hoist if the headboard is not supported and locked to the building.
- to use the hoist in the absence of shoring and anchoring.

BEFORE THE START OF THE USE, THE OPERATOR MUST:

- check for permanent deformation or corrosion of the hoist components that could compromise its strength.
- check the condition of the welds and bolts.
- check the condition of the winch and accessories.
- ensure that the headboard is not installed directly after the knee joint.
- check the condition, the winding on the drum, the guiding and the fixing of the lifting cable.
- check that the parachute system is working correctly.
- check that the brake is working properly when unloaded and then when loaded.
- check the correct operation of the upper and lower limit slack cable detector.
- check that the passage for the mobile equipment is free.
- check that the top of the ladder is resting on its support point.
- check that the shoring and anchoring are present and in a good condition.
- check the attachment of the ladder to the building
- verify that the ladder shoes are anchored to the ground using dowels or fixing plugs adapted to the type of support. The dowels or fixing plugs must have a minimum diameter of 12 mm.

- check the condition of the ladders. A ladder that has been damaged by catching the parachute or damage during transport, it must be replaced immediately and under no circumstances be used again.

⚠ DURING USE, THE OPERATOR MUST:

- refuse to lift a load that appears to be greater than that marked on the unit.
- refuse to lift loads that are poorly secured or that present a risk of moving or falling during the operation.
- never use the unit to transport people.
- avoid tapping or repeated pressing of the control box buttons and sudden reversal of the direction (heats the motor and electrical equipment).
- ensure, before performing any manoeuvre to raise or lower the mobile equipment, that nobody is in the load travel area.
- avoid putting objects into the moving parts of the hoist.
- never use the hoist if all protective elements are not in place (e.g.: lids, hoods, etc.)
- respect the intermittent service of 25% (corresponds to around 17 cycles maximum per hour for the Maxial Premium and 20 cycles per hour for the Maxial Excellium and Expert).
- observe the operating temperature range of -5 to 40°C.

⚠ AT THE END OF USE, THE OPERATOR MUST:

- have the mobile equipment rest on the ground or in a low stop.
- never allow the mobile equipment to remain high up on its parachute.
- stop the motor of the hoist, disconnect the power supply and remove the remote control so that an unauthorised person could not operate the winch outside of working hours on the construction site.

TRANSPORT AND STORAGE:

- The hoists and their accessories are delivered on a pallet.
- For transport and storage, all parts of the hoist must be carefully packed so as to avoid damage.
- When packing, particular care must be taken not to damage the electric wires or cables.
- During transport in a vehicle, care must be taken to ensure that all parts of the hoist are securely fastened so as to avoid damage.
- During the handling of components of the hoist, take care not to bump them, as this could lead to damage.
- The components of the hoist that weigh more than 25kg must be handled by at least two people.
- When the hoist is not in use, it must be stored in a dry place away from dust.

⚠ **The hoists must be checked in accordance with the regulations when they are first put into service then a minimum of every 6 months. The same applies in the case of major alterations or repairs. These provisions are derived from regulations aimed at the heads of user establishments. This biannual verification must include:**

- **The suitability test.**
- **The assembly and installation test.**
- **The state of conservation test:**
- **The static test.**
- **The dynamic test.**

The reports of interventions must be recorded in this maintenance book for the unit pursuant to the decree of 1st March 2004, to contribute to the essential maintenance and the proper management of the lifting units until their disposal.
The head of the establishment is responsible for the application of the user regulations in force.
After each dismantling and reassembly on a new site, the hoist must be tested empty, loaded and overloaded before being used.

⚠ **If the lift is in a state of disrepair that could cause risks to the user or the environment, it must be taken out of service or dismantled.**

⚠ **Haemmerlin shall only guarantee the material if it is completely intact. If the equipment is weakened by any kind of damage (shock, deformation, cut, tear, weld breakage, etc.), it must be taken out of service or dismantled.**

⚠ **Haemmerlin is not liable for any consequences arising from failure to comply with the aforementioned regulations.**

MAINTENANCE

The head of the company must set up and keep up to date a safety register in which all controls and interventions carried out on the machine must be recorded (Art. 233-1 of the French Labour Code).
The hoists are built to perform 30,000 cycles or 1,500 working hours without adding grease or changing the gearbox.
When the number of cycles or hours of operation is reached, the winch must be returned to an authorised repairer for inspection and overhaul.
Maintenance and dismantling of the winch (motor, brake, gears, electrical components, etc.) must be carried out by qualified personnel.
Maintenance and lubrication work should only be carried out when the hoist is still and after the hoist control has been locked out.
If it is absolutely necessary to set the unit in motion in order to carry out special maintenance work, this should only be done under the direction of a qualified supervisor.
If maintenance work is to be carried out on the trolley or on parts located on a level below the trolley, it is compulsory to place restraints on the guides to prevent the trolley from being lowered accidentally.
The various components of the hoists must be kept in perfect condition at all times in terms of maintenance and operation of the safety devices.
If one or more of the protections must be removed to carry out control or maintenance work, the power supply must be disconnected and the capacitor discharged beforehand. These operations must be carried out by qualified personnel.
It is forbidden to carry out maintenance work on the electrical components without the power supply having been disconnected and the capacitor having been discharged.
During maintenance operations, the machine must be kept stable and the same safety instructions as when the hoist was first installed must be strictly observed.
In the case of dismantling for maintenance, the elements must be kept stable during the dismantling and the same safety instructions as when the hoist was first installed must be strictly observed.
After the maintenance work has been completed, it is compulsory to carry out a number of load and empty tests to check that the hoist is working properly.
The MAXIAL hoist has been designed for minimum maintenance.
However, we recommend that the user keeps the unit clean and handles the parts carefully.
We detail below the elements that must be checked and maintained at each installation but also periodically in case of prolonged work:

LADDER STRUCTURE AND SHORING AND ANCHORING ACCESSORIES

- Check the condition and solidity of the shoring and anchoring elements every day.
- Check the condition of the welds and bolts every day.
- Check the state of corrosion of the metal parts every day and if necessary, repaint them.

