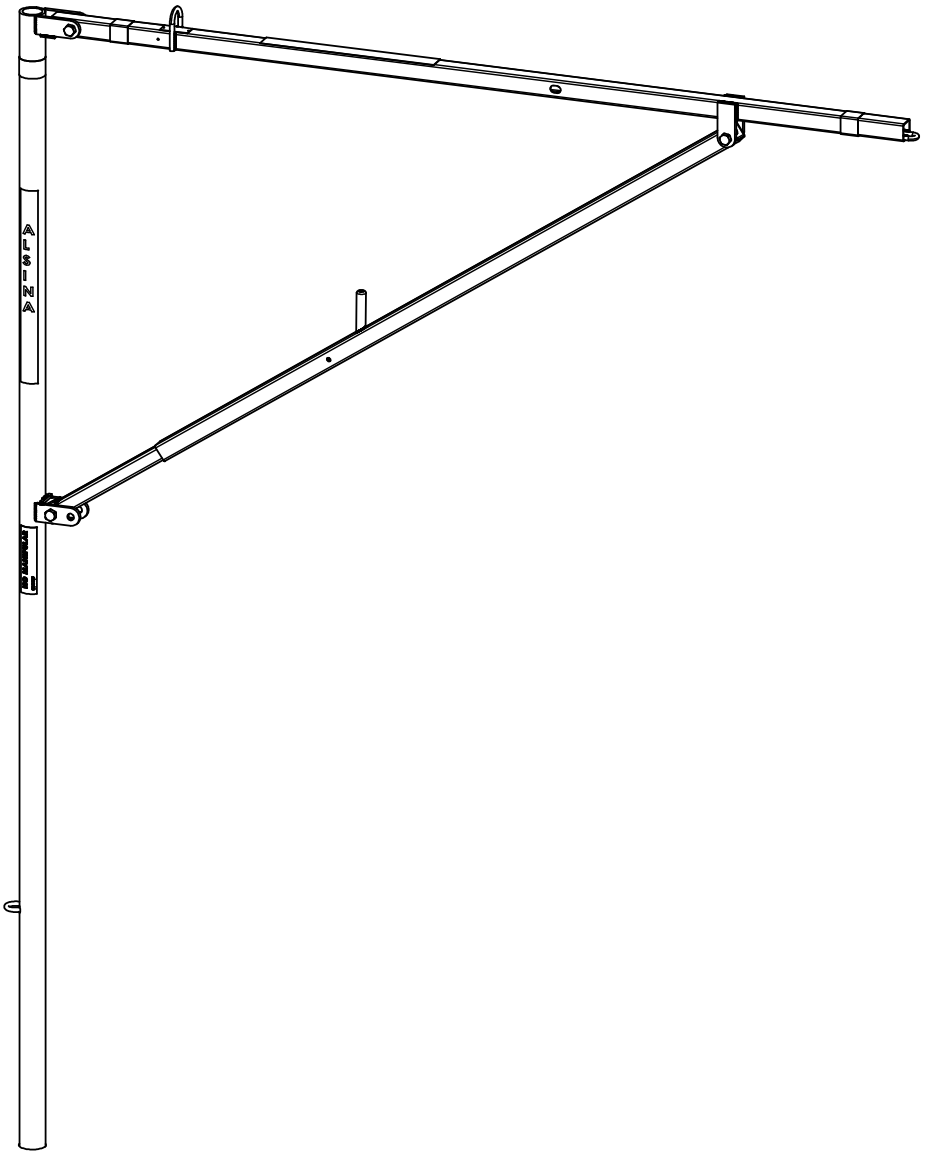
Alsína

ALSIPERCHA SYSTEM

CE 0158 - EN 795:2012 B / D / E

Assembly, Use and Safety Instruction Manual



Introduction

Alsina's instructions for installation, use and safety are intended as a guide to the procedures required for safe and correct assembly, disassembly and use of formwork systems under normal conditions, in line with the standards commonly accepted on work sites. Any specific work circumstance falling outside these standards may require them to be adapted. When in doubt, do not hesitate to contact one of our technical departments, anywhere in the world.

The instructions in this document are intended to explain to users and technicians how the system works; they should ensure correct preparation and use of the equipment on site. Consequently, there will be references to general standards that any professional user should be familiar with. Thus, it is best not to reproduce them in this manual, since any modifications to these standards would lead to discrepancies between the standards and the manual and could cause confusion. Users should always refer to the latest version of the standards in force.

Therefore, the references in this manual in no way annul, replace or prevail over:

1- Standards and regulations on prevention of risks in the workplace specific to a country or region.
2- The instructions in the specific Health and Safety Plan for the works.
3- Safety instructions in the evaluations and plans applying to specific work functions in a company.
4- Technical orders and instructions specific to particular stages of the works, issued by the technical directors, the health and safety officer, the foremen and/or Prevention Resources.

Throughout the project, users shall respect, at all times, the specific laws, standards and regulations of the country or region related to prevention of risks in the workplace and any other legislation applicable to each case and, if necessary, supplement the instructions and adapt to other Work Safety Measures.

It is the customer's responsibility to prepare, document, implement and review the risk evaluation for the construction work. This documentation provides the basis for the evaluation of specific risks in the works, and Alsina's Instruction Manuals may in no case be regarded as a substitute.

Sets of vertical formwork equipment, as systems, are made up by joining different components. As far as possible, drawings and diagrams have been included as an aid to understanding these instructions. All personnel working with these products should be familiar with the contents of this document and the safety instructions therein.

The illustrations in this manual refer, in part, to different phases of the assembly process. Customers should ensure that they have a copy of the assembly and operating instructions, supplied by Alsina, and that these are known to and available to users on site.

Apart from the assembly and operating instructions, each chapter includes a series of safety recommendations. It is important that these are observed. However, these recommendations are neither exhaustive nor definitive, and should they not coincide with the indications in the Health and Safety Plan or its equivalent according to local legislation, the latter shall prevail.

If there are persons who cannot read the documentation or have difficulty doing so, they must follow the customer's instructions and indications.
Should you have any questions regarding the contents of this manual or any suggestions as to how it can be improved, please address your comments to your Alsina Marketing Technician or through our website: www.alsina.com

Info In order to obtain the best performance from its formwork systems, Alsina continuously updates the assembly and operation instructions for its products. For further information, contact the Alsina Marketing Technician in your area. The locations of the Alsina Group's Sales Network are available at www.alsina.com, or you can e-mail us at alsinainfo@alsina.com

Symbols used in this document:

Information
Information on a section of the assembly and use instructions, or additional information on the system that users and works technicians should take into account.

Warning/Precaution/Danger
Essential information that the reader must be aware of; disregarding this information may lead to material damages or serious personal injuries.

Advice
Indicates recommendations and advice for use, assembly, and safety.

ISO 9001:2015 Certification

The Alsina Group is ISO 9001:2015 certified.

The Alsina Group has been granted the ISO 9001:2015 certification for their sales and rental service of concrete formwork equipment.

The certificate was granted by BVQI, an institution of renowned prestige and worldwide experience, under UKAS accreditation. The scope of this certification confirms the maturity and efficiency of our Quality Management System for the design, manufacture, marketing (sales and rental) and maintenance of concrete formwork equipment, provision of scaffolding erection services and implementation of collective protection systems, while ratifying the company's commitment to continuous improvement.

Alsina is possibly the only company in the formwork business with the ISO 9001:2015 certification for: “Design, fabrication, engineering services, and commercialization (sale and leasing) of concrete formwork equipment. Provision of assembly services for scaffolding and formwork equipment. On-site implementation of collective protection elements”.

ISO 9001
BUREAU VERITAS
Certification
Encofrados J.Alsina, S.A.

Alsína

Read carefully through this user instruction before using the product. In case of questions and uncertainties, please contact Alsina for support

Safety instructions

The Alsipercha is only intended for the purpose stated in this user instruction, any other use is not recommended. The Alsipercha is a personal fall protection anchor device, used to protect workers operating at height and if used incorrectly, there is a potential risk of accidents to both the user and other people in the vicinity. Please read this manual carefully before any usage.

- Accidents and dangerous situations may arise by the use of combinations of equipment in which the safe fuction of one item is affected by, or interferes, with the safe function of another.
- Under no circumstances shall the product be used as a makeshift crane or lifting/lowering device.
- Under no circumstances shall any item other than those provided with the system be used either in replacement or through preference as this may affect the performance of the product.
- Care should be taken in the transportation of the product between uses and locations. If any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- Care should be taken in the installation of the product and if any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- The site location where the Alsipercha is being used should have a rescue plan in place, in the event of a fall arrest incident.
- The device is only intended for use by maximum 2 users at a time, under no circumstances shall multiple persons be attached to the device.
- If a crane is used as lifting device, be aware of the movements made by the crane and keep workers at a safe distance.
- The usage of the Alsipercha is intended to be used within a zero factor fall arrest system. Make sure that the anchorage is always overhead and the self-retracting lifeline is taut between the anchorage point and the worker.
- The maximum vertical deflection of the anchor point that can occur during service is 1 user = 0.49 m / 2 users = 0.86 m.
- In case that Alsipercha is re-sold outside the original country of destination, it is essential that the reseller provides user instructions in the language of the country in which the system is to be used.
- When referring to included components not produced by Alsina or official distributors, please refer to the specific user guide / manual for that specific item. When using a retractable fall arrest block, the certification of this product is only valid when the prescribed block is used, hence it is tested and approved in combination with the Alsipercha.
- PFPE that is used together with the Alsipercha must be CE-certified and approved in the specific country of use.
- It is not recommended to use the products stated in this user instruction if pregnant, suffering from cardiovascular disease, affected by alcohol or drugs or other health issues that might affect your mental or physical capacity.

Always check products and equipment before use

Check all component parts of the Alsipercha before assembly. Never use damaged or rusty materials, as this can affect safety. Refer to the check list in the Maintenance chapter which must be followed prior to use.

The system must be withdrawn from use inmediatelly, if any doubt arise about its condition for safe use.

Never combine products

It is not recommended to install, combine or interconnect products other than those supplied by Alsina or official distributors.

Always use Personal Fall Protection Equipment

Personal Fall Protection Equipment (PFPE) must always be worn during assembly and dismantling when a risk of falling exists. This also applies to work carried out from MEWPs (Mobile Elevating Working Platforms).

The worker must only use full body harnesses according to EN 361, with an arrest attachment point marked with (A).

Remember

- Plan the fall prevention at an early stage, this will benefit everyone.
- Use only safety-checked products.
- Restrict access below and around the installation and working area to prevent injury to others from any fall hazard.
- Use tools designed for the type of work to be carried out.
- Keep the installation area in order.
- A safe workplace is a good workplace.
- Many fall accidents occur from a low height.

Fall clearance

Note that it is essential that enough free distance is verified to closest underlying object, see Figure 1 below:

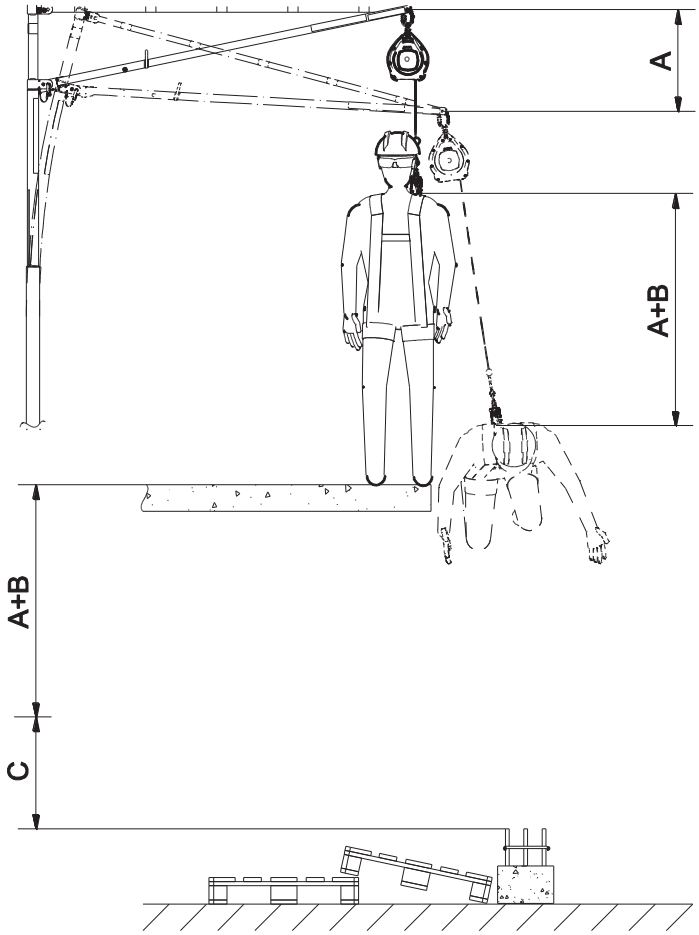


Figure 1. Explanation of fall clearance

A: 1 user 0.49 m Vertical deflection of the Alsipercha anchor point.
2 users 0.86 m

B: X Braking distance of the SRL.
Please refer to the manufactuer`s user manuals for specific value.

C: 1.00 m Safety distance

Total required fall clearance = A+B+C

Alsipercha (Alsina Fall Arrest System)

Safety system designed to prevent falls from a height during the formwork boarding process.

Alsipercha

A safety system, especially useful for PERIMETERS, or during all work associated with decking for horizontal formwork operations. The system ensures completely safe conditions while installing: boards, safety handrails, gallows-type safety nets, formwork risers and all activities involved in formwork assembly where there is risk of falling from a height.
Easy to assemble and use, does not require outside installers.

Features of the system

- Allows the worker to work safely covering an area of 125 m^2 and moving within a radius of 6.5 m around the column.
- Inverted “L” shaped steel structure measuring 2.5 m long and 4.3 m high (3.5 m when attached to the column).
- Metal structure weighing 80 Kg, made of high quality steel (elastic limit 42 - 46 Kg/mm^2; breaking strength 61 - 76 Kg/mm^2).
- Retractable fall arrest block measuring 4m (SRL+lanyard) maximum length, or optional with SRL 6.0 m or 6.5 m maximum length.
- Alsipercha housing steel tube measuring 85 cm long.
- To be moved by crane.
- With a wide range of accessories for use in any building site situation, ensuring safety at all times.
- A system designed for column heights up to 8.5 m (this requires use of the hook accessory).
- A built-in energy-absorber device reduces the impact forces transmitted to the structure and to the user.

Info. The system and its components must be used by competent, qualified personnel.

Info. The system and its accessories must be inspected by competent, qualified personnel:

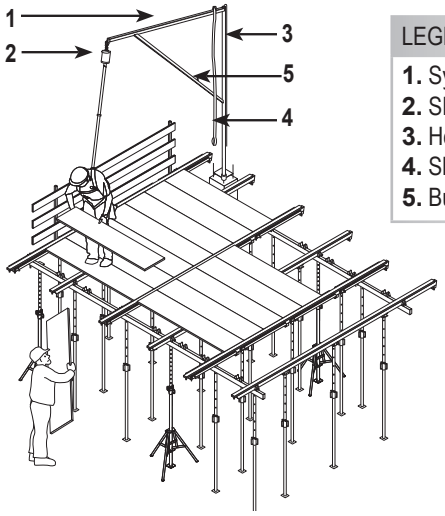
- Before first use and subsequent use.
- After the system is activated by a fall.
- At regular intervals (at least once a year). The inspection records may be called for. Certain individual components may require inspection at shorter intervals.
- Never use the equipment if wear, rust or unauthorized repair attempts are detected in any part of the system.
- Do not use the system for any use other than that which it was designed for.
- Use approved harnesses only.
- Do not use or fasten any components or accessories that have not been supplied by the manufacturer.
- The user must assess the risk involved before using the system

Info. The illustrations in this assembly and safety manual are guidelines and, at any event, they may not reflect all the possible assembly formats.

Limitations of the system

- The structure on which the system is mounted must be capable of bearing the weights indicated.
- The maximum working radius when the worker is anchored to the system with the safety harness is 6.5 m. Do not attempt to extend this working radius with ropes or other such methods.
- The maximum number of users connected simultaneously to one Alsipercha is 2 (two).
- During the use of Alsipercha with housing tube (during formwork stage), the maximum distance between the 2 users connected simultaneously to one Alsipercha will be: 1 (one) meter. Increasing this distance may cause injuries to users due to the "pull" effect.

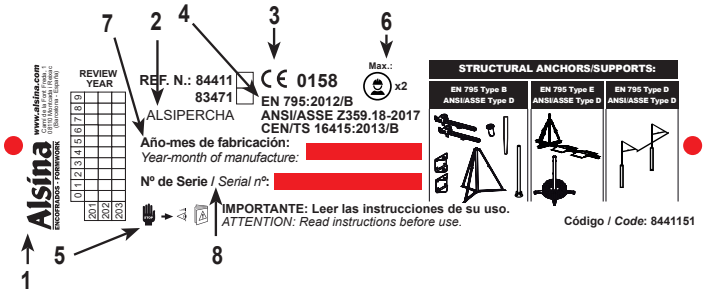
System components



LEGEND

1. System body
2. SRL
3. Hook
4. Sling
5. Built-in energy-asborber

Alsipercha is CE certified in accordance with the DIN EN 795 type B / D / E, and compliance to ANSI/ASSE Z359.18-2017.

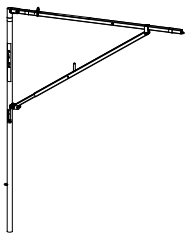


LEGEND

1. Manufacturer
2. Name of the product
3. Identification number of the notified body; DEKRA Testing and Certification
4. Compliance standard
5. Pictogram: read user instruction before use
6. Number of users allowed
7. Production year
8. Serial number

Component Description

Info. In all codes the second digit can be either 3, 4, or 7.



ALSIPERCHA CE / ANSI

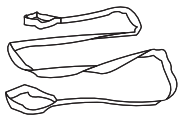
Description: Overhead anchor point with built-in energy absorber, anchored in the column with a working radius of 6.5 m that allows access to a surface area of 125 m^2.

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

HOOK

Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.

Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



SLING

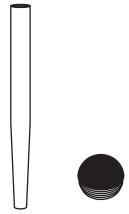
Description: An essential component used to move the system with a crane, to take it to the column, or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

LEVELLER

Description: Component that is introduced into the housing tube, in order to ensure its verticality and prevent the Housing Tube from rising under the pressure of the concrete.

Code	Dimensions (mm)	Weight (kg)
83416	1,005 x Ø70	3.96



HOUSING TUBE

Description: Component that is sunk into the concrete column and houses the Alsipercha fall arrest system.

Code	Dimensions (mm)	Weight (kg)
84410	873 x Ø76	2.71

RETRACTABLE DEVICE

Description: Fall arrest block that stops in case of fall.