ELECTRICAL EQUIPMENT:

- Check the condition and proper function of the "up, down and emergency stop" buttons on the remote control every day.
- Check the condition and proper function of the upper limit switch every day.
- Check the condition and proper function of the lower cable slack safety switch every day.
- Check the condition of the electrical cables every day If they are crushed or torn, they must be replaced.
- Check the condition of the power and remote control plugs and sockets every day. If they have defects, they must be replaced.

ELECTRIC MOTOR BRAKE:

Check that the brake is working properly every day. During the descent of the mobile equipment with a maximum load the latter must stop instantly when the "down" button is released on the remote control. If necessary, the brake must be adjusted or replaced. These adjustment or replacement operations on the brake may only be carried out by qualified personnel.

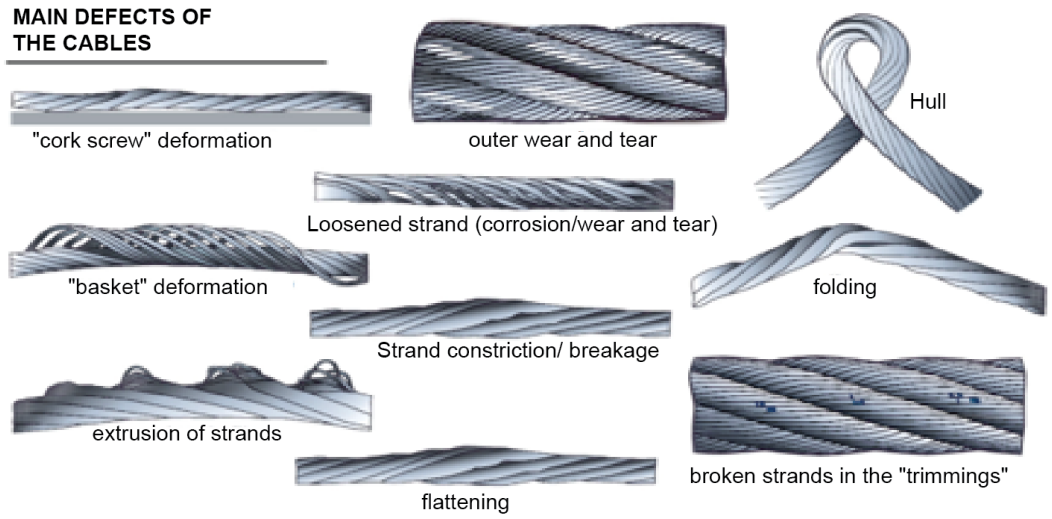
REDUCER:

- Maxial Premium: re-grease on average every 3 years or 30,000 cycles.
- Maxial Excellium and Expert: drain the oil every 3 years or 30,000 cycles.

⚠ LIFTING CABLE

Verify the general condition and the winding of the lifting cable around the drum every day.
It must be replaced if it shows:

- A tear or cut of one or more wires
- Outer wear of the surface strands
- A corkscrew deformation
- A basket deformation
- An extrusion of strands
- A hull
- A loose strand
- A strand constriction or breakage
- Flattening
- Folding
- Twisting
- Crushing
- Heat damage (burn marks, metal discoloration).
- Lengthening of the cable or marked decrease in the diameter of the cable.
- Knots or splices.



⚠ **The cable must also be replaced if it has undergone:**
- Fatigue after repeated bending, even under normal conditions of use.
- Overload (exceeding the rated load).

⚠ **It is strictly forbidden to repair a lifting cable using couplers or cable ties!**

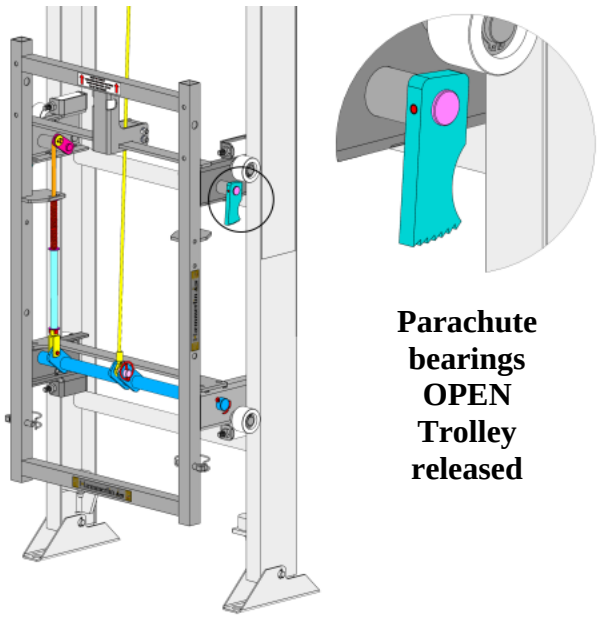
⚠ **If the hoisting rope is replaced, the replacement rope must have exactly the same characteristics as the original rope.**

If it is not wound correctly, block the trolley on the ladder, unwind the cable completely and then rewind it with adjoining turns. This is very important to avoid premature wear and tear of the cable.
Perform this operation with two people, one handling the remote control and disabling the lower cable slack safety device and one unwinding the cable, taking care not to leave the cable drum disordered.
During this action of unwinding the cable, be very careful not to press the "UP" button accidentally, because the cable would then be wound up on the drum and could also wind your hand holding the end of the cable towards the interior of the drum and cause serious injuries.
In all cases, the person who unwinds, handles and winds the hoisting cable must wear protective gloves throughout these operations.
Clean and grease the lifting cable every day.