Code	Dimensions (mm)	Weight (kg)
8441201	2,500	1.599
84439	3,500	1.850

HARNESS EXTENSION

Description: Component joining the worker to the retractable device.

Code	Dimensions (mm)	Weight (kg)
84423	1,500	0.31
84474	500	0.15

HARNESS

Description: Device anchoring the worker to the Alsipercha fall arrest system.

Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1

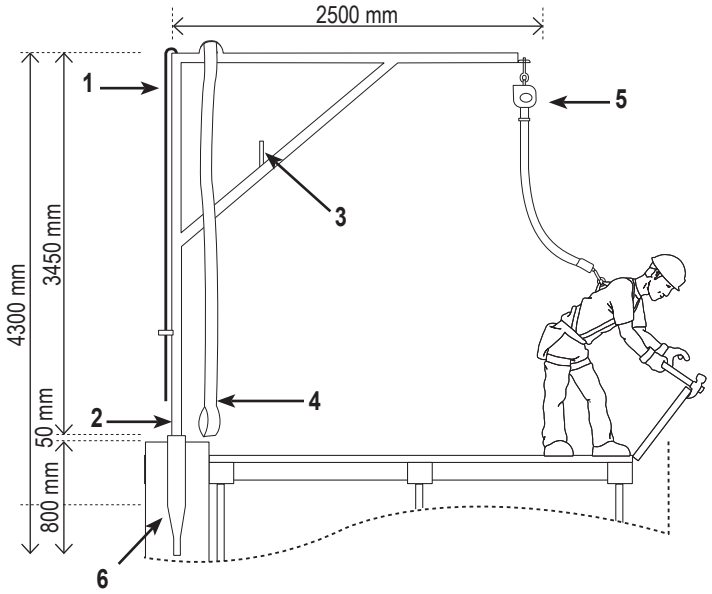
CARABINER-EN 362

Description: connects SRL to Alsipercha and harness extension to the user harness

Code	Dimensions (mm)	Weight (kg)
8341203	100	0.50

Assembly process

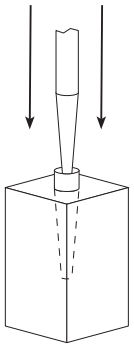
Step 1/4_System components



LEGEND

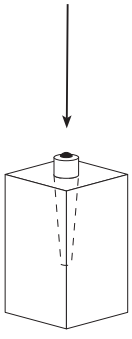
1. Hook (accessory for changing the anchor point)
2. Alsipercha Body (the main body that turns through 360º and allows the worker to work freely)
3. Pivot (used to anchor the hook)
4. Sling (used to move the system with a crane)
5. Retractable device
6. Housing tube

1.- Immediately after pouring the concrete columns, place the housing tube in the center of the latter, protruding 50 mm. This tube will later accommodate the Alispercha column.



Detail of the placement of the Fall Arrest System in the housing tube

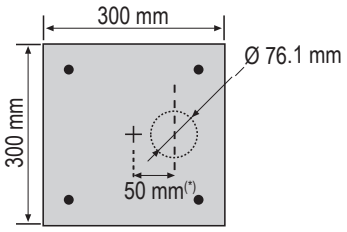
2.- Use the leveller to make sure that the tube is vertical and does not rise up. The column is strengthened by the housing tube.



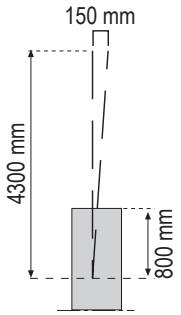
Leveller detail.

Technical details for arranging the housing tube. Housing tube tolerances.

1) Tolerance in diversion, with respect to the centre of the column



2) Tolerance in vertical diversion

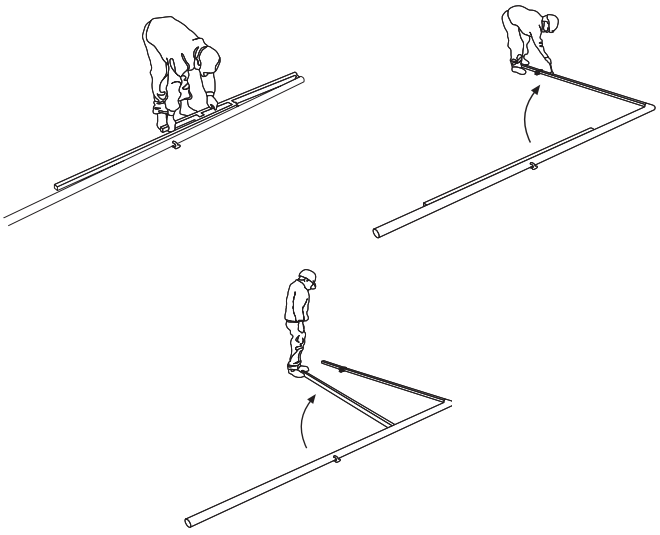


(*) This tolerance will vary depending on the column section. If using the Alsipercha system in columns with a section smaller than 30 cm, cracks may appear in the concrete. In this case, consult the structure client.

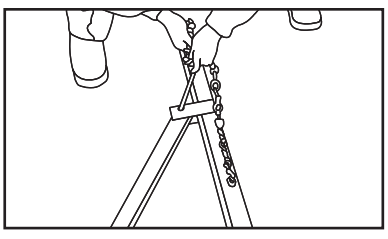
Warning - When 2 users are connected simultaneously to one Alsipercha, the maximum distance between them will be 1 (one) meter. Increasing this distance may cause injuries to users due to the "pull" effect.

Step 2/4_System assembly

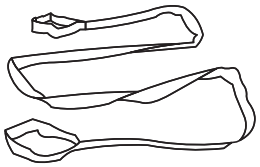
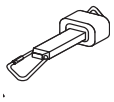
1.- Open out the Alsipercha Body.

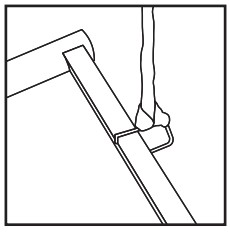


2.- Use the pin to fix the Alsipercha Body.



3.- Install the sling and the retractable device.

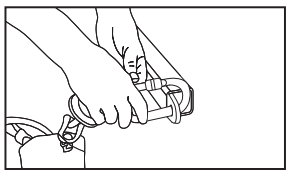
Sling	Retractable device
	



Detail of sling installation:
To move the Alsipercha to its location on the column,
and to remove it once hazardous operations have been completed.

Precautions:

Warning. Precautions:
- Use the slings supplied by Alsina.
- Do not allow loads to rest on the sling if they could damage it.
- Protect the sling against adverse weather conditions.
- Each sling should be examined before use. Remove the sling if it presents cuts, especially at the edges.
- Place the sling in its correct position (bight angles no greater than 120º and stable load).



Detail of the installation of the retractable device with the fall arrest system.
It is important to close the clasp properly.

Check:

Info. Before using the retractable device, check:
- That the strap winds and unwinds completely without difficulty.
- That the locking function works correctly, by jerking the strap.
- That the entire system is in perfect condition, with no cuts or loose threads.
- That the metal parts are not rusted and the snap hooks work and close correctly.

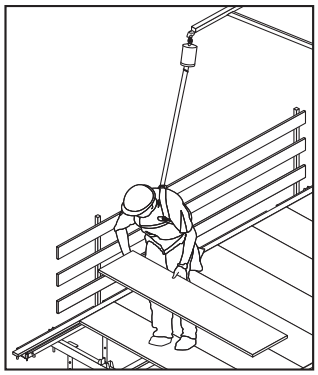
Step 3/4_Installing and using the Alsipercha

1.- Use a crane to place the Alsipercha Body into the housing tube.

2.- 36 hours after pouring the column concrete, the Alsipercha can be used to: install boards, handrails, risers,...

When all the boards, handrails, netting for perimeter and openings have been put in place and the perimeter boards have been nailed and watered (dry climate), the Alsipercha Body can be removed.

Now we can start the panelling process from one end of the floor, working in an assured position with a radius of 6.5 m., which is equivalent to about 125 m^2.

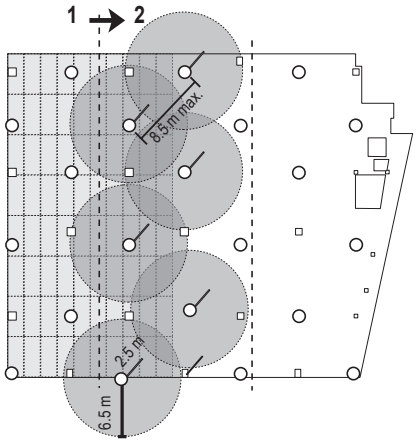


It is possible to extend the range of action of the Alsipercha, but following a specifi c alternative work sequence. See page. 10

System limitations:
- The maximum number of users in each system will only be 2 (two).
- The structure where the system is assembled must be sufficiently resistant.
- The maximum action radius, once the system is anchored, is 6.5m. Do not try to widen this radius by lengthening the retractable system to which it is tied

Precaution
- ONLY use slings supplied by Alsina.
- Do not keep weight hanging from the sling, as this may damage it.
- Protect the sling from inclement weather conditions.
- Each sling must be checked before being used. Reject it if it has any cuts, particularly if the cuts are at the ends.
- Place the sling in its correct position of use and the load stable.

Example of onsite layout

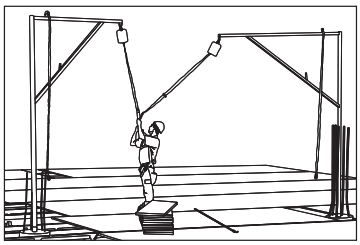


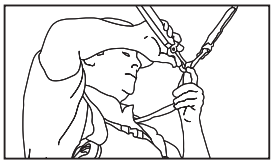
LEGEND	
○ Columns with a housing tube	**1.-** Starting the boarding of the floor
Alsipercha body - 2.5 m Working radius - 6.5 m Distance between columns - 8.5 m	**2.-** Direction of progress during boarding process

To facilitate use of the Alsipercha, we recommend prior planning of the working area where it is going to be used.
Thanks to advanced CAD systems, we can know where to place the Alsiperchas and how many are needed to optimize their use within the working radius.

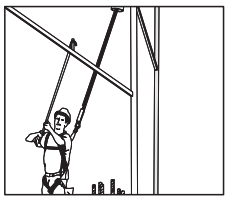
Info. A set of approximately 6 Alsipercha units are sufficient for complete formwork of a floor measuring approximately 500 m^2.

Step 4/4_Repositioning the Alsipercha



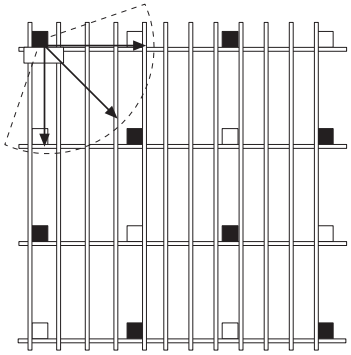


The Alsipercha allows the worker to change anchorings before unhooking from the first Alsipercha Body, so safety is maintained at all times.

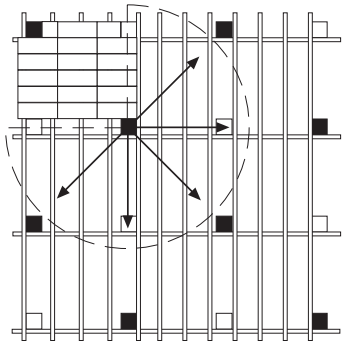


Use the hook to do this if the next Alsipercha is positioned so that the worker cannot reach to anchor themselves.

Working with the Alsipercha System



First, locate the embedded tubes in the columns where the Fall Arrest System is going to be accommodated and then begin the boarding process from that point.



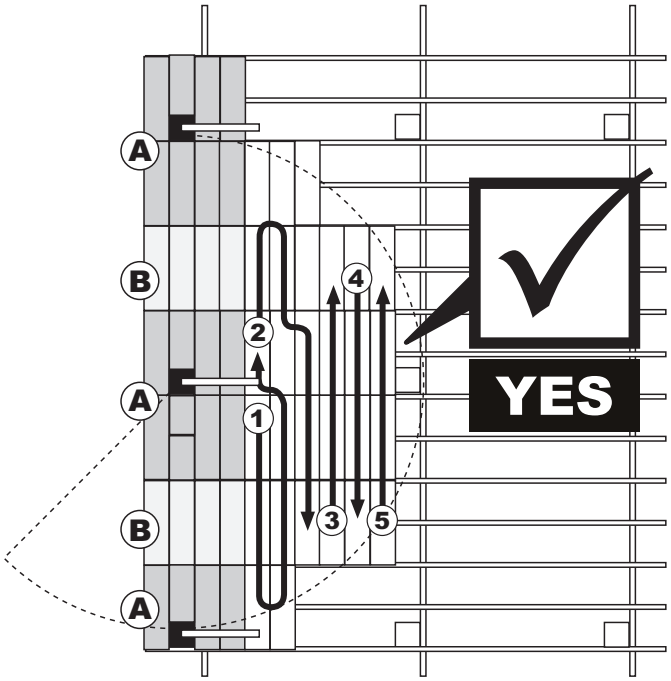
Then begin the boarding process from one end of the surface and work safely with a radius of 6.5 m, which equals approximately 125 m^2.

Info. Rescue of worker after a fall: It is important that when workers work with the Alsipercha Fall Prevention System, they are not alone. In this way, in the event of a fall, the other worker can rescue the other, hopefully within a few minutes, in order to prevent injury due to loss of blood circulation in the legs. The rescuing worker, anchored to a safety point uses a hook to carry the trapped worker to the panelling area, in order to be able to stand up.

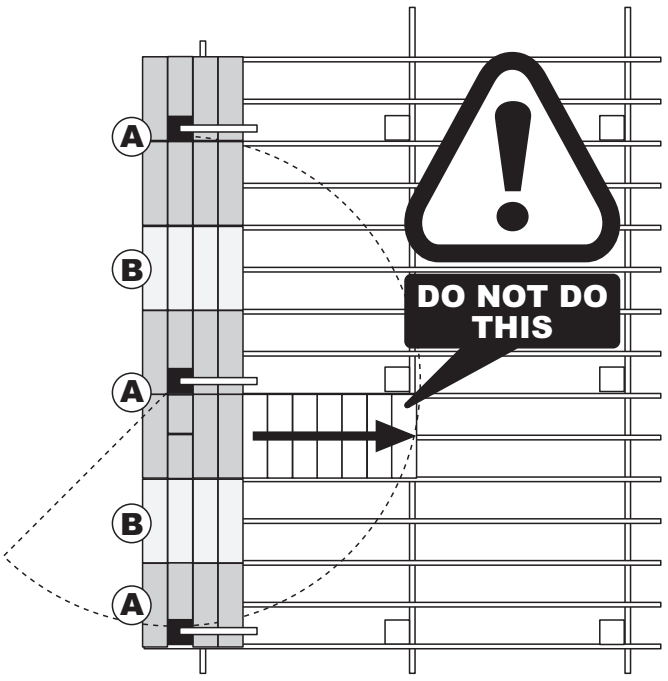
Extended user equipment for Alsipercha

Proposed alternative method of work, whilst using a 6.0 m retractable block, with a 0.5 m extended back anchorage.The extended user equipment will allow protected access along this leading edge for up to 8.5 m in either direction.

The protected area covered by a single Alsipercha unit can be extended by using an alternative set of user equipment, however this MUST be used in a controlled and disciplined manner. Failure to follow the revised working method in detail, could result in a pendulum fall, or in an increased fall distance to the level below, both could result in injury or even death.



By replacing the Retractable Element (8441201 / 84439) and the Harness Lengthener (84423 / 84474) with a Fall Arrest Block (EN360 Compliance) of 6.5 m, or combination of 6 m + 0.5 m extender, the user can increase the distance forward from the Alsipercha body that is protected.



Important.
It is extremely important that this increased protected area, is decked in a progressive, leading edge fashion working forwards from the Alsipercha body, in the priority sequence as shown beside.

Employment and Loading of the system

Table of minimum concrete strengths

Shown below are the time periods for use (the time between pouring column concrete and when the Alsipercha can be used) depending on ambient temperature and column cross-section.

The results shown below are from tests performed with Alsipercha in columns measuring 30 x 30 cm^2, 25 x 25 cm^2 and 15 x 40 cm^2.

				AMBIENT TEMPERATURE				
Type of concrete	Column section (cm^2)	Min. compression value (Mpa)*1	Indirect tensile value (Mpa)*1	5ºC	10ºC	15ºC	≥20ºC	
Any type of structural concrete (HA-25 or superior)	30 x 30 (or superior) ***2**	3.27	0.37	28 h	23 h	19 h	15 h	Time periods for use in hours
	25 x 25 ***3**	4.72	0.52	30 h	24 h	20 h	16 h	
	15 x 40 ***3**	5.70	0.62	32 h	26 h	21 h	17 h	

(*1) When using the system for the first time.

(*2) For sections of 30x30 cm^2 or greater, the system allows for a maximum deviation in the position of the housing tube of 50 mm from the center of the column.

(*3) For sections of 25x25 cm^2 and 15x40 cm^2, the system allows for a maximum deviation in the position of the housing tube of 10 mm from the center of the column. Based on the tolerances allowed by the Spanish EHE Standard for deviation in column cross-sectional dimensions.

Info. Study performed by the Universidad Politécnica de Valencia.

Report by the Association of Building Consultants (ACE)*

1. BACKGROUND AND PURPOSE OF THE REPORT

…the checks to assess the structural impact of this system, which is the subject of this report, will be carried out in accordance with the following regulations:

- EUROCODE 2: Design of concrete structures. Part 1-1: General rules and rules for buildings. **UNE-EN 1992-1-1:2013**
- EUROCODE 3: Design of steel structures. Part 1-1: General rules and rules for buildings. **UNE-EN 1993-1-1:2008**

…

5. SUMMARY AND CONCLUSIONS

In the case of a C25/30 concrete column, placing an S-235JR tube of the dimensions specified in point 2 of this report inside it does not imply any reduction of its resistant characteristics, as demonstrated in the previous point.

As a summary, and for different concrete and steel resistances, two tables (compression and shear) are shown with all possible combinations:

COMPRESSION

	Steel		
Concrete	S235 JR	S275 JR	S355 JR
C25/30	1.240	1.452	1.874
C30/37	1.034	1.210	1.562
C35/45	0.886	1.037	1.338
C40/50	0.775	0.907	1.171
C45/55	0.689	0.806	1.041
C50/60	0.620	0.726	0.937

SHEAR STRESS

	Steel		
Concrete	S235 JR	S275 JR	S355 JR
C25/30	1.802	2.108	2.722
C30/37	1.538	1.800	2.324
C35/45	1.344	1.572	2.030
C40/50	1.193	1.397	1.803
C45/55	1.074	1.257	1.622
C50/60	0.977	1.143	1.475

It is observed, for example, that for a steel S-235JR such as that of the current tube, in concrete with a characteristic strength equal to or greater than 35 MPa, the safety coefficient is lower than the unit. Therefore, in this case and in all those that appear in red in the compression table, the incorporated tube as part of the ALSIPERCHA system supposes a decrease in the resistance capacity of the column. In these cases, once the formwork has been placed and the system is no longer used, the hole should be cleaned and then filled with a GROUT mortar of the same resistant characteristics as the concrete of the column.