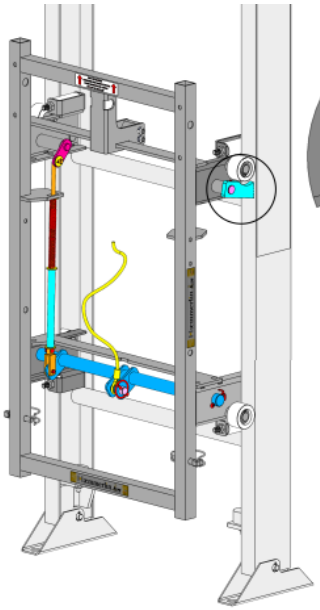
PARACHUTE SYSTEM for Maxial Premium, Excellium and Expert range trolleys

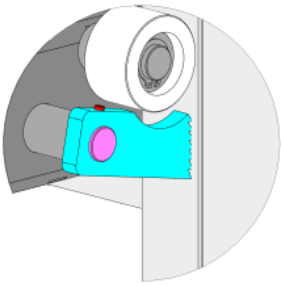
All the trolleys on our material lifts are fitted with a parachute system.
This is a mandatory safety system which locks the mobile equipment and its load to the ladder structure if the lifting cable breaks.

Using the parachute system:
When the lifting cable is taut, the serrated bearings of the parachute system are fully released, which allows the mobile equipment to rise or fall freely within the movement of the winch controlled by the operator.
However, if the lifting cable accidentally breaks, the serrated bearings of the parachute system close again, biting into the sides of the ladder structure and instantly locking the mobile equipment and its load to the ladder structure. The serrated bearings are closed using preloaded springs that act on the rods between the cable attachment pin and the serrated bearings.



Parachute bearings OPEN Trolley released



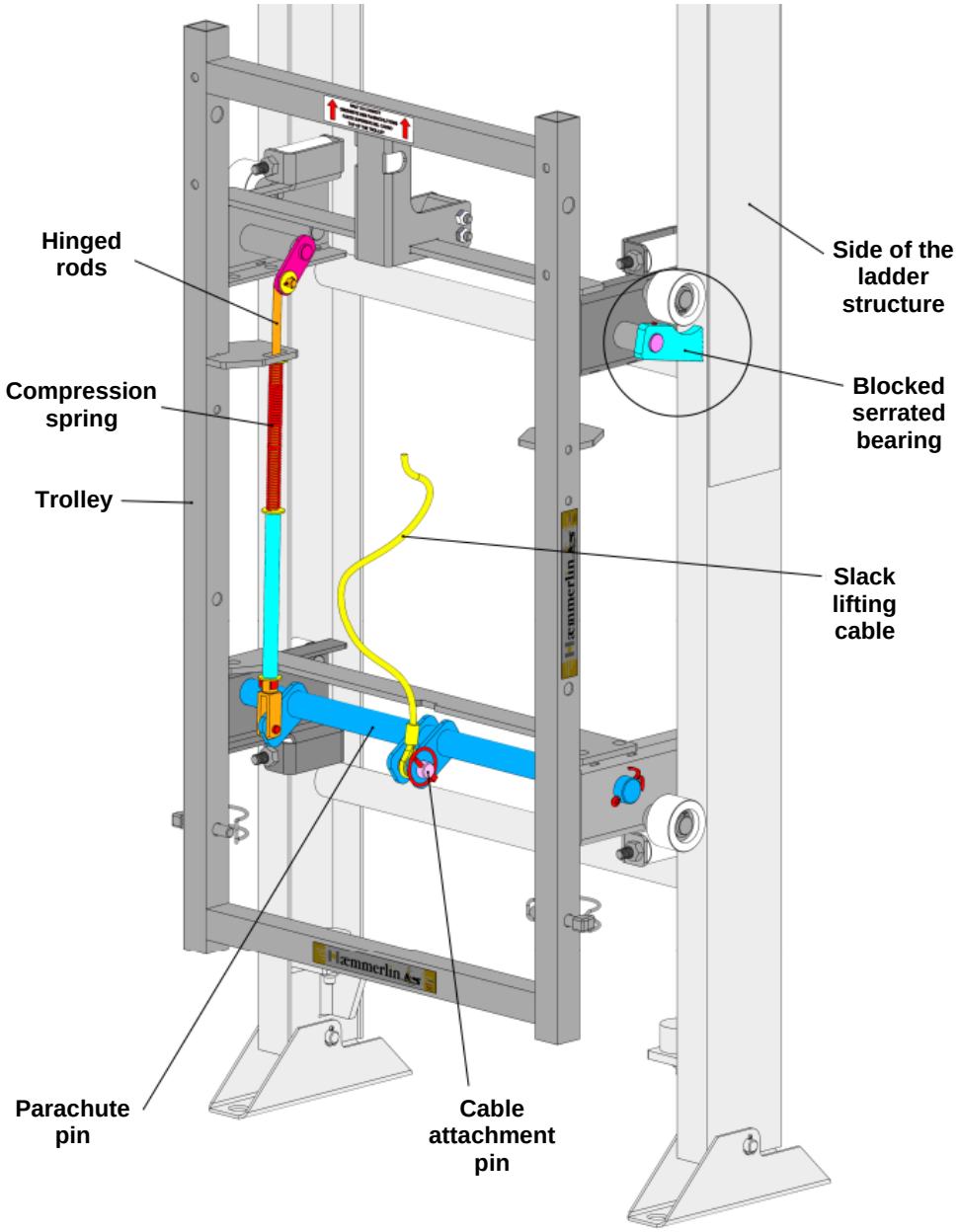


Parachute bearings CLOSED Trolley locked

Checks:
The parachute system must be checked every day before using the lift.
Check that no part of the parachute system is locked or jammed.
Make sure the serrated part of the bearings is sharp; if they are blunt, replace the bearings.
Check that the springs are not broken; if they are, replace them.
Test that the parachute system functions correctly by suddenly lifting and releasing the trolley, which should cause it to lock instantly on the ladder structure.

Maintenance:
Clean and grease all the articulated parts of the parachute system every day.
The serrated parts of the bearings must not be greased!
If part or all of the parachute system is jammed, all the joints must be dismantled, cleaned, greased and reassembled correctly.
If any parts of the parachute system are worn or in poor condition, they must be replaced with new original parts.
In the event of a parachute blockage due to a cable break:

- Inspect the entire trolley and its parachute system and replace any defective parts
- Replace the part of the ladder structure where the parachute blockage occurred
  - To release the trolley, replace the lifting cable and press the "UP" button on the remote control to tighten it (see paragraph on installing the lifting cable on pages 30 to 32).



Reminders:

Check the general condition of the lifting cable every day. The lifting cable must be replaced if it is torn or crushed (see section on the lifting cable on pages 80 to 81).
It is strictly forbidden to repair a lifting cable using couplers or cable ties!
Never allow the mobile equipment to remain high up on its parachute.

KNEE JOINT PULLEYS

Check for wear and tear (change if mark exceeds 5 mm),
Grease regularly, on average every week and systematically at each assembly.

ACCESSORY TROLLEY ROLLERS

Grease regularly, on average every week.
Replace the roller when the slack exceeds 1 to 2 mm.

⚠ **If the lift is in a state of disrepair that could cause risks to the user or the environment, it must be taken out of service or dismantled.**

⚠ **Haemmerlin shall only guarantee the material if it is completely intact. If the equipment is weakened by any kind of damage (shock, deformation, cut, tear, weld breakage, etc.), it must be taken out of service or dismantled.**

⚠ **Haemmerlin is not liable for any consequences arising from failure to comply with the aforementioned regulations.**

REPAIRING MAXIAL ELECTRIC WINCHES

It is forbidden to carry out maintenance work on the electrical components without the power supply having been disconnected and the capacitor having been discharged.
If one or more of the protections must be removed to carry out control or maintenance work, the power supply must be disconnected and the capacitor discharged beforehand. These operations must be carried out by qualified personnel.
If it is necessary to apply electrical power to the unit to perform certain checks, these checks should only be performed under the supervision of a highly qualified supervisor.

THE WINCH DOES NOT WORK

* Check if it is connected:
  - Power supply
  - Remote control
  - The upper limit switch and slack cable safety device
* Check that the emergency stop button on the remote control is unlocked.
* Check the general power supply 220V50Hz - 16/20A, by measuring the supply voltage on the power extension cord (winch not connected) using a voltmeter. If the power supply is not 220V, use another power source.
* Check if the thermal relay has tripped due to overheating of the motor. Wait for the thermal relay to reset automatically after the motor has cooled down, then try the winch going up and down. The thermal relay only acts on the ascent so that it can immediately lower the load safely to the ground.

THE WINCH WORKS WHEN IN DESCENT BUT NOT WHEN IN ASCENT

* Check that the electrical contact on the upper limit switch fixed on the ladder is connected in order to ensure that the electrical circuit is closed and the mechanical roller is released.
* Check that the wires of the plug and socket at the winch output are properly connected.
* Check that the wires of the electrical cable are correctly connected to the contacts of the upper limit switch attached to the ladder.
* Check that the mechanical roller of the upper limit switch on the ladder is not damaged or defective.

THE WINCH WORKS WHEN IN ASCENT BUT NOT WHEN IN DESCENT

* Check that the electrical contact of the cable slack safety device is connected and that the push-button has been released.
* Check that the mechanical push-button of the slack rope safety device is not damaged or defective.
* Verify that the moving equipment is not in the lower stop position, as the cable slack safety device would instantly cut off the descent.
* Verify the lifting cable is properly wound around the winch drum. When the lifting cable is taut, the roller is moved so as to release the cable slack safety device, which must not be cut-off.
* Verify that the ladder is inclined enough (minimum 30° from the horizontal) to allow the mobile equipment to descend by gravity. If the incline is not steep enough, a slack is created in the lifting cable during the descent of the mobile equipment. This slack in the cable will be detected by the parachute system that will mechanically block the trolley on the ladder and/or by the cable slack safety device that will electrically cut the descent. To avoid this, the slope of the ladder must be increased, or use the “shallow slope trolley return system" code 312796501 or remove weight from the moving equipment to increase the gravity of the crew during descent.
* If the moving equipment is lowered in a jerky manner due to a slack rope system malfunction, action must be taken on the adjustment cam to slightly reduce the spring tension.