We present, for all relevant purposes and based on our firm knowledge and understanding, our opinion which we defer to any other better-founded opinion, in Girona, on July 11, 2019.

Antoni Blázquez y Boya
BLÁZQUEZ GUANTER SLP

Jorge Blasco
A.C.E Technical Commission

Info* The original document consists of 8 pages, and is available to our customers for inspection.

Report by the Universidad Politécnica de Valencia (UPV)*

(.../...)

4.- CONCLUSIONS

- This study analyzes the influence exerted on the behavior of the reinforced concrete columns by the use of the Fall Arrest System developed by ENCOFRADOS J. Alsina, S.A.

(.../...)

Summary and conclusions:

1.- The calculation procedures and software used, has been always applying the European and internationally accepted prescriptions of Eurocodes EC-2 for concrete structures, and EC-3 for steel structures.

2.- This study has been carried out for a small section, the smallest and with less rebarb of those usually used in buildings, so that the relative influence of the hole where the fall arrest system is being inserted, is as large as possible.
This type of supports has been studied for the most common types of concrete in building pillars, from characteristic strengths of 25MPa to 50MPa.

3.- Considering this reduction in the elastic limit of the steel, the Axis-Moment interaction diagrams for the section were calculated without modification and including the tube

4.- The steel tubes usually used by the company, with a thickness of 1.8mm and a steel resistance characteristic of 235MPa, complies for the cases of columns with concrete with characteristic resistance of 25MPa (C25 / 30) and 30MPa (C30 / 37).

These results ensures that there is no loss of resistance for the section, for that thickness of steel tube.

PEDRO ANTONIO CALDERON GARCIA
Firmado digitalmente por PEDRO ANTONIO CALDERON GARCIA
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MANUEL BUITRAGO MORENO
Firmado digitalmente por MANUEL BUITRAGO MORENO
Fecha: 2021.05.18 09:23:08 +02'00'

Fdo: Pedro A. Calderón García
Dr. Ingeniero de Caminos, C. y P.
Catedrático de Universidad

Fdo.: Manuel Buitrago Moreno
Dr. Ingeniero de Caminos, C. y P.
Investigador Postdoctoral

Info* The original document consists of 16 pages, and is available to our customers for inspection.

Disassembly Process

The system is folded when packing it away for storage or moving. There is no need to dismantle its components as they remain attached at all times. The affected areas must be delimited for this task in order to prevent parts from falling suddenly and unexpectedly.

Folding the product for storage or transport

Warning. **NEVER** fold the product from its erect position of use, because it may cause injury.

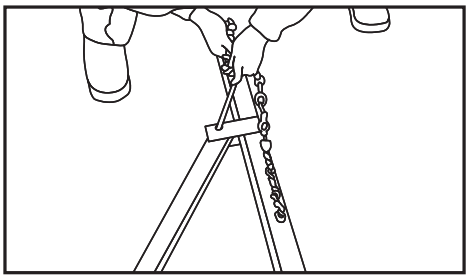
Fold the product in the following order:

- Remove the boat hook accessory from the Alsipercha and place it on the ground or on a stable surface.

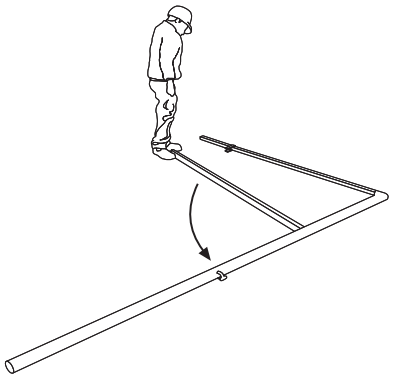
- Remove the Alsipercha from its connection support using auxiliary equipment and place it in a horizontal position on the ground or on a sufficiently stable surface.

- Remove the retractable system connected to the upper horizontal tube.

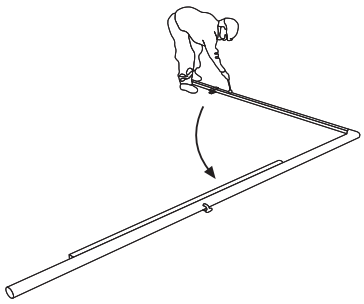
- Remove the diagonal tube connection pin from the upper tube.



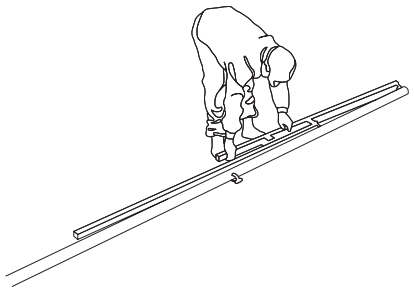
- Fold the diagonal tube until it attaches to the main mast.



- Fold the upper horizontal tube in the same direction as the previous one, attaching it to the diagonal tube.



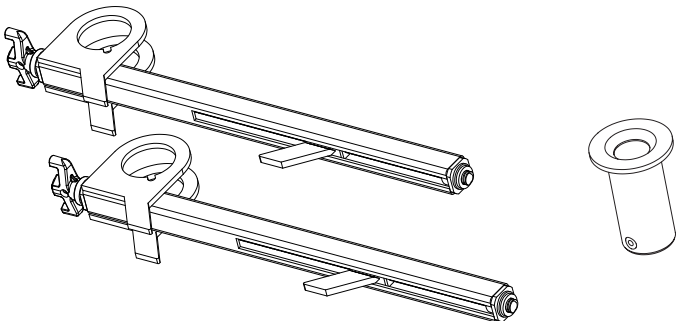
- Insert the safety pin, making sure that the three tubes are perfectly joined and that the safety pin fastens the three tubes.



Assembly process for the column clamps

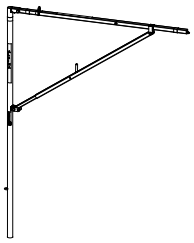
Characteristics and advantages

- Patented product made in steel, proving to be a much more lightweight accessory, easy and quick to assemble, and which only needs a hammer for attachment.
- Designed and tested in compliance to EN:795:2012 and ANSI/ASSE Z359.18-2017.
- It can be attached to steel columns (Sections with IPE, IPN, HEB type wings, etc.) with sections from 120 to 450 mm.
- Only two codes which, once assembled, are inseparable (Integrated Safety)
- Can be assembled by competent works personnel



Component Description

Info. In all codes the second digit can be either 3, 4, or 7.



ALSIPERCHA CE / ANSI

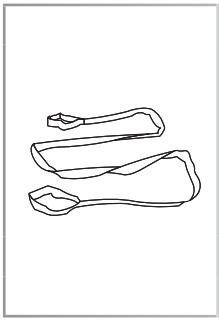
Description: Overhead anchor point with built-in energy absorber, to combine with the column clamps.

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

HOOK

Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.

Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



SLING

Description: An essential component used to move the system with a crane, or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

RETRACTABLE DEVICE

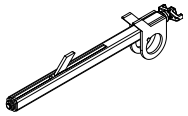
Description: Fall arrest block that stops in case of fall.

Code	Dimensions (mm)	Weight (kg)
8441201	2,500	1.599
84439	3,500	1.850
8441205	10,000	7

HARNESS

Description: Device anchoring the worker to the Alsipercha fall arrest system.

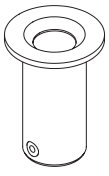
Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1



COLUMN CLAMP

Description: Column clamp to anchor the Alsipercha body to steel wide flange columns

Code	Dimensions (mm)	Weight (kg)
83424	755 x 55	6.27



COLUMN CLAMP SLEEVE

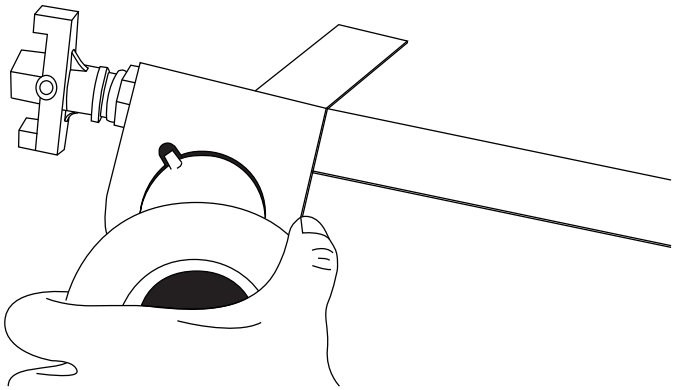
Description: Accesory that serves as housing the Alsipercha main body.

Code	Dimensions (mm)	Weight (kg)
83426	154 Ø65	1.24

Assembly process

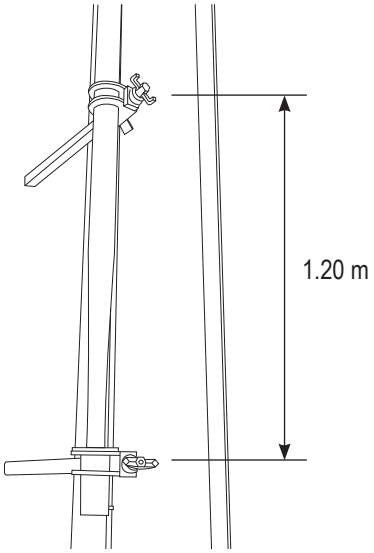
1.- A set of Alsipercha system with column clamps will be made of: 1 Alsipercha body (84411), 2 column clamps (83424) and 1 column clamp sleeve (83426).

2.- The COLUMN CLAMP SLEEVE unit (83426) will be assembled into one of the COLUMN CLAMP (83424), passing the nipple of the sleeve through the grooves of the clamp plate (this solution is called the “labyrinth”, and once the SLEEVE is assembled in the clamp it prevents them from separating from one another). See picture below.

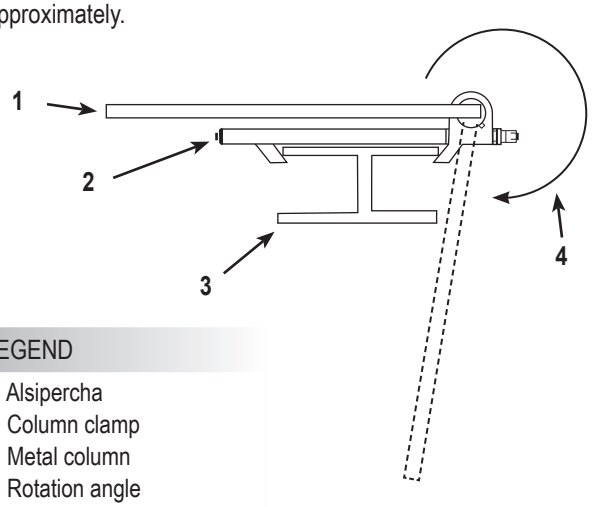


3.- Both column clamps (83424) will be connected to the steel column, distanced by 1.20 m. Attach both column clamps using a hammer, hitting the end nut hard (up to 50 Nm).

Note: The clamp which has the column sleeve connected must be situated on the bottom position, as shown in the below figure



4.- Now the Alsipercha body (84411) will be inserted through the rings of both column clamps connected, untill the bottom part of the Alsipercha body is inserted into the column clamp sleeve. Once the Alsipercha is connected, and the worker is connected to his safety harness, the worker has a free rotation angle of 280º approximately.



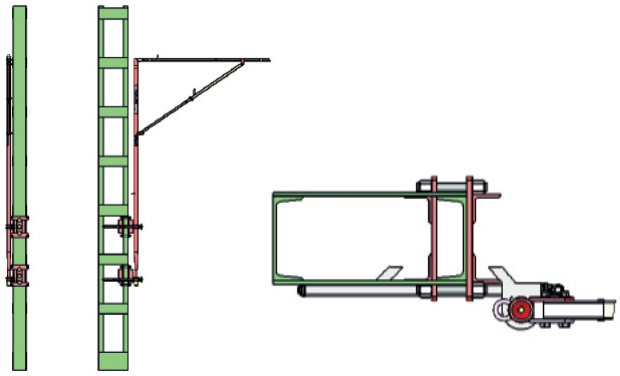
LEGEND

1. Alsipercha
2. Column clamp
3. Metal column
4. Rotation angle

Solution description

The Squared columns adapter (8409195) is an adapter that allows the column clamps to connect on to the pillars or flat square or rectangular section columns; previously, it would have the ALSIPERCHA system (84411) installed, providing an anchoring point that protects users from falls from heights.
The distance between the column clamps connected to the Squared columns adapter (8409195) must be ≥ 1.20 m.

- **Designed and tested in compliance to EN:795:2012 and ANSI/ASSE Z359.18-2017.**
- **Can be assembled by competent works personnel**



Component Description

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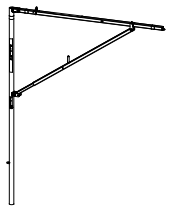
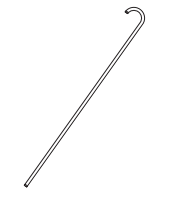


ALSIPERCHA CE / ANSI

Description: Overhead anchor point with built-in energy absorber, anchored in the column with a working radius of 6.5 m that allows access to a surface area of 125 m^2.

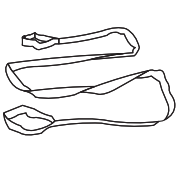
Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80



HOOK

Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.

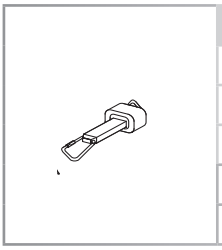
Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



SLING

Description: An essential component used to move the system with a crane, to take it to the column, or remove it once the work is complete.

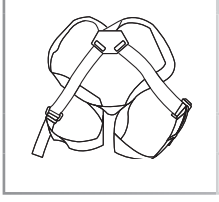
Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62



RETRACTABLE DEVICE

Description: Fall arrest block that stops in case of fall.

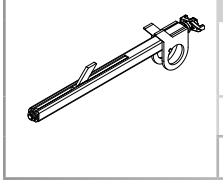
Code	Dimensions (mm)	Weight (kg)
8441201	2,500	1.599
84439	3,500	1.850
8441205	10,000	7



HARNESS

Description: Device anchoring the worker to the Alsipercha fall arrest system.

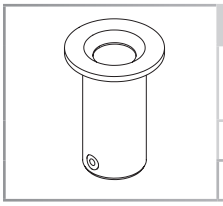
Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1



COLUMN CLAMP

Description: Column clamp to anchor the Alsipercha body to steel wide flange columns.

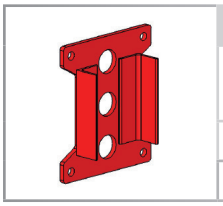
Code	Dimensions (mm)	Weight (kg)
83424	755 x 55	6.27



COLUMN CLAMP SLEEVE

Description: Accesory that serves as housing the Alsipercha main body.

Code	Dimensions (mm)	Weight (kg)
83426	154 Ø65	1.24



SQUARED COLUMNS ADAPTER

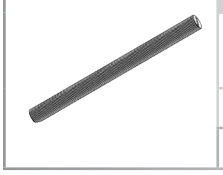
Description: Adaptar to connect the Alsipercha column clamps over sqquared shape columns.

Code	Dimensions (mm)	Weight (kg)
8409195	400 x 350 x 80	16.2

GROWER WASHER 13 DIN 127

Description: Necesary element to fasten the adapter squared columns with the nuts and theaded rod.

Code	Dimensions (mm)	Weight (kg)
83081	21.1 x 2.5	0.01



THREADED ROD DIN 975 8.8 M-12 ZN ML

Description: Necesary element to fasten the adapter squared columns with the nuts and whaser.

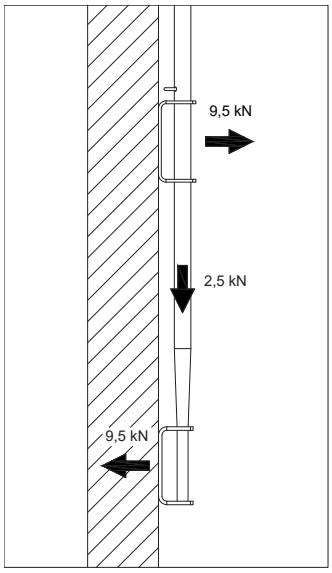
Code	Dimensions (mm)	Weight (kg)
83082	8.8 caliber M12	2.89

NUT M12 DIN 934 CAL 8.8

Description: Necesary element to fasten the adapter squared columns with the nuts.

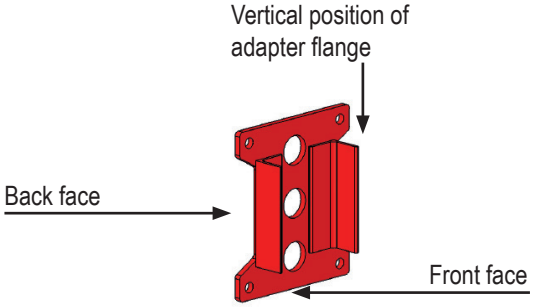
Code	Dimensions (mm)	Weight (kg)
4310090	18.9 x 8	0.18

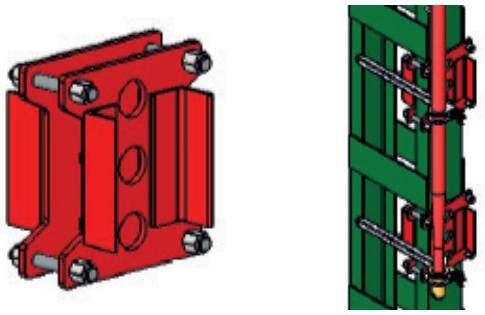
Before beginning with the installation, it must be necessary to double check that the squared shaped column is in good condition and will be capable to resist the maximum loads expected as follows:



Installation Process

This solution requires a total of 4 Squared columns adapter (8409195) to be installed, which are installed on the flat surface of the rectangular/ square column: 2 units at the front, and 2 units at the back of the column.
The 4 units will be distributed on the column, 2 units on the upper part, and the other 2 units on the lower part, calculating that the column clamps (83424) that will be installed later on these supports, will always have a distance between them of ≥ 1.20m.
The installation process for the 2 Squared columns adapter (8409195) on the column will be identical, regardless of whether it is for the pair located in the upper position, or the pair in the lower position.
They are connected to the columns in such a way that the front part of the supports faces the outside of the column, and the back of the plates are facing each other. The adapter flanges must remain in the vertical position:





Example of a set of adapters correctly assembled

Once the two upper supports and the two lower supports are installed, proceed to install 1 column clamp (83424) on each pair of adapters, attaching them with tools, and tightly adjusting the end wing nut (up to 50 Nm).
Then, place the column clamp sleeve (83426) through the central hole of the clamp located on the lower part.
Finally, the ALSIPERCHA (84411 / 83471) can be installed through the central holes of the column clamps (83424); Begin the installation through the hole of the upper-position clamp, then pass through the central hole of the lower-position clamp. Ensure that the lower part of the ALSIPERCHA (84411 / 83471) is correctly and completely inserted, until it reaches the bottom, internal part of the column clamp sleeve (83426).