THE WINCH STARTS BUT STRUGGLES TO LIFT THE LOAD

* Check the 220V50Hz power supply by measuring the supply voltage (using a voltmeter). If the voltage is between 200 and 220V, the power supply is correct. If the voltage is below 200V, a different power source must be used or an extension cord with a larger cross-section must be used (conductor section 2.5mm2 for a length of 0 to 15m and 4mm2 for a length of 15 to 30m maximum).
* Check the motor brake by listening to see if it opens by pressing the up or down buttons on the

remote control. If the brake does not open or is not properly adjusted, in which case the air gap needs to be adjusted to 0.3mm, or the brake coil is defective in which case the entire brake must be replaced.
In both cases, the winch assembly must be dismantled in order to access the brake.

THE CIRCUIT BREAKER JUMPS UP AND DOWN

* Ensure that the power supply line can support a current of 20A, (starting current of the winches =20A). Also ensure that it is initially protected by a high sensitivity differential device 30mA for the protection of persons and a circuit breaker at maximum 20A to protect the winches against overloads or short circuits.
* Check the wiring and contact connections at the plugs, sockets and cable outlets.
* Check the electric motor by opening the motor terminal block to ensure that the wire connections are correct and that there are no disconnected wires that could short-circuit.

THE UPPER LIMIT SWITCH DOES NOT WORK

* Ensure that the upper limit switch is correctly positioned on the ladder where you wish to stop the upwards movement. The upper limit switch roller must be able to detect the arrival of the trolley.
* Ensure that the electrical contact inside the upper limit switch box is not defective, in which case it should be replaced.

THE SLACK CABLE SAFETY DEVICE DOES NOT WORK

* Ensure that the contact inside the lower slack cable safety box is not defective, in which case it should be replaced.
* Ensure that the slack cable system is correctly adjusted. Otherwise, change the adjustment cams to slightly increase the spring tension and optimise the position of the switching cam in front of the push-button of the electrical contact of the low cable slack safety device. In the case of slack in the lifting rope, the cut-off cam must act on the push-button of the electrical contact of the lower cable slack safety device and could cause the descent to stop. Conversely, when the lifting cable is taut, this cut-off cam must be completely free of the electrical contact of the lower cable slack safety device

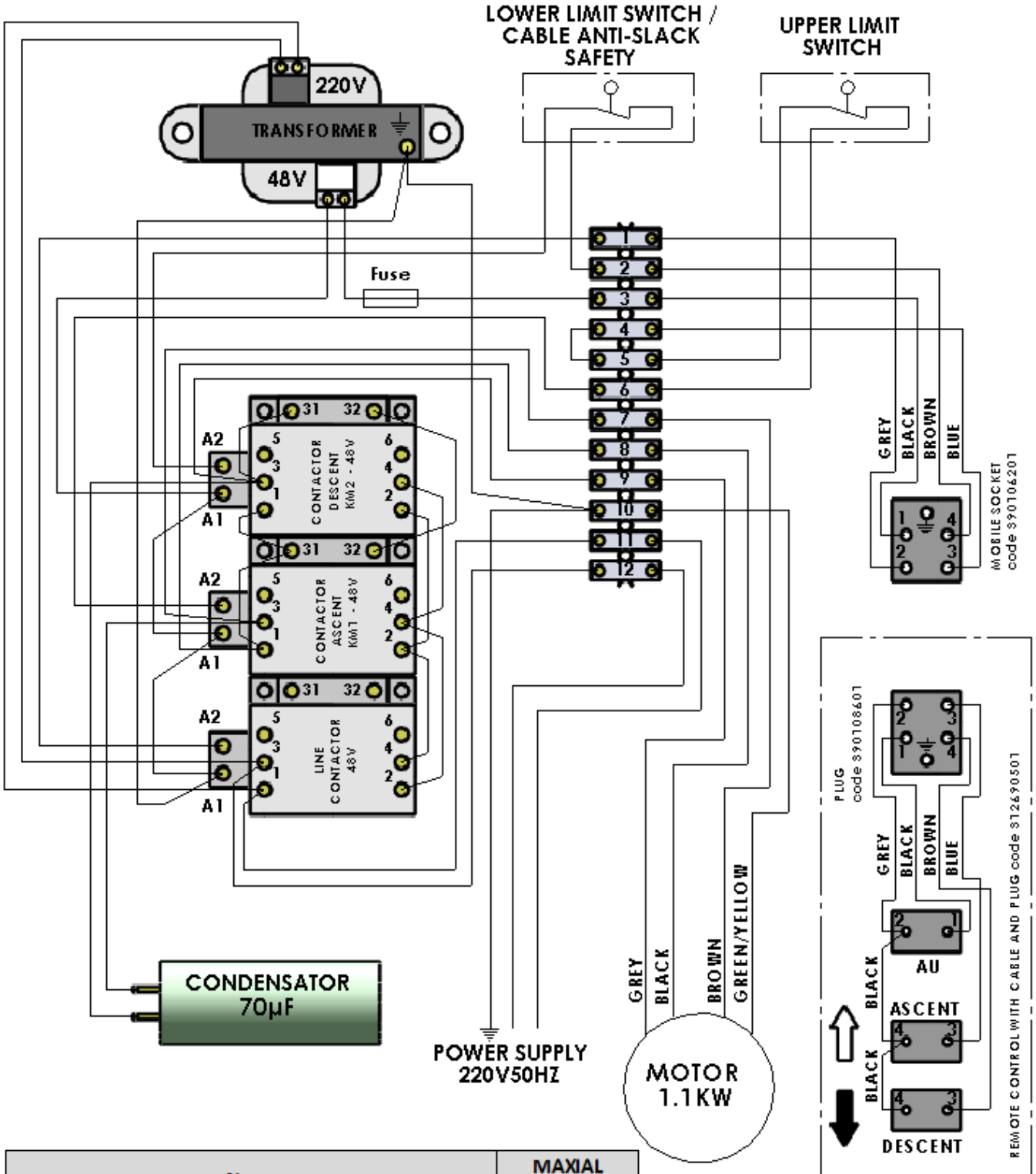
CHECK THE REMOTE CONTROL (low voltage 24V)