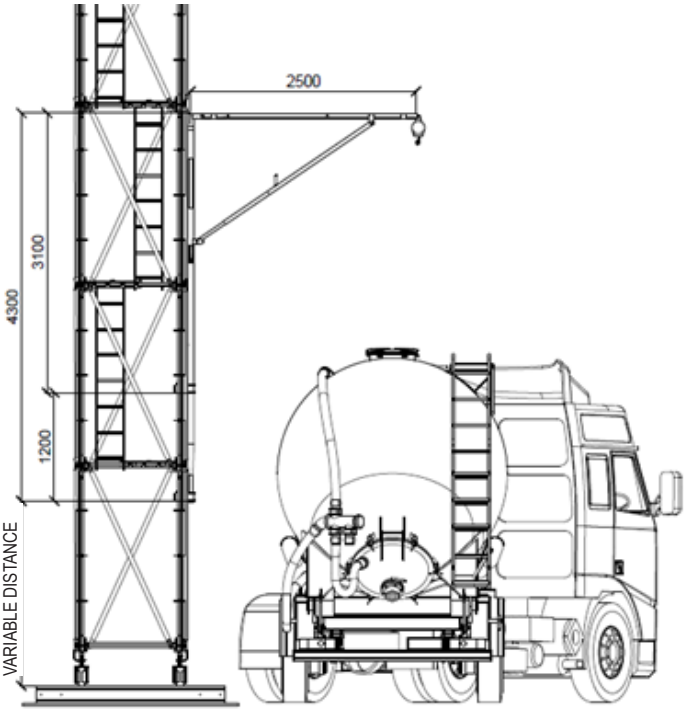
Dismantling

Follow the installation process in reverse to dismantle the device.

Solution description

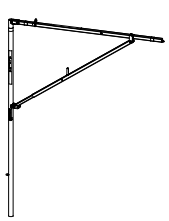
The Ring lock adapter solution consists of a kit comprising two Ring lock adapter (83078) and one column clamp sleeve (83426), that are installed at a distance of ≥ 1.20m between them; then, one Alsipercha (84411 / 83471) unit is added, providing an anchoring point that protects users from falls from heights.
This combination allows the ALSIPERCHA to be connected to vertical structures of multi-directional systems, providing a variable-height anchoring point, and allowing any work operation at height to be carried out safely.
Although its applications are limited, it is especially useful during the truck loading and unloading phase in those projects in which a worksite perimeter is required. The structure of the perimeter multi-directional system of the project can be used. (Variable distance)

- **Designed and tested in compliance to EN:795:2012 and ANSI/ASSE Z359.18-2017.**
- **Can be assembled by competent works personnel**



Component Description

Info. In all codes the second digit can be either 3, 4, or 7.



ALSIPERCHA CE / ANSI

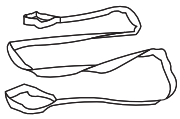
Description: Overhead anchor point with built-in energy absorber, anchored in the column with a working radius of 6.5 m that allows access to a surface area of 125 m².

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

HOOK

Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.

Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



SLING

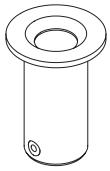
Description: An essential component used to move the system with a crane, to take it to the column, or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

HARNESS

Description: Device anchoring the worker to the Alsipercha fall arrest system.

Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1



COLUMN CLAMP SLEEVE

Description: Accesory that serves as housing the Alsipercha main body.

Code	Dimensions (mm)	Weight (kg)
83426	154 Ø65	1.24

RING LOCK ADAPTER

Description: Adapter to connect the Alsipercha system on ring lock vertical tubes.

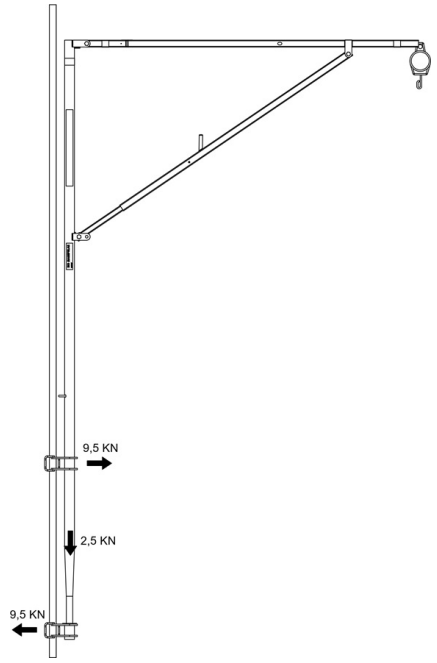
Code	Dimensions (mm)	Weight (kg)
83078	237 x 191	3.3

RETRACTABLE DEVICE

Description: Fall arrest block that stops in case of fall.

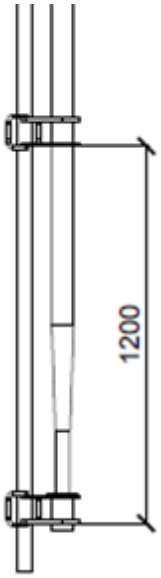
Code	Dimensions (mm)	Weight (kg)
8441201	2,500	1.599
84439	3,500	1.850
8441205	10,000	7

Before beginning with the installation, it must be necessary to double check that the squared shaped column is in good condition and will be capable to resist the maximum loads expected as follows:



Installation Process

Install a Ring lock adapter (83078) to the vertical tube of the scaffolding structure, at the lower position where the lower part of the ALSIPERCHA should go.
Next, install the column clamp sleeve (83426) into the Ring lock adapter (83078) positioned at the lower part (previous step), using the holes designed to ensure correct installation.
After that, install the second Ring lock adapter (83078) at the upper position, and at a distance of ≥ 1.20 with respect to the Ring lock adapter installed at the lower part.



Once the two Ring lock adapter (83078) and the column clamp sleeve (83426) are installed, insert an Alsipercha (84411 / 83471) unit; start installing in the central hole of the Ring lock adapter in the upper position, and then pass it through the central hole of the Ring lock adapter in the lower position. Ensure that the lower part of the ALSIPERCHA is correctly and completely inserted, until it reaches the bottom, internal part of the column clamp sleeve (83426).

Dismantling

Follow the installation process in reverse to dismantle the device.

Warning - The Alsipercha + Ring lock adapter can only be installed and used, if meets any of the following correlation between the total weight of the structure where it is intended to be installed, and the distance with respect of the center of gravity.

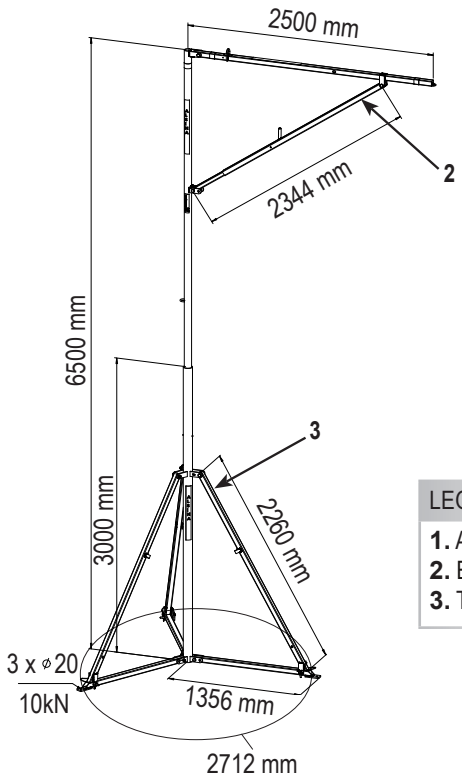
Maximum distance from center of gravity [m]	Minimum weight of structure [kg]
1	4.500
2	2.250
3	1.500
4	1.125
5	900
6	750
7	643
8	563
9	500
10	450

Alsipercha Tripod

Alsipercha Tripod assembly procedure
The ALSIPERCHA TRIPOD, together with the Alsipercha, offers a truck loading / unloading solution, providing safety for the operator on the truck platform.
Designed and tested in compliance to EN:795:2012 and ANSI/ASSE Z359.18-2017.

- Can be assembled by competent works personnel

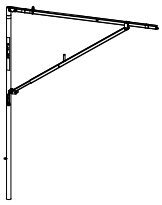
The ALSIPERCHA TRIPOD is folded up when it is delivered onsite. Once it has been placed in its work position, it is assembled according to the following steps:



LEGEND
1. Alsipercha body
2. Energy Absorber
3. Tripod

Component Description

Info. In all codes the second digit can be either 3, 4, or 7.



ALSIPERCHA CE / ANSI

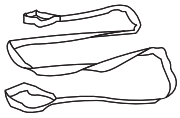
Description: Overhead anchor point with built-in energy absorber, to combine with the tripod.

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

HOOK

Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.

Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



SLING

Description: An essential component used to move the system with a crane, or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

RETRACTABLE DEVICE 10M

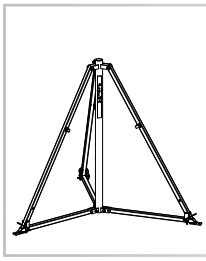
Description: Retractable component that locks on a sudden acceleration.

Code	Dimensions (mm)	Weight (kg)
8441205	10,000	7

HARNESS

Description: Device anchoring the worker to the Alsipercha fall arrest system.

Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1



TRIPOD

Description: Element that supports and stabilizes the Alsipercha.

Code	Dimensions (mm)	Weight (kg)
83473	3,000	98

FH FISCHER ANCHORS Ø18 M12X138.

Description:

Code	Dimensions (mm)	Weight (kg)
83479	18 x 80 x 25 S	0.01

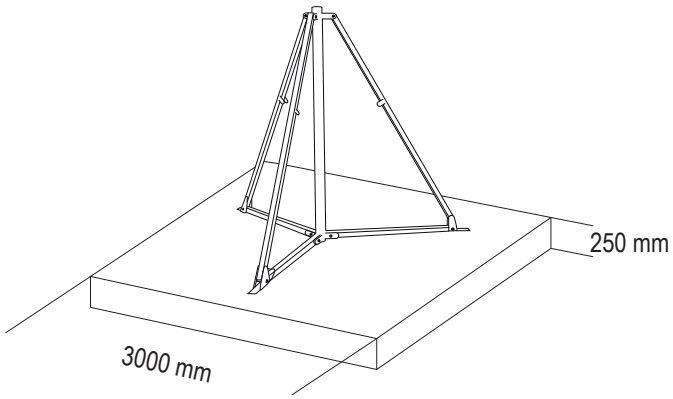
Alsipercha tripod assembly procedure

Info. It is very important to mount the ALSIPERCHA TRIPOD on sufficiently compact and resistant terrain so that the anchor device provides sufficient safety guarantees. There are various terrain / slab / footing options:

Option of anchoring to concrete/slab footing

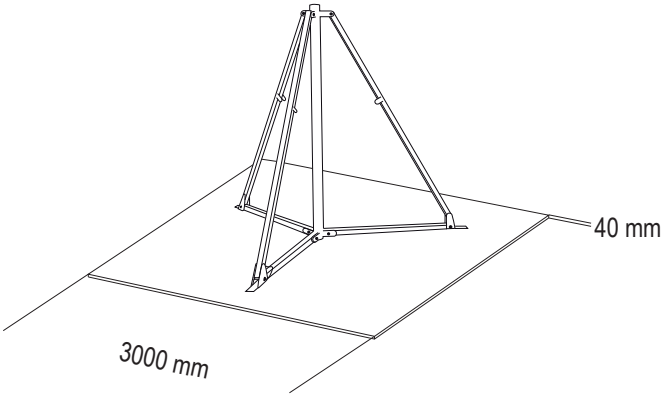
- Minimum characteristics of a concrete platform to anchor the tripod must be: HA25 concrete or higher (minimum resistance of concrete for use = 10 MPa, if fresh concrete is used), measurements of 300 x 300 cm and thickness of 25 cm, as well as a scrap metal covering.

  In this case, the anchor will consist of placing 3 “M12 FISCHER FH 18X80/25 S HIGH RESISTANCE ANCHORS” (or equivalent).



Option of anchoring to steel plate

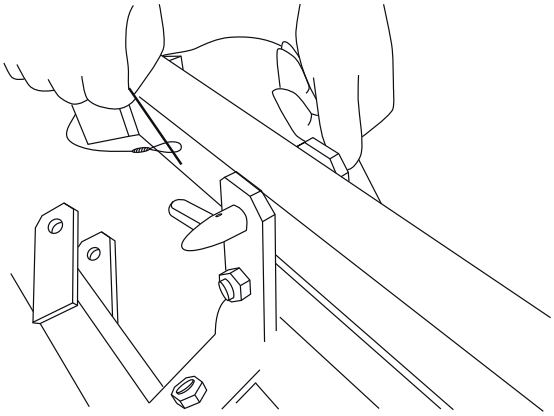
- Minimum characteristics of a steel platform to anchor the tripod must be: measurements of 300 x 300 cm and 4 cm thickness, with three M18 previously-bored threaded holes through which the anchors will pass (in this case it will be an 8.8 quality M18x50 DIN933 galvanised screw with an M18 DIN 125-A washer).



Warning - Prepare and adapt the ground/surface where the system is intended to be installed, in order to ensure a 0º % of unevenness.

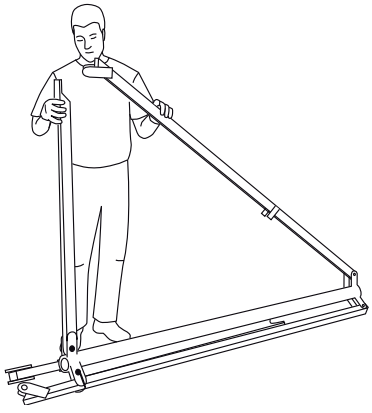
Step 1

To open the tripod leg, release the connecting PINS.

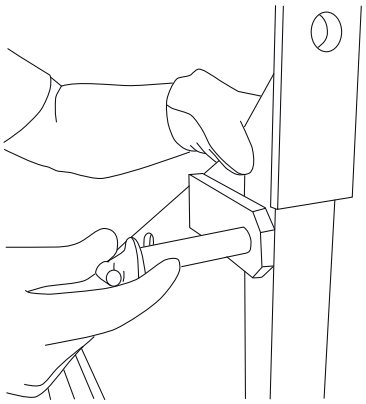


Step 2

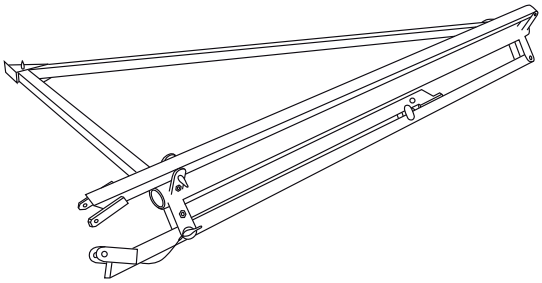
Once the pin has been released, the first foot will open.



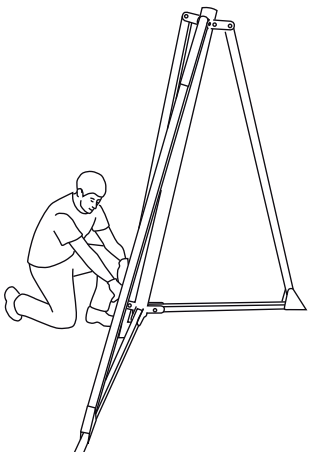
Step 3
Secure it in the open position by placing the pin in the R position.



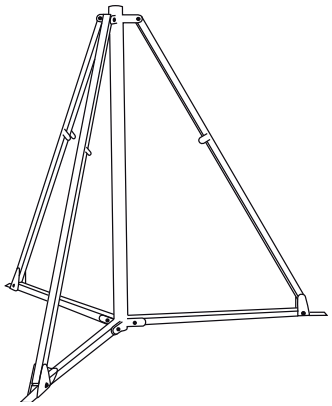
Step 4
ALSINA TRIPOD with one foot open.



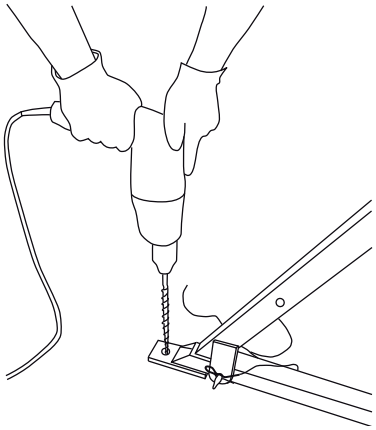
Step 5
Turn the TRIPOD 180 degrees, open the second foot, and place it upright. Use an anchoring element to secure the tripod to a high, fixed point so the structure does not overturn. Proceed to open the third foot.



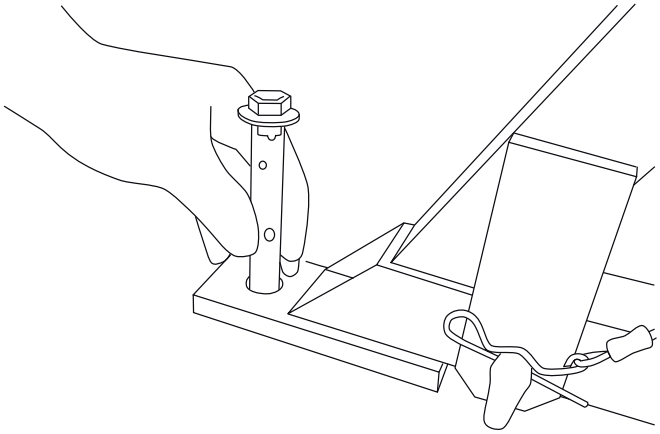
Step 6
ALSINA TRIPOD in the working position.



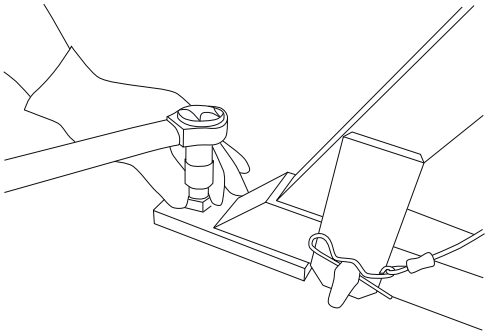
Step 7
On the HA25 concrete sole plate, drill with an 18 mm - diameter bit to a depth of 140 mm.

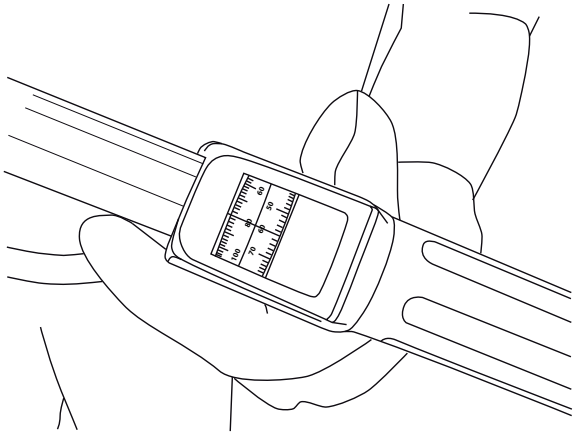


Step 8
The M12 FISCHER FH 18X80/25 S HIGH RESISTANCE ANCHOR is fitted.



Step 9
With a dynamometric wrench, torque to 80 Nm. Repeat for all three anchors. Finally, using the crane, place the Alsipercha on top of the ALSIPERCHA TRIPOD.





Procedure for use on site

General Information

The maximum height from the anchoring point to the ground is 6.5 meters, meaning that the operator can work above the truck load in complete safety. The diameter of the circular surface occupied by the tripod base is 2.7 meters.

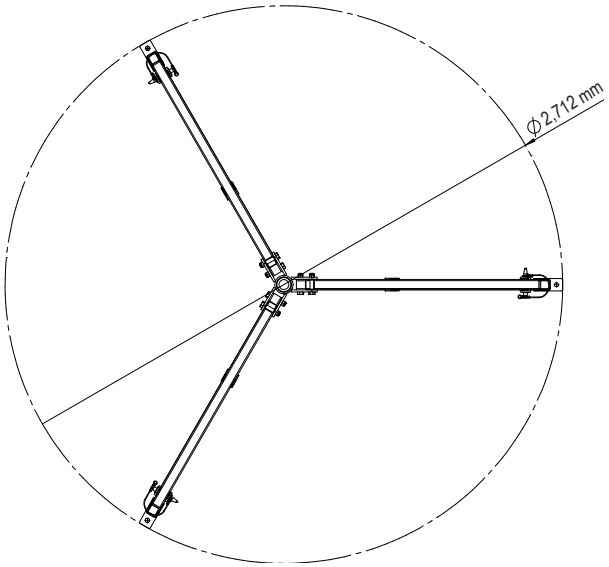
Safety information

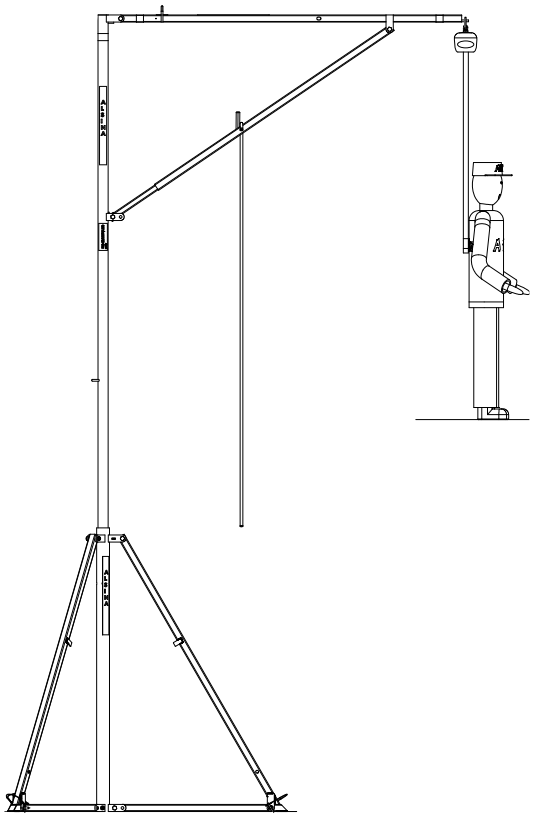
The Alsipercha is only for the operations indicated in this document, to prevent them from falling when loading on or unloading from delivery vehicle platforms.

Other spare parts that are not supplied with the system must not be used.

Check all the parts of the Alsina unloading system components before installing. Never use the equipment if it is damaged or rusty, as this may affect its safety.

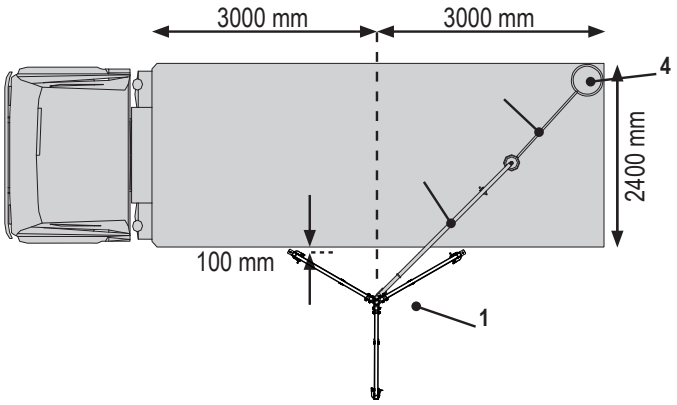
If activated due to a fall of a user, the retractable device must be withdrawn from service and inspected by an appropriate person. If you have any queries, please contact Alsina





Trucks that are 6 m long

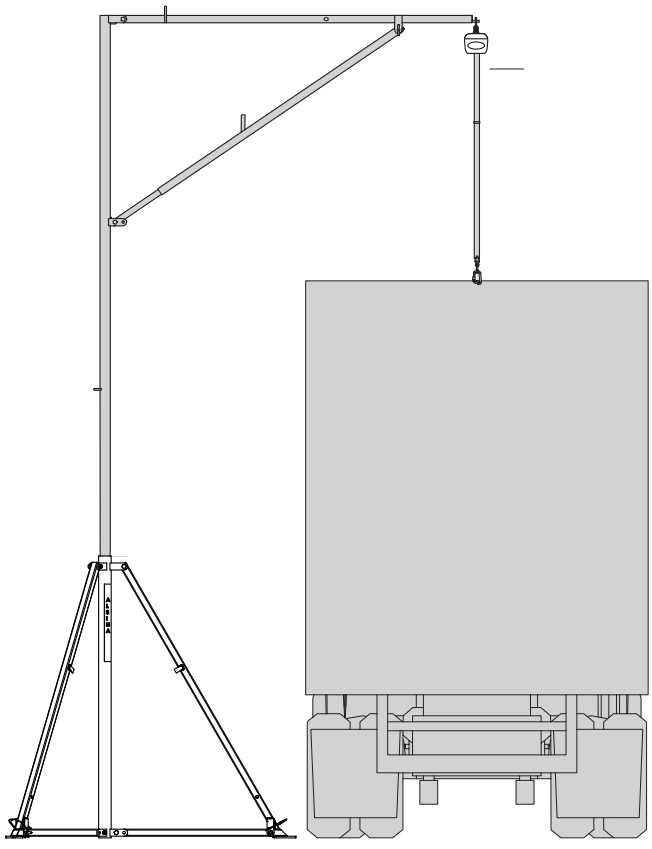
To unload the 6-metre platform of a truck, only one Alsipercha system will need to be used. When parking the truck, the rear box/platform must be situated according to the distances shown in the following illustration:



LEGEND

1. Alsipercha tripod
2. Alsipercha System
3. 10 m retractable device
4. Worker

Final assembly



Any worker unloading a truck with a 6 m platform, must use:

- Suitable footwear
- A reflective jacket and a helmet with chin protection
- A safety harness
- 0.3 m additional extension rope for subsequent anchoring

Once the worker has the PPE correct (Personal Protection Equipment), he can hang the additional 0.3 m rope on his harness by rolling it up and attach the other end of the fall arrest device to the retractable element with a snap hook.

The worker must be connected to the system before accessing the platform.

Warning - Prepare and adapt the ground/surface where the system is intended to be installed, in order to ensure a 0º % of unevenness.

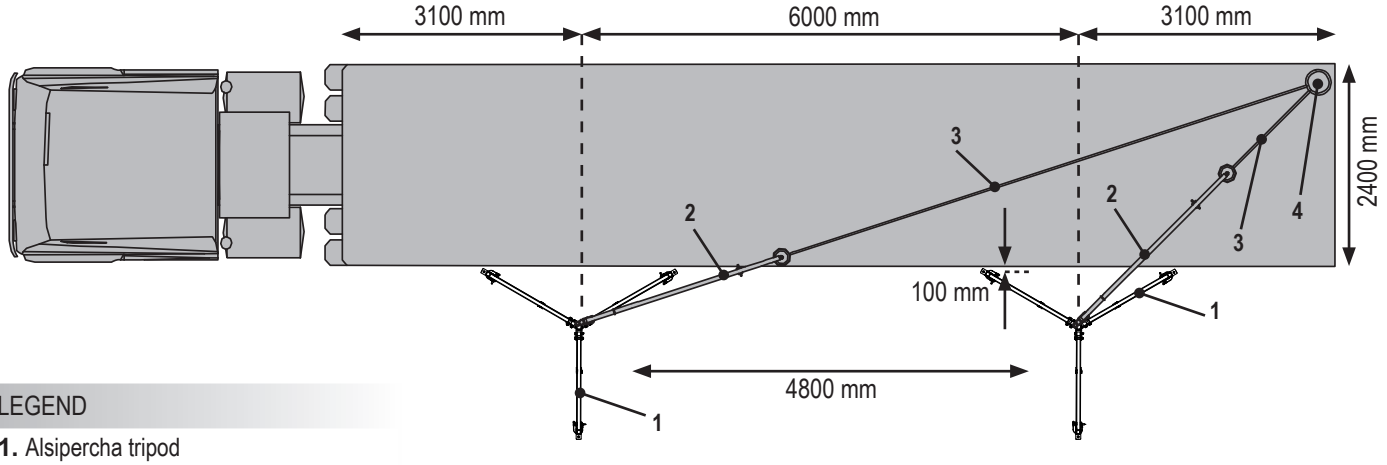
Trucks that are 12 m long

As the image below shows, when a 12-metre truck is loaded and unloaded, two Alsipercha systems must be used simultaneously.

When parking the truck, the rear box/platform must be situated according to the distances shown in the illustration below.

The worker must be attached to two Alsipercha systems. This will help him control the movement on the 12 m long platform in the event of a fall.

If it should be necessary to access the outer corners of the platform, it is best to move the truck to ensure that the worker is within a range of 3.5 m from the structure.



LEGEND

1. Alsipercha tripod
2. Alsipercha System
3. 10 m retractable device
4. Worker

Any worker unloading a truck with 12 m platform, must use:

- suitable footwear
- a reflective jacket and a helmet with chin protection
- a safety harness
- 0.3 m additional extension rope for subsequent anchoring

Once the worker has the correct PPE (Personal Protection Equipment) he can hang the additional 0.3 m rope on his harness by rolling it up and attach the other end of the fall arrest device to the retractable element with a snap hook.

The worker must be connected to the two systems before accessing the platform.

Warning - Prepare and adapt the ground/surface where the system is intended to be installed, in order to ensure a 0º % of unevenness.

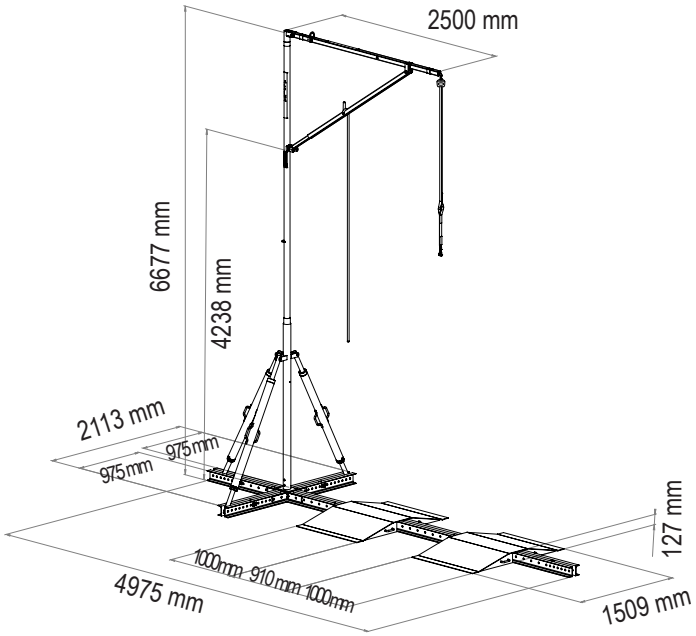
Alsipercha COUTERWEIGHT MF

Introduction

The MF Counterweight solution, together with the ALSIPERCHA fall prevention system, has been designed to allow the loading and unloading of equipment from the top of a flatbed delivery truck/trailer in a safe manner.

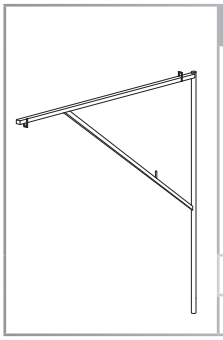
- Can be assembled by competent works personnel

Designed and tested in compliance to EN:795:2012 and ANSI/ASSE Z359.18-2017, the MF Counterweight solution can be used on a site or in a loading yard and can be moved to alternative locations as the needs arise. The MF Counterweight solution incorporates an ALSIPERCHA unit, which can be separated and folded up for ease of transport between locations.



Warning - All persons using this equipment must read, understand and follow all instructions. Failure to do so may result in serious injury or death. Pregnant women and minors must not use this product.

Component Description



ALSIPERCHA CE / ANSI

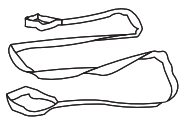
Description: Overhead anchor point with built-in energy absorber, to combine with the MF Counterweight system.

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

HOOK

Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.

Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



SLING

Description: An essential component used to move the system with a crane, or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

RETRACTABLE DEVICE 10M

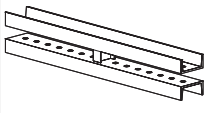
Description: Retractable component that locks on a sudden acceleration.

Code	Dimensions (mm)	Weight (kg)
8441205	10,000	7

HARNESS

Description: Device anchoring the worker to the Alsipercha fall arrest system.

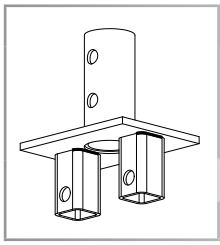
Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1



2 UPN GIRDER

Description: Main structural beam.

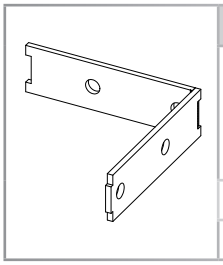
Code	Dimensions (mm)	Weight (kg)
3490122	1,220	30.76
3490497	4,970	124.7



ALSIPERCHA MF AXIS SUPPORT

Description: Connector to the central support axis.

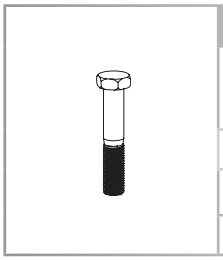
Code	Dimensions (mm)	Weight (kg)
83039	200 x 150 x 250	4



ALSIPERCHA MF STRENGTHENER

Description: Component waler.

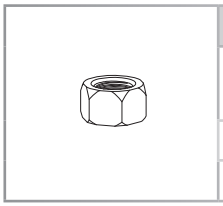
Code	Dimensions (mm)	Weight (kg)
83038	252 x 249 x 70	2



DIN931 8.8 ZN SCREW

Description: Component connection.

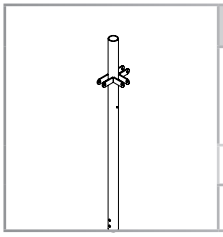
Code	Dimensions (mm)	Weight (kg)
33729	20 x 100	0.4
83046	20 x 120	0.35



M 20 DIN985 NUT

Description: Component connection.

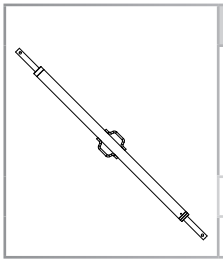
Code	Dimensions (mm)	Weight (kg)
630000167	10 x 10	0.05



ALSIPERCHA MF AXIS

Description: Central support axis.

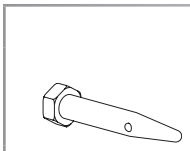
Code	Dimensions (mm)	Weight (kg)
84059	3,000	50.9



PULLPROP 1.50-2.25 MF

Description: Component for aligning.

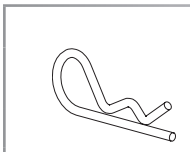
Code	Dimensions (mm)	Weight (kg)
34603	1,500 - 2,250	22.5



D/20X130 MF NUT

Description: Component connection.

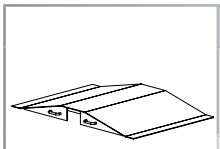
Code	Dimensions (mm)	Weight (kg)
33701	142 x 30	0.32



"R" SAFETY PIN

Description: Component connection.

Code	Dimensions (mm)	Weight (kg)
33700	74 x 30	0.14



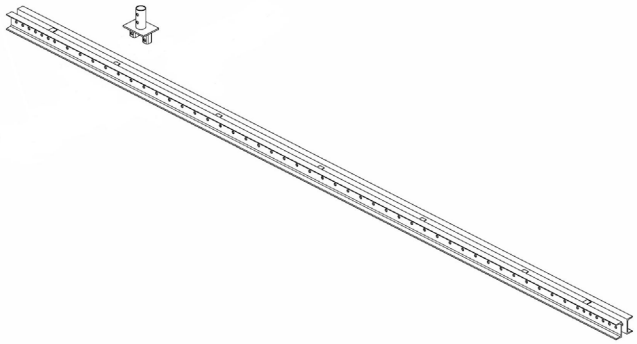
ALSIP. MF TRUCK WHEEL BASE

Description: Platform.