* Ensure that the emergency stop button is unlocked then try the winch.
* Ensure that all electrical wires are properly connected to the mobile plug and socket or the socket outlet and that the cable does not have any cuts or tears.
* The winch does not work when the emergency stop button is unlocked:
    - Open the switch box and make sure that all wires are properly connected.
* The winch does not work when the up button is pressed:
    - Open the switch box and make sure that all wires are properly connected.
    - Disconnect the black wire (associated with the red) and the blue wire and connect them together to close the circuit.
    - Connect the power supply and the remote control. If the ascent is working, the electrical contact for the up button is broken, it must be replaced.
* The winch does not work when the down button is pressed:
    - Open the switch box and make sure that all wires are properly connected.
    - Disconnect the black wire (associated with the red) and the brown wire and connect them together to close the circuit.
    - Connect the power supply and the remote control. If the descent is working, the electrical contact for the down button is broken, it must be replaced.

This remote control is the same for all MAXIAL hoists.
If the remote control is replaced on an old version of the winch, it can be delivered complete with cable, plug, female mobile plug and cable diagram.

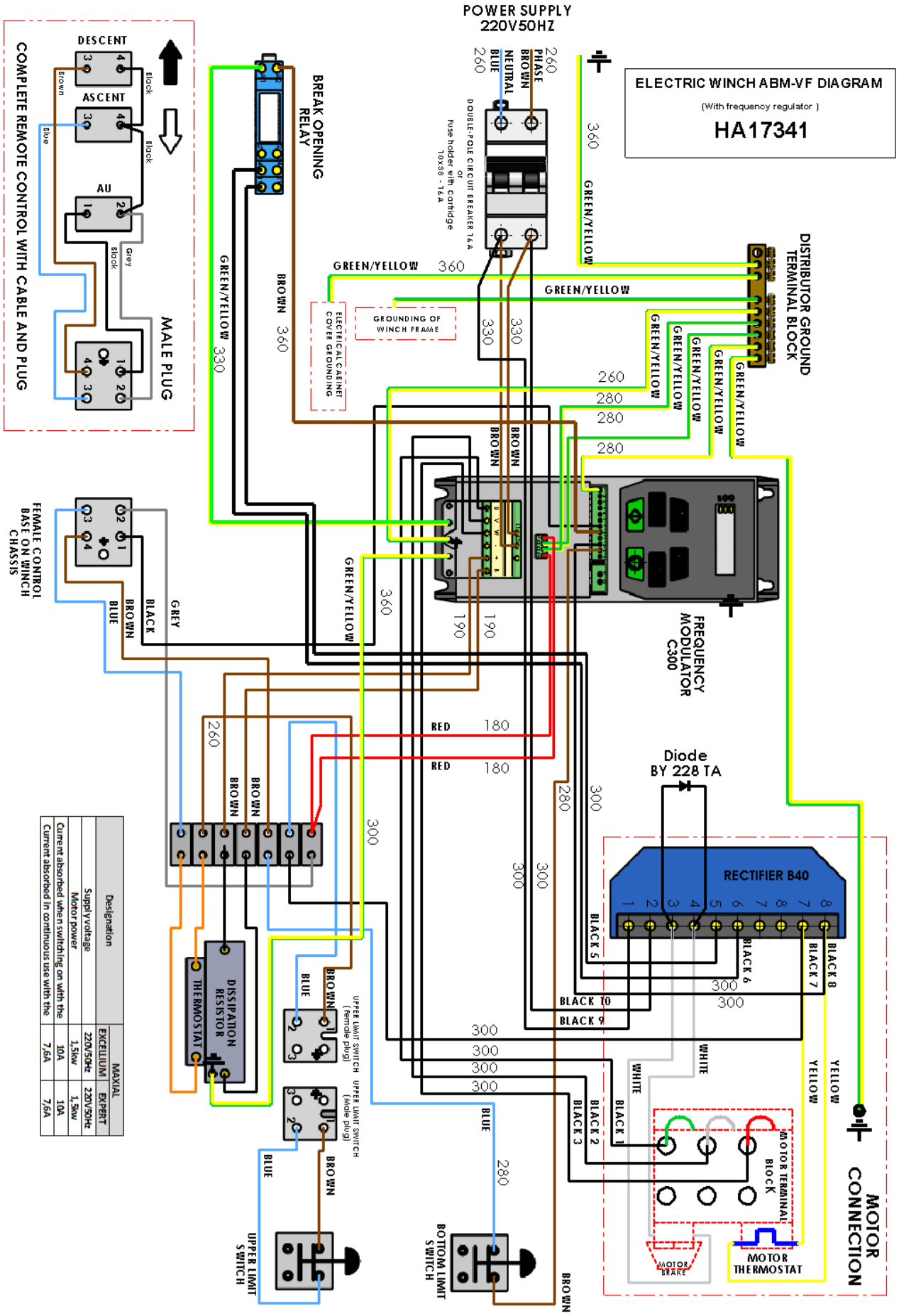
Spare parts must be ordered through a HAEMMERLIN reseller or retailer and must include the type, serial number, date and place of purchase of the hoist

ELECTRICAL DIAGRAM FOR THE 175 CA WINCH for MAXIAL PREMIUM



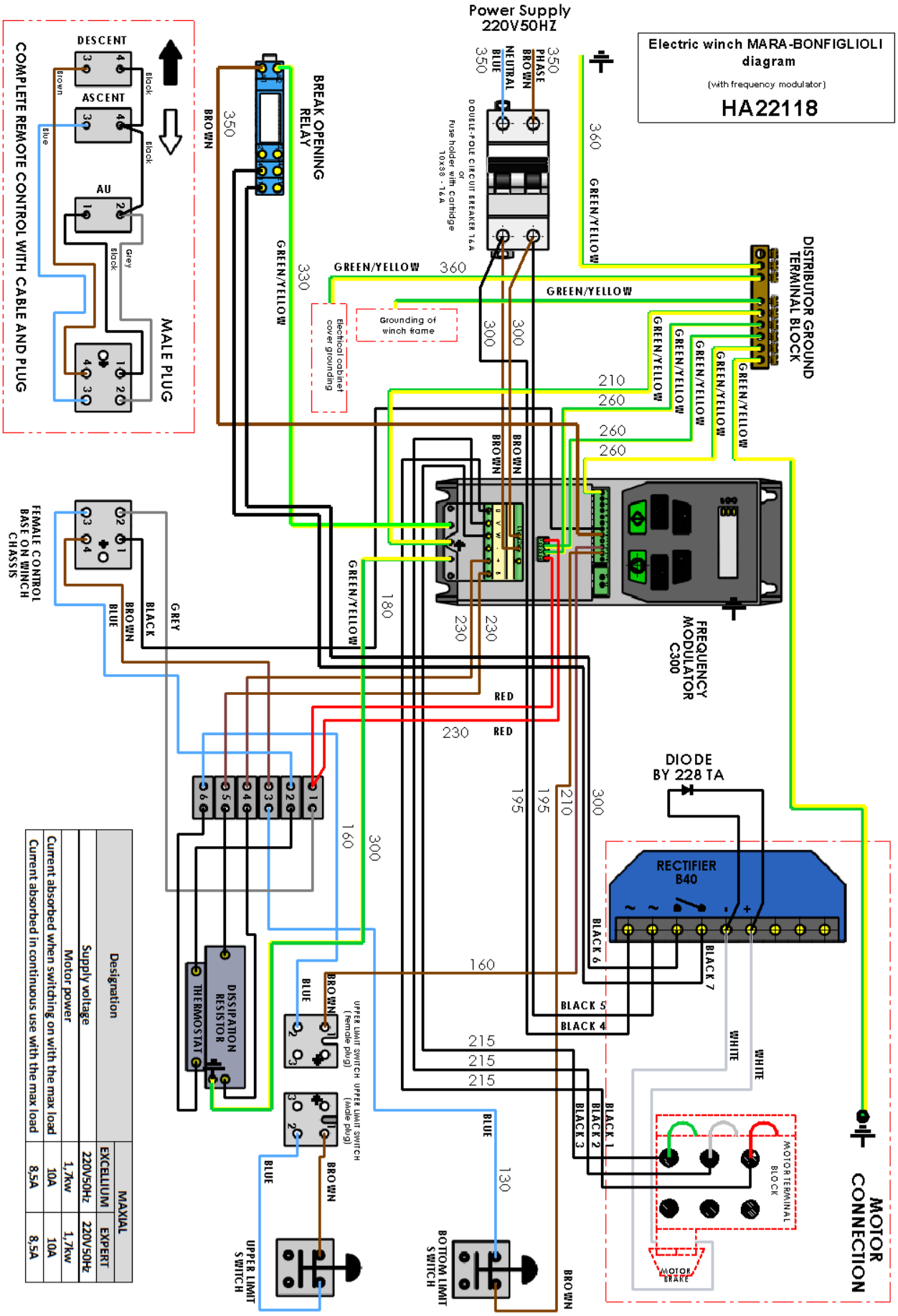
Name	MAXIAL PREMIUM
Supply voltage	220V50Hz
Motor power	1,1kw
Current absorbed when switching on with max load	9,5A
Current absorbed in continuous use with max load	8,2A