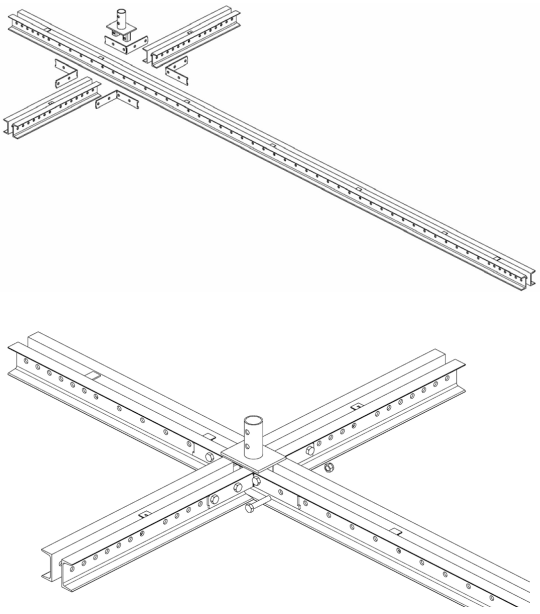
Code	Dimensions (mm)	Weight (kg)
83034	1,510 x 1,000 x 130	90

Assembly instructions

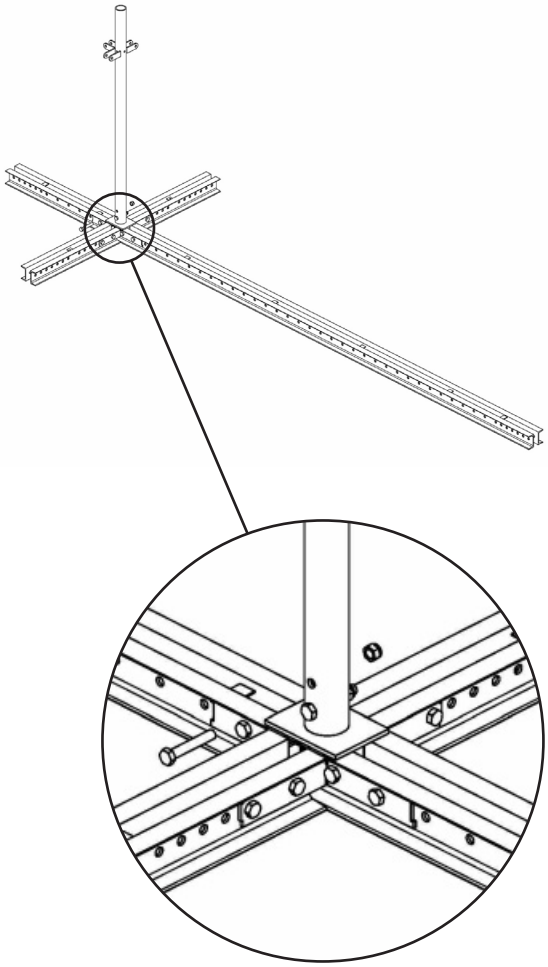
Step 1
On a flat surface, must be placed the 2UPN 4.97M MF GIRDER (Code 3490497). Then, the ALSIPERCHA MF AXIS (Code 83039) has to be installed over the girder, by using the 6th and 7th hole from the more spaced series of holes of the beam.



Step 2
The shortest beams 2UPN 1.22M MF GIRDER (Code 3490122) needs to be placed perpendicular to the 2UPN 4.97M MF GIRDER (Code 3490497), by using the ALSIPERCHA MF STRENGTHENER (Code 83038). The beams joint must be done by using the screw (33729) and the nuts (630000167), as follows:



Step 3
The ALSIPERCHA MF AXIS (Code 84059) must be connected to the ALSIPERCHA MF AXIS SUPPORT (Code 83039), by using the screw (83046) and the nuts (630000167), as follows:

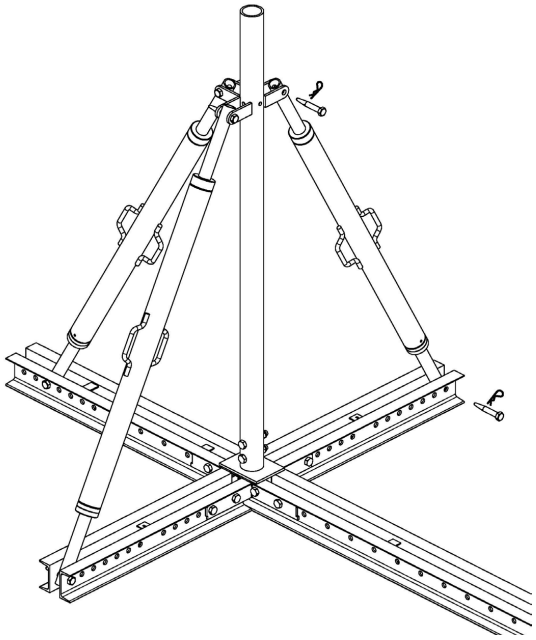


Warning - Ensure that the surface/ground where the system is intended to be installed, must have **0º % of unevenness**.

Warning - All persons using this equipment must read, understand and follow all instructions. Failure to do so may result in serious injury or death. Pregnant women and minors must not use this product.

Step 4

The PULLPROP 1.50-2.25 MF (Code 34603), has to be joined to the ALSIPERCHA MF AXIS (Code 84059), and to the two kind of GIRDERS (Codes 3490122 and 3490497), by using the NUT (Code 33701) and the "R" SAFETY PIN (33700), as follows:

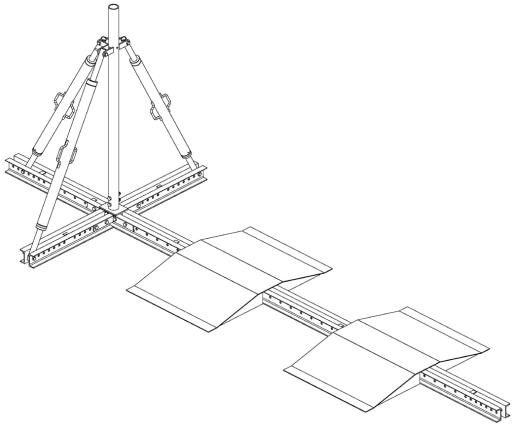


Info. The connection of the aligners (34603) to the 2 UPN beams shall take place using the holes:
2 UPN beam with a length of 1,220 mm (3490122) => those of the fourth position, starting from the outermost of the ALSIPERCHA MF AXIS (84059)
2 UPN beam with a length of 4,970 mm (3490497) => the sixth (starting with the outermost hole towards the ALSIPERCHA MF AXIS).

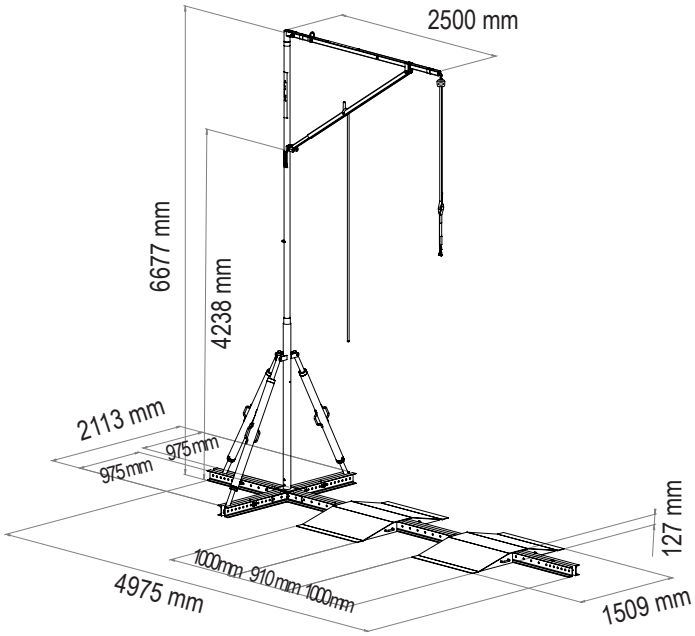
Warning - All persons using this equipment must read, understand and follow all instructions. Failure to do so may result in serious injury or death. Pregnant women and minors must not use this product.

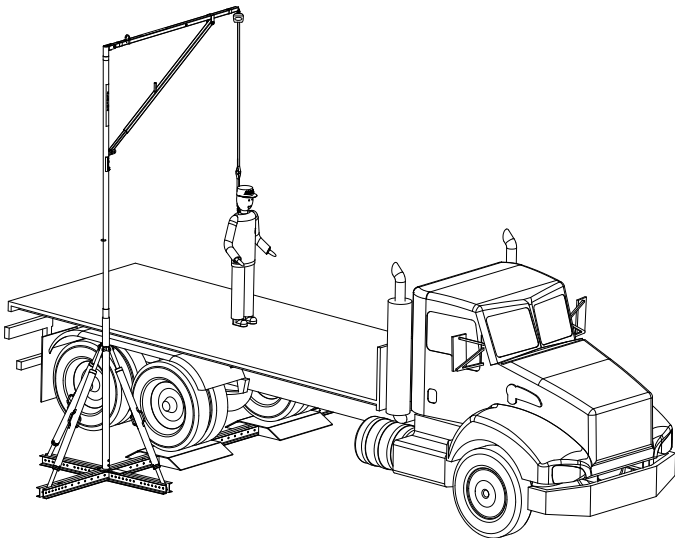
Step 5

The ALSIP. MF TRUCK WHEEL BASE (Code 83034) has to be put over the 2UPN 4.97M MF GIRDER (Code 3490497) at a distance between 0.85m and 1.00m from the ALSIPERCHA MF AXIS (Code 84059). The distance between the TRUCK WHEEL BASES (Code 83034), will depend on the distance between the axis trucks.



Step 6
Finally, the ALSIPERCHA FALL PREVENTION SYSTEM (Code 84411) has to be installed inside the ALSIPERCHA MF AXIS (Code 84059), to adopt its final configuration.





Warning - Prepare and adapt the ground/surface where the system is intended to be installed, in order to ensure a 0º % of unevenness.

Description

The **Alsipercha** + **Wall Brackets** system, designed and tested in compliance to EN:795:2012 and ANSI/ASSE Z359.18-2017, consist of a pair of connectors (upper bracket + lower bracket), through which the **Alsipercha** will later be inserted. It consists of a pair of steel galvanized pair of brackets, with main central holes through which the **Alsipercha** will pass through, and distanced between them at a mínimum distance of 1m.

- Can be assembled by competent works personnel

This combination provides a versatile solution, as it can be anchored to columns/walls/surface made of reinforced concrete.

Safety warnings

The **Alsipercha** + **Wall Brackets** has been designed to protect workers when there is a risk to fall from heights.

- Under no circumstances shall the product be used as a makeshift crane or lifting/lowering device.
- Under no circumstances shall any items, other than those provided with the system be used either in replacement or through preference as this may affect the performance of the product.
- Care should be taken in the transportation of the product between uses and locations. If any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- Care should be taken in the installation of the product and if any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- The location where the **Alsipercha** + **Wall Brackets** is being used should have a rescue plan in place, in the event of a fall incident.
- The device is only intended for use by one person at a time. **Under no circumstances shall multiple persons be attached to the device.**
- When a crane is lifting the **Alsipercha** unit, be aware of the movements made by the crane and keep workers at a safe distance.
- The **Alsipercha** + **Wall Brackets** is intended to be used within a zero factor fall arrest system. Make sure that the anchorage is always overhead and the lifeline is taut between the anchorage point and the worker.
- In case that this product is re-sold outside the original country of destination, it is essential that the reseller provides user instructions in the language of the country in which the system is to be used.
- Under no circumstances shall any item other than those provided with the system be used either in replacement or through preference as this may affect the performance of the product.
- The equipment must be inspected before each use.
- Do not used damaged or rusty materials, as this may affect product performance.

Always remember:

- Plan fall prevention at an early stage, this will benefit everyone.
- Use only safety-checked products.
- Restrict access below and around installation and working area to prevent injury to others from any fall hazard.
- Use tools designed for the type of work to be carried out.
- Keep the installation area in order.
- A safe workplace is a good workplace.
- Many fall accidents occur from a low height.
- Parts might be slippery when wet, be cautious when handling.

Check list prior to usage

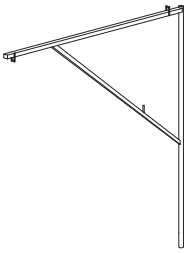
Checking of the system shall be performed before each use, if any of the listed statements below are not satisfied make sure to correct any issue before using the product.

Checking includes the following steps (made by a qualified person):

- Ensure that there is no weld damage or deformation to any part of the system.
- Ensure that no corrosion that can affect the strength of the system has occurred.
- Ensure there are no loose parts e.g. gravel, dirt, concrete etc. in any sleeves or tubes where another part shall be inserted.
- Ensure the correct insertion of the **Alsipercha** unit, and it rotates freely.

Components of the system

The **Alsipercha** + **Wall Brackets** is made by: 1 **Alsipercha** , combined with a pair of galvanized Steel wall brackets, which their main central holes will later allocate the **Alsipercha**, providing an effective overhead anchor point.



ALSIPERCHA CE / ANSI

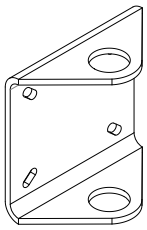
Description: Overhead anchor point with built-in energy absorber, to combine with the wall brackets system.

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

ALSIPERCHA HOOK

Description: Component used to reach the subsequent Alsipercha, if required, to change the anchor point.

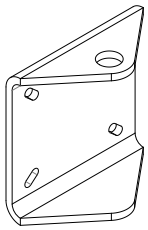
Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



UPPER WALL BRACKETS

Description: Upper BRACKETS to secure the Alsipercha to a wall or concrete structure.

Code	Dimensions (mm)	Weight (kg)
83851	300 x 300 x 155	15



LOWER WALL BRACKETS

Description: Lower BRACKETS to secure the Alsipercha to a wall or concrete structure.

Code	Dimensions (mm)	Weight (kg)
83852	300 x 300 x 155	15

WALL BRACKETS ANCHORING

Description: Part to anchor the BRACKETS to the wall.

Code	Dimensions (mm)	Weight (kg)
83853	16 x 190	0.190

DIN 934-M16 NUT

Description: Part required to install the anchoring and BRACKETS on the wall.

Code	Dimensions (mm)	Weight (kg)
83854	26.8 x 13	0.020

M12DIN 127 - M16 WASHER

Description: Part required to install the anchoring and BRACKETS on the wall.

Code	Dimensions (mm)	Weight (kg)
83855	27.4 x 3	0.010

DIN 125 - M16 WASHER

Description: Part required to install the anchoring and BRACKETS on the wall.

Code	Dimensions (mm)	Weight (kg)
83856	29.5 x 3	0.010

DIN 9021 - M16 WASHER

Description: Part required to install the anchoring and BRACKETS on the wall.

Code	Dimensions (mm)	Weight (kg)
83857	50 x 3	0.012

410ML EPOXY RESIN

Description: Part required to install the anchoring and BRACKETS on the wall.

Code	Dimensions (mm)	Weight (kg)
84858	300 x 300 x 155	0.400

5.5M RETRACTABLE DEVICE EN 360

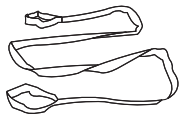
Description: Retractable component that locks on a sudden acceleration.

Code	Dimensions (mm)	Weight (kg)
83056	5,500	1.5

HARNESS

Device anchoring the operator to the Alsipercha fall prevention system.

Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1

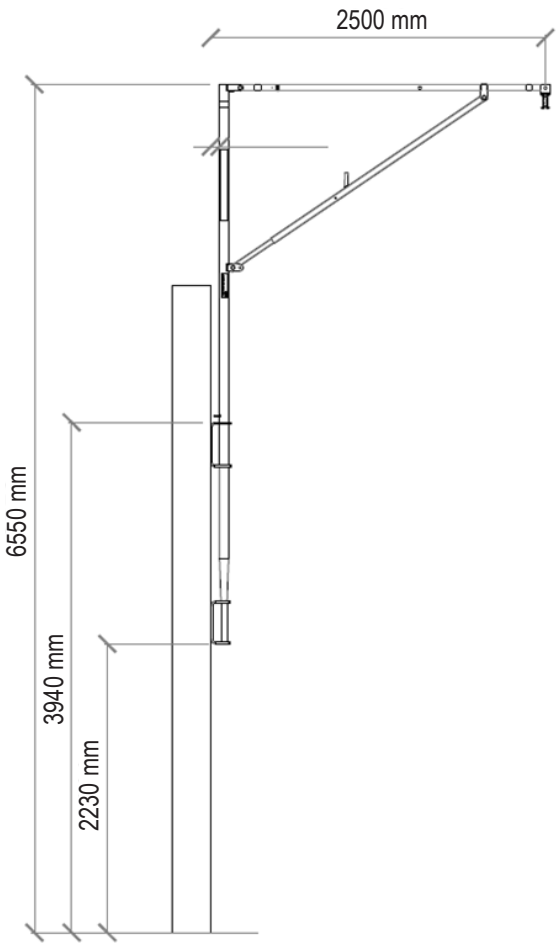


SLING (3M)

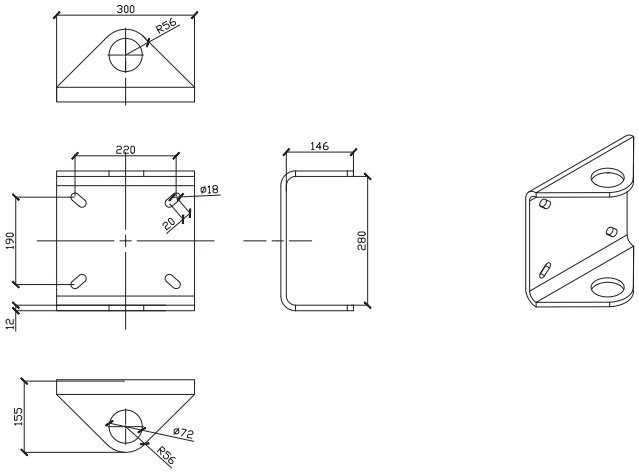
Description: An essential component used to move the system with a crane or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

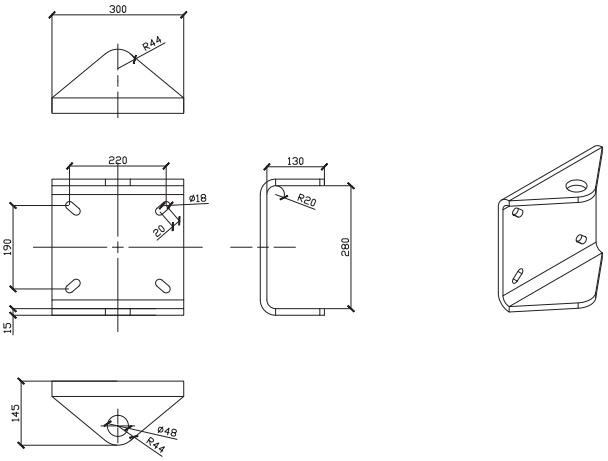
Dimensions with Alsipercha



UPPER WALL BRACKET



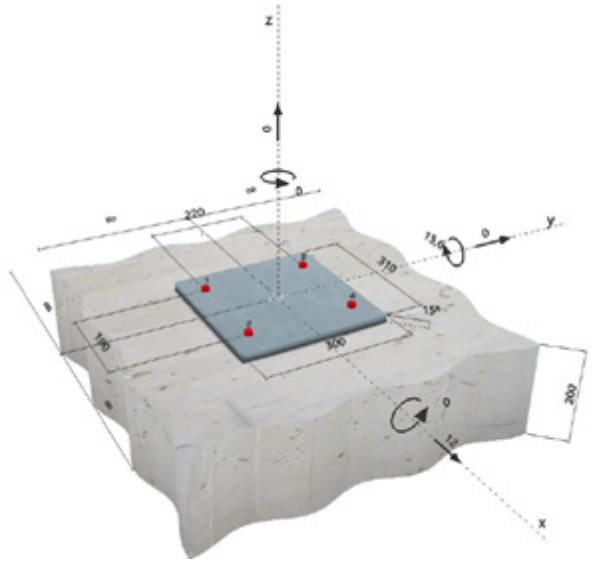
LOWER WALL BRACKET



Anchoring requirements

- Calculation method: ETAG BOND Guide (EOTA TR029)
- Anchor base: Regular concrete, C25/30, EN 206
- Condition of concrete: Compressed, dry perforation
- Edge reinforcement: No Reinforcement.
- No reinforcement on the longitudinal edge.

Load geometry (not considering weight):



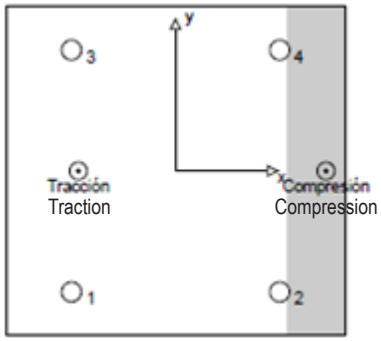
Resulting actions on the anchors:

Reactions to the anchor (kN)
Shear load: (+Traction, -Compression)

Anchor Nr.	Traction loads	Shear loads	Shear X	Shear Y
1	33,379	3,000	3,000	0,000
2	1,140	3,000	3,000	0,000
3	33,379	3,000	3,000	0,000
4	1,140	3,000	3,000	0,000

Maximum extension of the concrete under compression: 0,29 [‰]
Maximum tension of the concrete under compression: 8,64 [N/mm2]
Resulting traction in (x/y)=(-89/0): 69,037 [kN]
Resulting compression in (x/y)=(137/0): 69,037 [kN]

The forces on the anchors are calculated with the hypothesis of a rigid anchor plate.

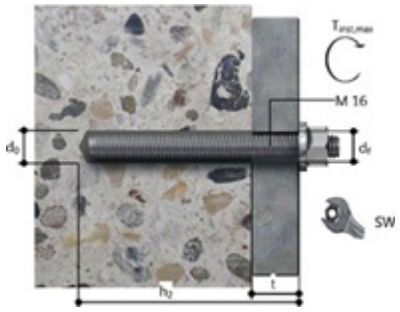


Anchor systems to be used:

- HILTI injection resins: HIT-CT 1
- Object to fasten: Threaded rod HIT-V-F M 16x190, zinc-plated/stainless steel, minimum strength 5.8

Assembly details:

- Thread diameter: M16
- Diameter of the drill: d_o = 18 mm
- Depth of the drill: h_2 = 158 mm
- Depth of the anchor: h_{ef} = 138 mm
- Drilling method: Hammer Drill
- Cleaning of the drill: Using brush and compressed air
- Maximum tightening torque: T_{max} = 80 Nm



Assembly process

The following sequence of steps must be taken in order to correctly assembly the **Alsipercha** + **Wall Brackets** system:

1.- Clean and clearance the area where is planned to install the **Wall Brackets**.
2.- Lay out, and properly define the distance, height and alignment between brackets, using appropriate levels and elements, ensuring to have a distance between brackets of minimum 1m.
3.- Lay out and drill the surface by using a percussion drill.

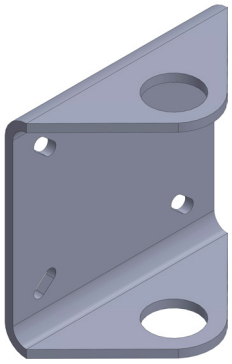
4.- Proceed to install the 4 chemical anchors per **Wall Bracket** (total 8 units of M16 stud bolts).

5.- Perform a traction test on the chemical anchors, arriving at 11 KN.

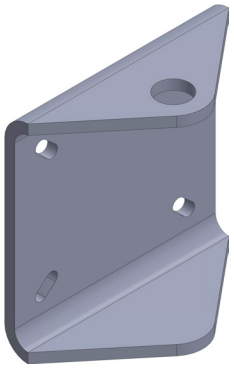
6.- Proceed to install the upper Wall Bracket (above the lower Wall bracket) and the lower Wall Bracket (below the upper Wall Bracket), through the anchors.

Ensure the correct alignment between both brackets, and their correct leveling. Finally, proceed to install the Wall brackets on the chemical anchors, inserting through the brackets holes, ensuring all of them fit correctly.

7.- The right position to install the Wall brackets are as follows::
a. Upper Wall Bracket above the lower Wall Bracket.
b. The central hole of the lower bracket, which will later be used to insert the lower part of the **Alsipercha**, must be facing the upper bracket. The side without the central hole of the lower bracket, must be facing to the ground:



Upper Wall bracket correct installation position



Lower Wall bracket correct installation position

8.- By the use of an appropiate lifting equipment, proceed to insert the **Alsipercha** through the central holes of the wall brackets, starting with the upper Wall Bracket, and ending with the lower Wall Bracket.

Installation elements

- Epoxy resin for chemical blocks.
- M16x190 mm. stud bolt.
- M16 nut.
- 16 mm. split lock washer.
- 16x48x3 mm. wide washer.

Tools

- Hammer drill.
- Blower pump, and brush to clean drill holes.
- Epoxy resin tool.
- Wrenches/nut tightening machine (dynamometric).
- Traction test kit.
- Leveller.

Lifting equipment

- Crane truck or according lifting equipment.

Description

The **Alsipercha** + **Post for reduced spaces** system (PRS), designed and tested in compliance to EN:795:2012 and ANSI/ASSE Z359.18-2017, has a base of mínimum dimensions (just 350 mm diameter), providing a perfect solution for installation of the **Alsipercha** overhead anchor point, in spaces with reduced or limitted available space. It consists of a cold-formed and hot-dipped structural steel tube, fitted with a circular mounting flange with mounting holes for easy installation

- Can be assembled by competent works personnel

It also include two special Nylatron GSM sockets contributing to a free and smooth rotation of the **Alsipercha**.

Safety warnings

The **Alsipercha** + **Post for reduced spaces** (PRS) has been designed to protect workers when there is a risk to fall from heights.

- Under no circumstances shall the product be used as a makeshift crane or lifting/lowering device.
- Under no circumstances shall any items, other than those provided with the system be used either in replacement or through preference as this may affect the performance of the product.
- Care should be taken in the transportation of the product between uses and locations. If any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- Care should be taken in the installation of the product and if any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- The location where the **Alsipercha** + **PRS** is being used should have a rescue plan in place, in the event of a fall incident.
- The device is only intended for use by one person at a time. **Under no circumstances shall multiple persons be attached to the device.**
- When a crane is lifting the **Alsipercha** unit, be aware of the movements made by the crane and keep workers at a safe distance.
- The **Alsipercha** + **PRS** is intended to be used within a zero factor fall arrest system. Make sure that the anchorage is always overhead and the lifeline is taut between the anchorage point and the worker.
- In case that this product is re-sold outside the original country of destination, it is essential that the reseller provides user instructions in the language of the country in which the system is to be used.
- Under no circumstances shall any item other than those provided with the system be used either in replacement or through preference as this may affect the performance of the product.
- The equipment must be inspected before each use.
- Do not used damaged or rusty materials, as this may affect product performance.

Always remember:

- Plan fall prevention at an early stage, this will benefit everyone.
- Use only safety-checked products.
- Restrict access below and around installation and working area to prevent injury to others from any fall hazard.
- Use tools designed for the type of work to be carried out.
- Keep the installation area in order.
- A safe workplace is a good workplace.
- Many fall accidents occur from a low height.
- Parts might be slippery when wet, be cautious when handling.

Check list prior to usage

Checking of the system shall be performed before each use, if any of the listed statements below are not satisfied make sure to correct any issue before using the product.

Checking includes the following steps (made by a qualified person):

- Ensure that there is no weld damage or deformation to any part of the system.
- Ensure that no corrosion that can affect the strength of the system has occurred.
- Ensure there are no loose parts e.g. gravel, dirt, concrete etc. in any sleeves or tubes where another part shall be inserted.
- Ensure the correct insertion of the **Alsipercha** unit, and it rotates freely 360º

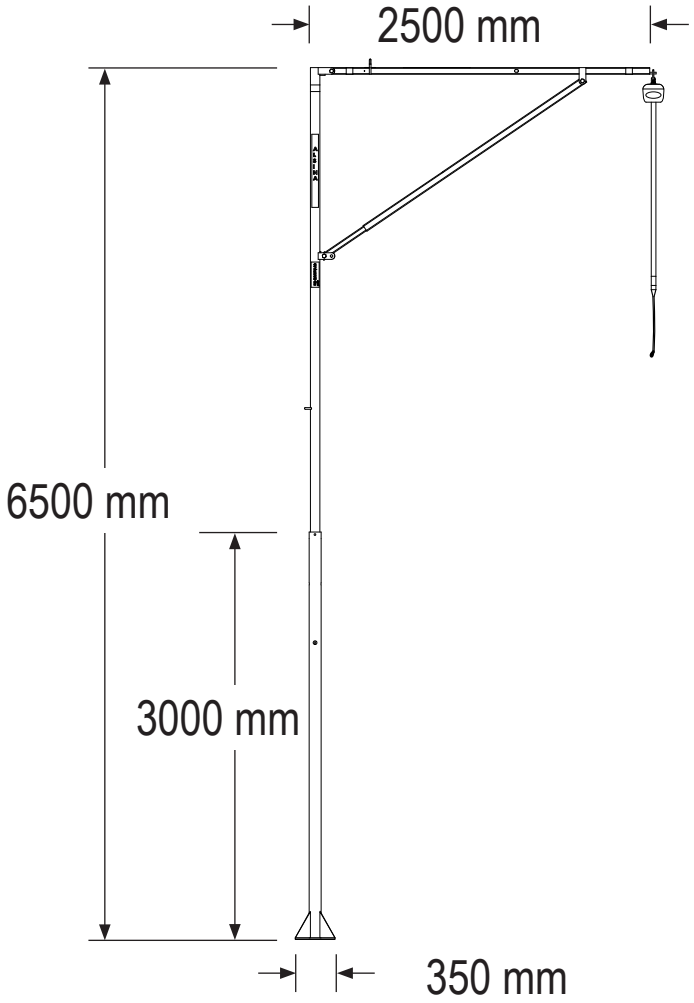
Warning - Prepare and adapt the ground/surface where the system is intended to be installed, in order to ensure a 0º % of unevenness.

Components of the system

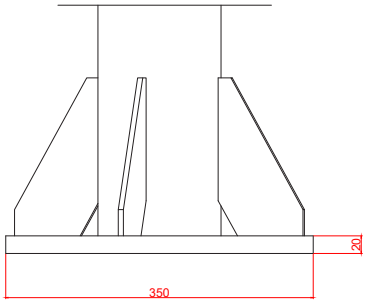
The Post for reduced spaces is made by a main vertical tube that will allocate the **Alsipercha**, manufactured with galvanized steel (10 mm thick), with a base of mínimum dimensions (350 mm diameter).

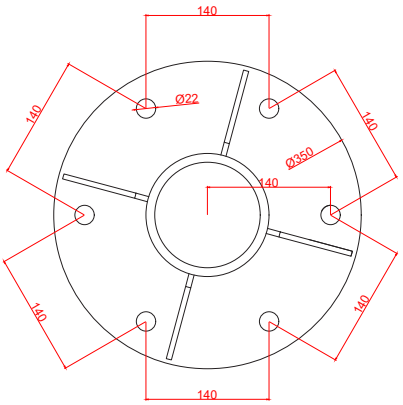
The main vertical post is welded to the base and reinforced with four brackets.

Dimensions with Alsipercha



Sizes of the PRS base

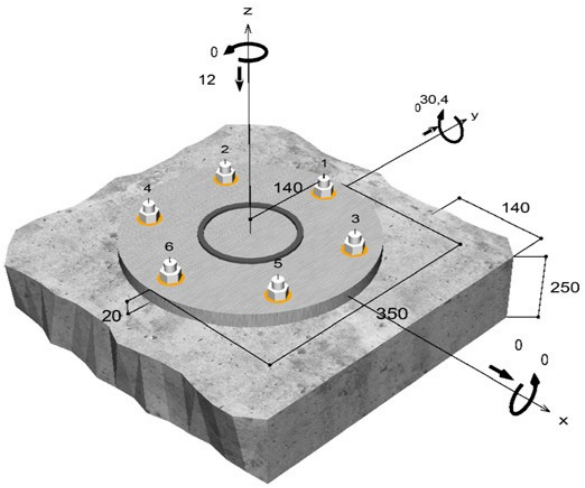




Anchoring requirements

- Calculation method: DITE 001 Guide, TR 029, Appendix C, Method A
- Anchor base: Normal concrete, C25/30, EN 206
- Condition of concrete: Compressed, dry perforation
- Edge reinforcement: With normal or mass reinforcement. No edge reinforcement

Load geometry (not considering own weight)

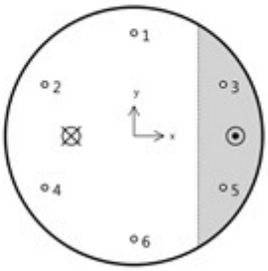


Resulting actions on the anchors:

Reactions to the anchor (kN)
Shear load: (+Traction, -Compression)

Anchor Nr.	Action to traction kN	Shear kN	Shear X kN	Shear Y kN
1	18,97	0,00	0,00	0,00
2	45,31	0,00	0,00	0,00
3	0,00	0,00	0,00	0,00
4	45,31	0,00	0,00	0,00
5	0,00	0,00	0,00	0,00
6	18,97	0,00	0,00	0,00

Maximum deformation to concrete under compression: 0,58 [‰]
Maximum stress to concrete under compression: 18,2 [N/mm2]
Resulting action under traction: 128,57 [kN]
Coordinates X/Y (-85 / 0)
Resulting action under compression: 140,57 [kN]
Coordinates X/Y (138 / 0)

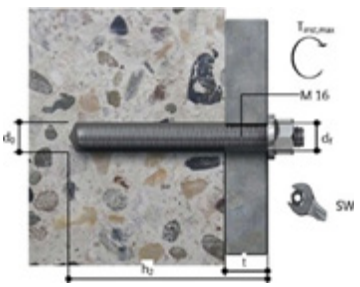


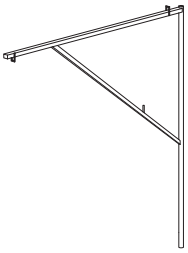
Systems to be used

- FISCHER injection resins: FIS SB 390 S, FIS SB 585 S, FIS SB 1500 S, FIS SB High Speed S.
- Object to fasten: Threaded rod M 16x200, zinc-plated/stainless steel, minimum strength 5.8

Assembly details

- Thread diameter: M16
- Diameter of the drill: d_o = 18 mm
- Drill depth: h_2 = 180 mm
- Anchor depth: h_{ef} = 160 mm
- Drilling method: Percussion
  By brush and compressed air
  T_{max} = 60 Nm





ALSIPERCHA CE / ANSI

Description: Overhead anchor point with built-in energy absorber, to combine with the post for reduced spaces.

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

ALSIPERCHA HOOK

Description: Component used to reach the subsequent Alsipercha, if required, to change the anchor point.

Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2

3M POST FOR REDUCED SPACES

Description: Alsipercha support component.

Code	Dimensions (mm)	Weight (kg)
83061	3,000 x 350	81

ANCHORING

Description: Accessory to anchor the Post for reduced spaces.

Code	Dimensions (mm)	Weight (kg)
83495	20 x 260	0.01

5.5M RETRACTABLE DEVICE EN 360

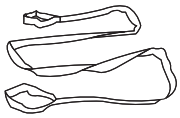
Description: Retractable component that locks on a sudden acceleration.

Code	Dimensions (mm)	Weight (kg)
83056	5,500	1.5

HARNESS

Description: Device anchoring the operator to the Alsipercha fall prevention system.

Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1



SLING (3M)

Description: An essential component used to move the system with a crane or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

Warning - Prepare and adapt the ground/surface where the system is intended to be installed, in order to ensure a 0º % of unevenness.

Assembly process

The following sequence of steps must be taken in order to correctly assembly the anchoring system:

1.- Clean and clearance the area where is planned to install the PRS.
2.- Lay out and drill the surface by using a percussion drill. (a pre-holes location template can be used for an easy process)

3.- Proceed to install the 6 chemical anchors per PRS (6 M20 stud bolts).
4.- Perform a traction test on the chemical anchors, arriving at 11 KN.

5.- Ensure the right level of the Surface where the post are going to be installed.
6.- By the use of an appropiate lifting equipment, proceed to install the PRF on the chemical anchors, inserting through the PRF holes, ensuring all of them fit correctly.

7.- Tighten up the 6 anchors.

8.- By the use of an appropriate lifting equipment, proceed to install the **Alsipercha** into the PRS, ensuring the system is fully inserted.

Installation elements

- Epoxy resin for chemical anchors.
- 6 M20x260 mm. zinc-plated stud bolts.
- 6 M20 mm. zinc-plated bolts.
- 6 x 20 mm. zinc-plated split lock washers.
- 6 x 20x60x4 mm. zinc-plated wide washers.

Tools

- Hammer drill.
- Blower pump, and brush to clean drill holes.
- Epoxy resin tool.
- Wrenches/nut tightening machine (dynamometric).
- Traction test kit.
- Leveller.

Lifting equipment

- Crane truck or according lifting equipment.

Description

The engineered MOBILE BASE UNIT designed for the **Alsipercha**, protect workers from the risk of falling from heights, providing portability and high versatility of location with no need to anchor the system.
The system has been designed to provide overhead fall protection to users when there is no possibility to install permanent fall protection systems, or there is the need to provide fall protection in different places and areas frequently.
It consists of a main **Alsipercha** body, fastened to a **MOBILE BASE UNIT (MBU)**, that provides the stability of the whole system thanks to a set of counterweights (1000-1200 kg).
Prepare and adapt the ground where the system is intended to be installed, in order to ensure a 0º % of unevenness.

Certified according to CE (EN 795:2012 type E)
(Notified body DEKRA 0158)
Engineered according to ANSI/ASSE Z359. 18-2017
(Notified body DEKRA 0158)

- Can be assembled by competent works personnel

Safety warnings

The **Alsipercha** + **MBU** has been designed to protect workers when there is a risk to fall from heights.
- Under no circumstances shall the product be used as a makeshift crane or lifting/lowering device.
- Under no circumstances shall any items, other than those provided with the system be used either in replacement or through preference as this may affect the performance of the product.
- Care should be taken in the transportation of the product between uses and locations. If any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- Care should be taken in the installation of the product and if any damage occurs or is detected in any part, the item should be withdrawn from use, inspected by a trained person and replaced if required.
- The location where the **Alsipercha** + **MBU** is being used should have a rescue plan in place, in the event of a fall incident.
- The device is only intended for use by one person at a time. **Under no circumstances shall multiple persons be attached to the device.**
- When a crane is lifting the **Alsipercha** unit, be aware of the movements made by the crane and keep workers at a safe distance.
- The **Alsipercha** + **MBU** is intended to be used within a zero factor fall arrest system. Make sure that the anchorage is always overhead and the lifeline is taut between the anchorage point and the worker.
- In case that this product is re-sold outside the original country of destination, it is essential that the reseller provides user instructions in the language of the country in which the system is to be used.
- Under no circumstances shall any item other than those provided with the system be used either in replacement or through preference as this may affect the performance of the product.
- The equipment must be inspected before each use.
- Do not used damaged or rusty materials, as this may affect product performance.
- The surface/ground where the system is intended to be installed, must have **0º % of unevenness**.

Always remember:

- Plan fall prevention at an early stage, this will benefit everyone.
- Use only safety-checked products.
- Restrict access below and around installation and working area to prevent injury to others from any fall hazard.
- Use tools designed for the type of work to be carried out.
- Keep the installation area in order.
- A safe workplace is a good workplace.
- Many fall accidents occur from a low height.
- Parts might be slippery when wet, be cautious when handling.

Check list prior to usage

Checking of the system shall be performed before each use, if any of the listed statements below are not satisfied make sure to correct any issue before using the product.

Checking includes the following steps (made by a qualified person):

- Ensure that there is no weld damage or deformation to any part of the system.
- Ensure that no corrosion that can affect the strength of the system has occurred.
- Ensure that the Feet are fully adjustable.
- Ensure that the base unit is level (uneaven not higher than 10º)
- Ensure there are no loose parts e.g. gravel, dirt, concrete etc. in any sleeves or tubes where another part shall be inserted.
- Ensure the correct insertion of the **Alsipercha** unit, and it rotates freely 360º.
- The surface/ground where the system is intended to be installed, must have **0º % of unevenness**.

Components of the system

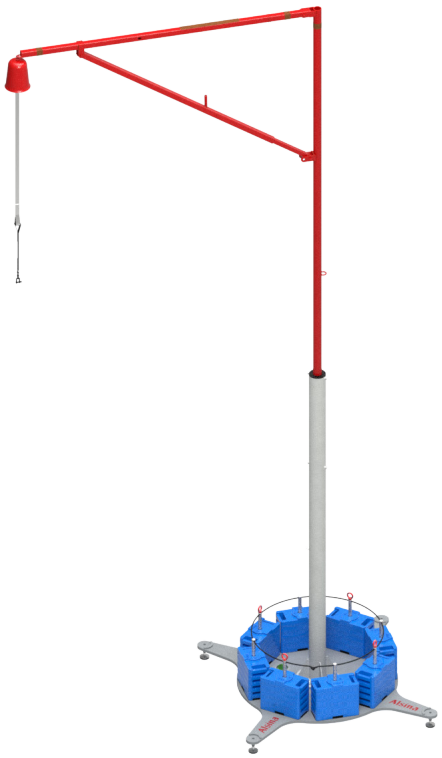
The system consists of a base, a post for housing the **Alsipercha** unit, and manual counterweights, that will provide the stability to the whole system in case of a fall.

The base is made by a circular steel plate with a 1320 mm diameter, with four star-shaped extensions to house the support levelling feet (maximum width 2240 mm).

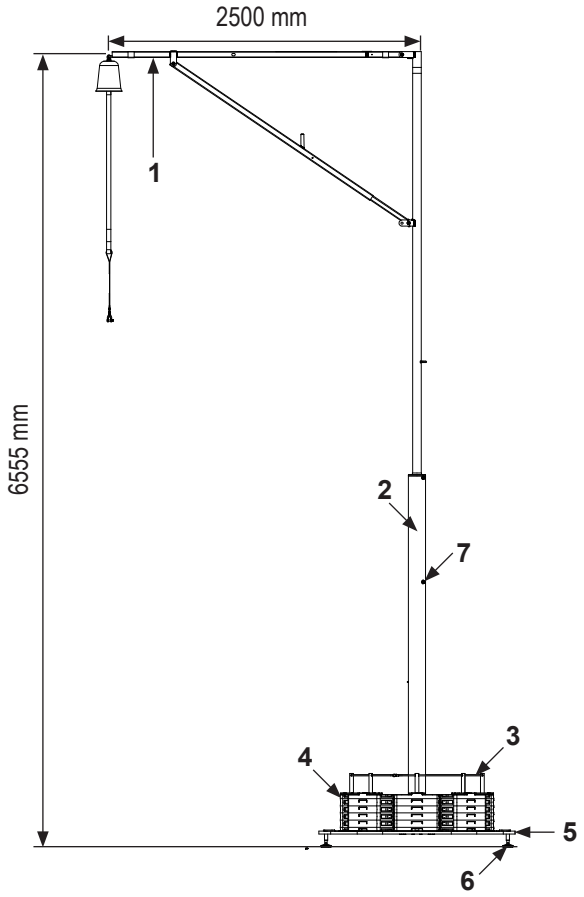
The base also includes a built-in level, rubber stickers for the location of the manual counterweights, 6 M20 bolts and bars to fit the counterweights.

In the center are the holes to install the main post that will House the **Alsipercha**, by using 6 M20 bolts.

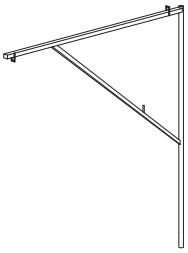
The 40 counterweight blocks weighing 25 kg each (supplied with the system), must be placed over the base rods. This weight will provide the system stability in case of activation due to a fall of a user.



Dimensions with Alsipercha



Reference	Units	Description
1	1	Alsipercha unit
2	1	Post
3	1	Safety lock
4	40-48	Counterweights (25kg)
5	1	Base (including level, rubber stickers, adhesives, M20 bolts and counterweight rods)
6	4	Leveling feet
7	2	Rotation locking system (handles)



ALSIPERCHA CE / ANSI

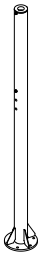
Description: Overhead anchor point with built-in energy absorber, to combine with the Mobile Base Unit.

Code	Dimensions (mm)	Weight (kg)
84411	2,500 x 4,300	80

ALSIPERCHA HOOK

Description: Component used to reach the subsequent Alsipercha, if required, to change the anchor point.

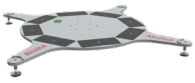
Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



3M POST FOR REDUCED SPACES

Description: Alsipercha support component.

Code	Dimensions (mm)	Weight (kg)
83061	3,000 x 350	81



ALSIPERCHA MOBILE BASE UNIT

Description: Base that stabilizes the Alsipercha system.

Code	Dimensions (mm)	Weight (kg)
84849	1,100 x 500	350

ALSIPERCHA MBU ROD

Description: Threaded rod through which the counterweights will be installed.

Code	Dimensions (mm)	Weight (kg)
83848	460	1.10

MBU ALSIPERCHA LIFTING ROD

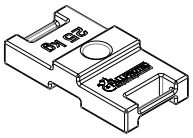
Description: Threaded bar with eyebolt 84137 that allows the MBU kit to be moved by a crane or other auxiliary lifting elements.

Code	Dimensions (mm)	Weight (kg)
83136	520	1.30

MBU LIFTING ROD EYEBOLTS

Description: Lifting eyebolts combined with lifting rod 83136, that allow the MBU kit to be moved by a crane or other auxiliary lifting elements.

Code	Dimensions (mm)	Weight (kg)
84137	90	0.30



MBU COUNTERWEIGHTS (25KG)

Description: Individual counterweights to guarantee the stability of the system.

Code	Dimensions (mm)	Weight (kg)
84832	370 x 80 x 18	25

5.5M RETRACTABLE DEVICE EN360

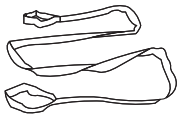
Description: Retractable component that locks on a sudden acceleration.

Code	Dimensions (mm)	Weight (kg)
83056	5,500	1.50

HARNESS

Description: Device anchoring the operator to the Alsipercha fall prevention system.

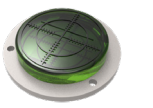
Code	Dimensions (mm)	Weight (kg)
84415	500 x 150	1



SLING (3M)

Description: An essential component used to move the system with a crane or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62



MBU BASE LEVELLER

Description: Replacement element that corrects possible unevenness on the surface used.

Code	Dimensions (mm)	Weight (kg)
83834	90	0.30

MBU COUNTERWEIGHT LOCK

Description: Lock that prevents the counterweights from being handled after their installation.

Code	Dimensions (mm)	Weight (kg)
84859	350	1.20

Assembly process

The following sequence of steps must be taken in order to correctly assembly the anchoring system:

1.- Ensure that the level of the surface where the System is intended to be installed is = 0º. Then position the base in the place chosen for its location. The leveling feet are capable of absorbing unevenness up to 10º.

2.- Adjust the leveling feet using the level installed on the base, as a guide.

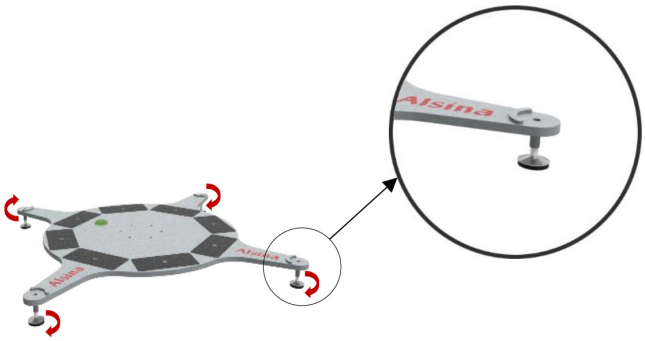


Fig. 4. Leveling feet adjustment

3.- Position and fasten the post unit to the base, by using the M20 bolts provided.

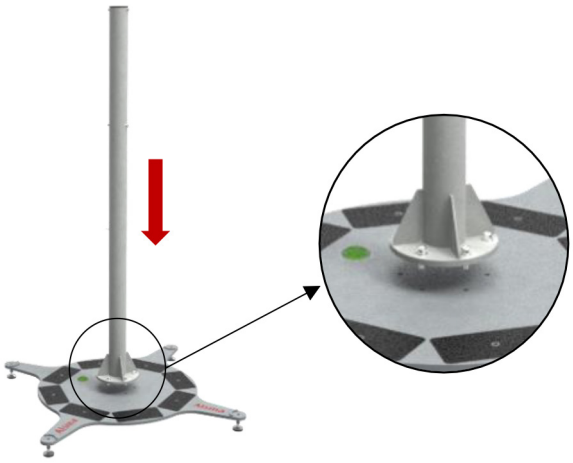


Fig. 5. Positioning and fastening of the post.

4.- Position and fasten the **Alsipercha** to the MBU, by using an auxiliar equipment.

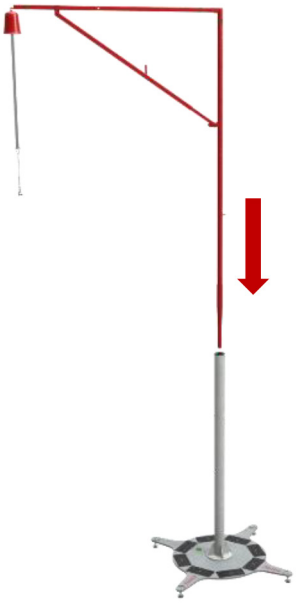


*Fig. 6. Positioning and fastening the **Alsipercha***

5.- Thread the rods by using the specific wholes on the base, placing the upper holes so that the safety lock can pass through them correctly.
A total of 4 MBU ALSIPERCHA ROD (83848) and 4 MBU ALSIPERCHA LIFTING RODS + 4 MBU ALISPERCHA LIFTING ROD EYEBOLTS (83136+84137) will be installed.
The bars will be installed in the threaded holes at the MBU base, and their installation order must always be alternated.
NEVER install bars of the same type continuously.
E.g.
hole 1 = 83848
hole 2 = 83136+84137
hole 3 = 83848
hole 4 = 83136+84137
hole 5 = 83848
hole 6 = 83136+84137
hole 7 = 83848
hole 8 = 83136+84137

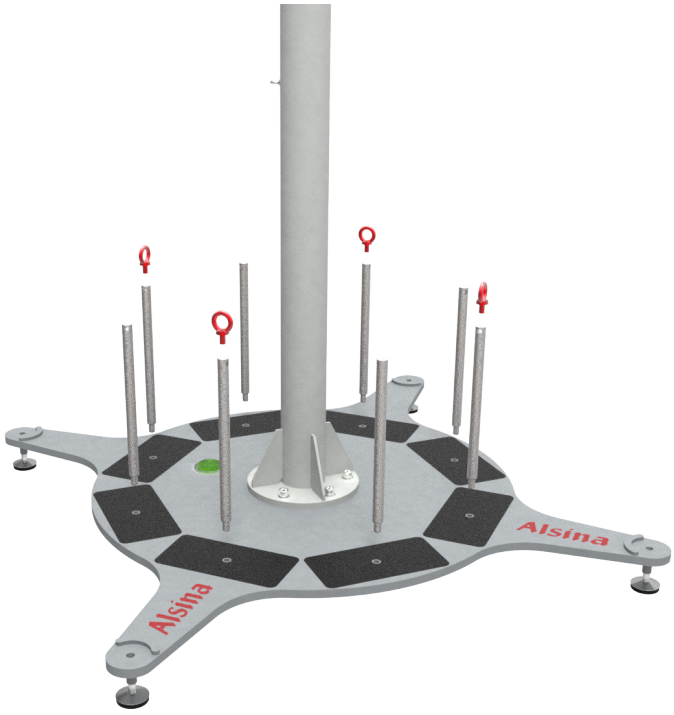


Fig. 7. Fastening the counterweight rods

6.- Place the 40 manual counterweights in their positions (total 1000 kg.).

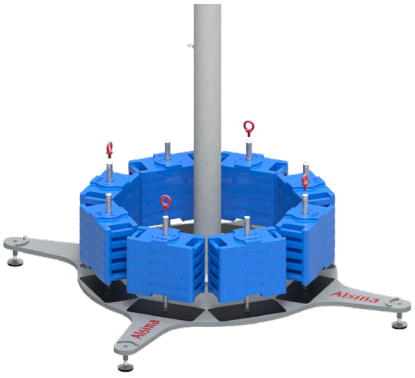


Fig. 8. Positioning the counterweights

7.- Fit the safety lock to prevent the counterweights from being handled.

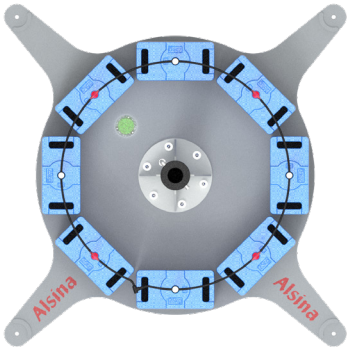


Fig. 9. Base with safety lock installed

8.- Finally, check the level of the base again and correct if necessary, and ensure the correct instalation and free rotation of the **Alsipercha** (360º).

Relocation and locking system

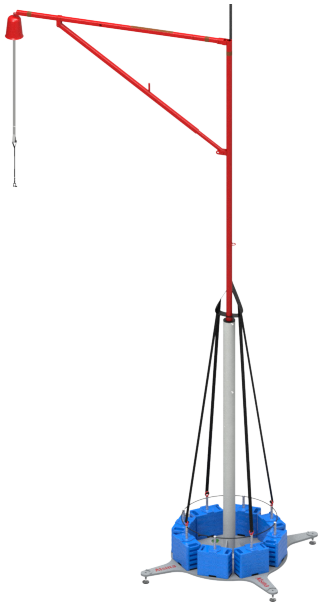
It is possible to move the entire system without having to dismantle the components, bearing in mind the following aspects:

1.- Adjust the 2 handles on the locking system until they are fully closed (1 on each side):

2.- In all cases in which the **Alsipercha** + **MBU** system is to be moved, the locking system must be activated - **always before it is moved** - to prevent the **Alsipercha** from being able to rotate accidentally during transport.

3.- Once located in the required position and ensuring the system is correctly level, the locking system can be disabled and the system will be ready for use. If you prefer, it can also be used with the locking system activated, without the **Alsipercha** rotating.

4.- The **Alsipercha** + **MBU** kit may also be moved to another location using a crane.
To do that, connect the sling or chain to the 4 LIFTING ROD EYEBOLTS (84137), previously installed on the 4 MBU ALSIPERCHA LIFTING RODS (83136).
Before proceeding to change its location, always check that the configuration and position of the connection and lifting elements used match the following configuration (see image):



Assembly material

- No other material apart from that supplied is required.

Tools

- 17 mm. fixed wrench.
- 17 mm. hexagonal wrench (Allen).

Lifting methods

- Crane truck or according lifting equipment.

Description

The **Alsipercha** + **RAIL**, designed and tested in compliance to EN:795:2012, CEN/TS 16415:2013 and ANSI/ASSE Z359.18-2017, is an overhead anchor system, comprising an **Alsipercha** anchor and a rigid lifeline RAIL, that protect workers against falls from heights, especially during the work over vehicles, trailers or machinery.

The **Alsipercha** + **RAIL** system consists of an aluminum rail combined with trolleys for free operator movement along the entire run, protecting users against fall at every moment.

The **Alsipercha** + **RAIL** system allows for movement over the area to be protected, without the operator having to unhook from the rail at any time. The system allows a maximum number of 2 users per 6m span.

*Example of installation of **RAIL**.*

The **Alsipercha** + **RAIL** system, is designed to protect people from falling from heights. Users must wear harness and PPE according to the local standards and regulations.

The main criteria for use of the **Alsipercha** + **RAIL** life line are:

- Number of users 1, 2, 3, 4 (depending on the length of the system), maximum 2 per 6m span.
- Maximum distance between **Alsiperchas** = 6 meters (a study is required for longer distances).
- The trolley follow the user without delay.
- The system doesn't suffer permanent deformation after being activated by a fall.
  (In which case must be inspected immediately after a fall occurs).
- The surface/ground where the system is intended to be installed, must have 0º % of unevenness.

Prepare and adapt the ground where the system is intended to be installed, in order to ensure a 0º % of unevenness.

Free-fall height