ELECTRICAL DIAGRAM OF THE ABM-VF 200/250 WINCHES for MAXIAL EXCELLIUM and EXPERT



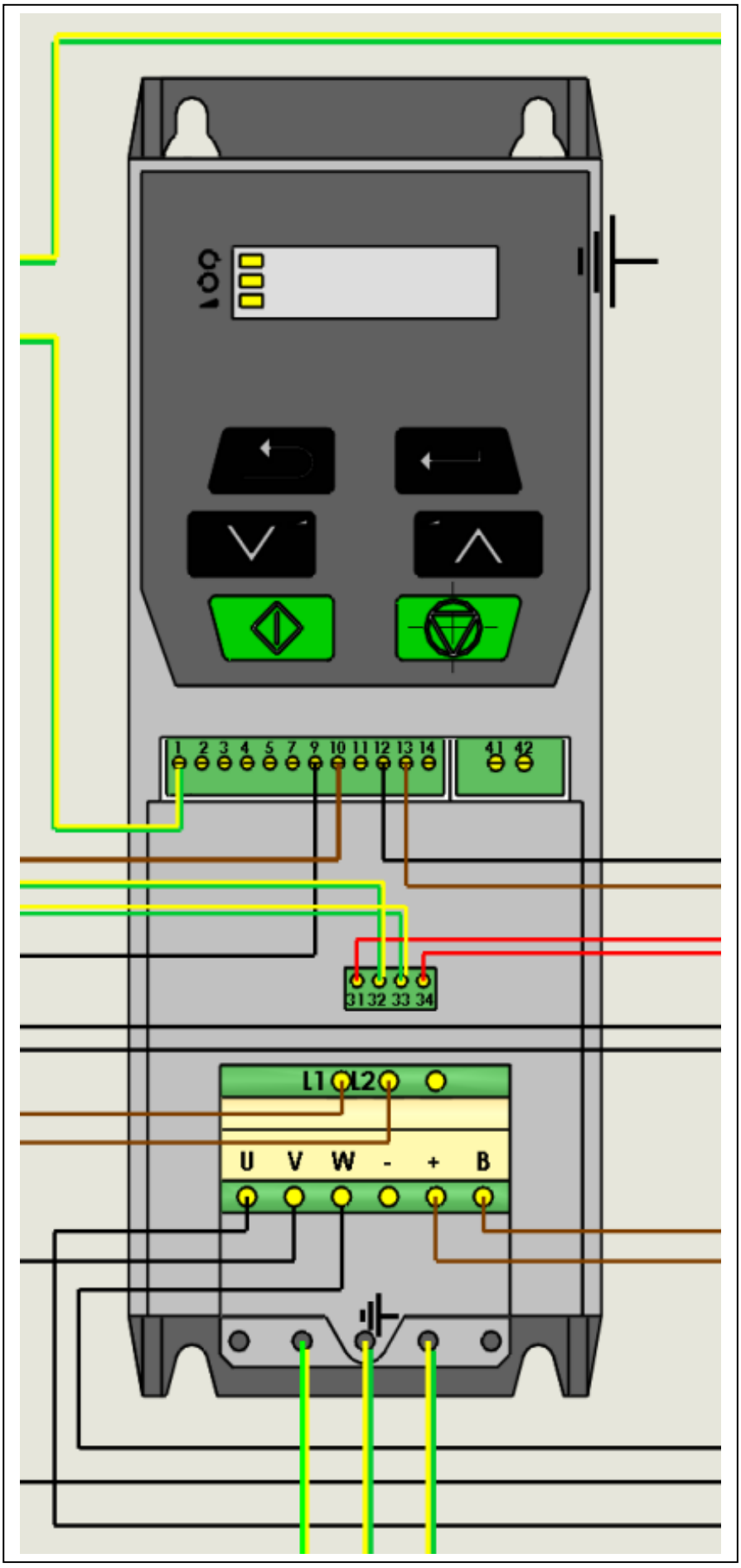
Designation	MAXIAL EXCELLIUM	MAXIAL EXPERT
Supply voltage	220V/50Hz	220V/50Hz
Motor power	1,5kw	1,5kw
Current absorbed when switching on with the	10A	10A
Current absorbed in continuous use with the	7,6A	7,6A

ELECTRICAL DIAGRAM OF THE MARA 200/250 WINCHES for MAXIAL EXCELLIUM and EXPERT



Designation	MAXIAL EXCELLIUM	MAXIAL EXPERT
Supply voltage	220V50Hz	220V50Hz
Motor power	1,7kw	1,7kw
Current absorbed when switching on with the max load	10A	10A
Current absorbed in continuous use with the max load	8,5A	8,5A

DETAILS OF ELECTRICAL CONNECTIONS TO THE FREQUENCY CONVERTER



GUARANTEE FORM AND/OR AFTER SALES SERVICE

RESELLER / RETAILER:	**USER/CUSTOMER:**
----------	----------
CONTACT: ----------	**CONTACT:** ----------
POST: ----------	**POST:** ----------
Tel.: ----------	**Tel.:** ----------
Fax: ----------	**Fax:** ----------
Email: ----------	**Email:** ----------

Dear customer, You would like to have a HAEMMERLIN product repaired. Please provide us with the following information:

Material ☐ Hoist for construction sites ☐ Frame winch

Type of machine: ----------

Serial number: ---------- (essential for correct identification)

Year of manufacture of the machine: ----------

State: ☐ New ☐ Used but generally good condition ☐ Damaged

Describe the defect or type of problem encountered, specifying the conditions of use:

Desired action:

☐ Revision or repair of equipment under guarantee at our workshop

☐ Revision or repair of equipment not under guarantee at our workshop

☐ Request for exchange of parts under guarantee

Part reserved for Haemmerlin

Coverage under guarantee: ☐ Accepted by CDH ☐ Denied by CDH ☐ Comments:

Quote for revision / repair: Accepted by the customer Rejected by customer ☐ Comments:

Return of the materiel: ☐ In good condition ☐ In poor condition ☐ Comments:

Name of the head of the workshop:

Date:

Signature: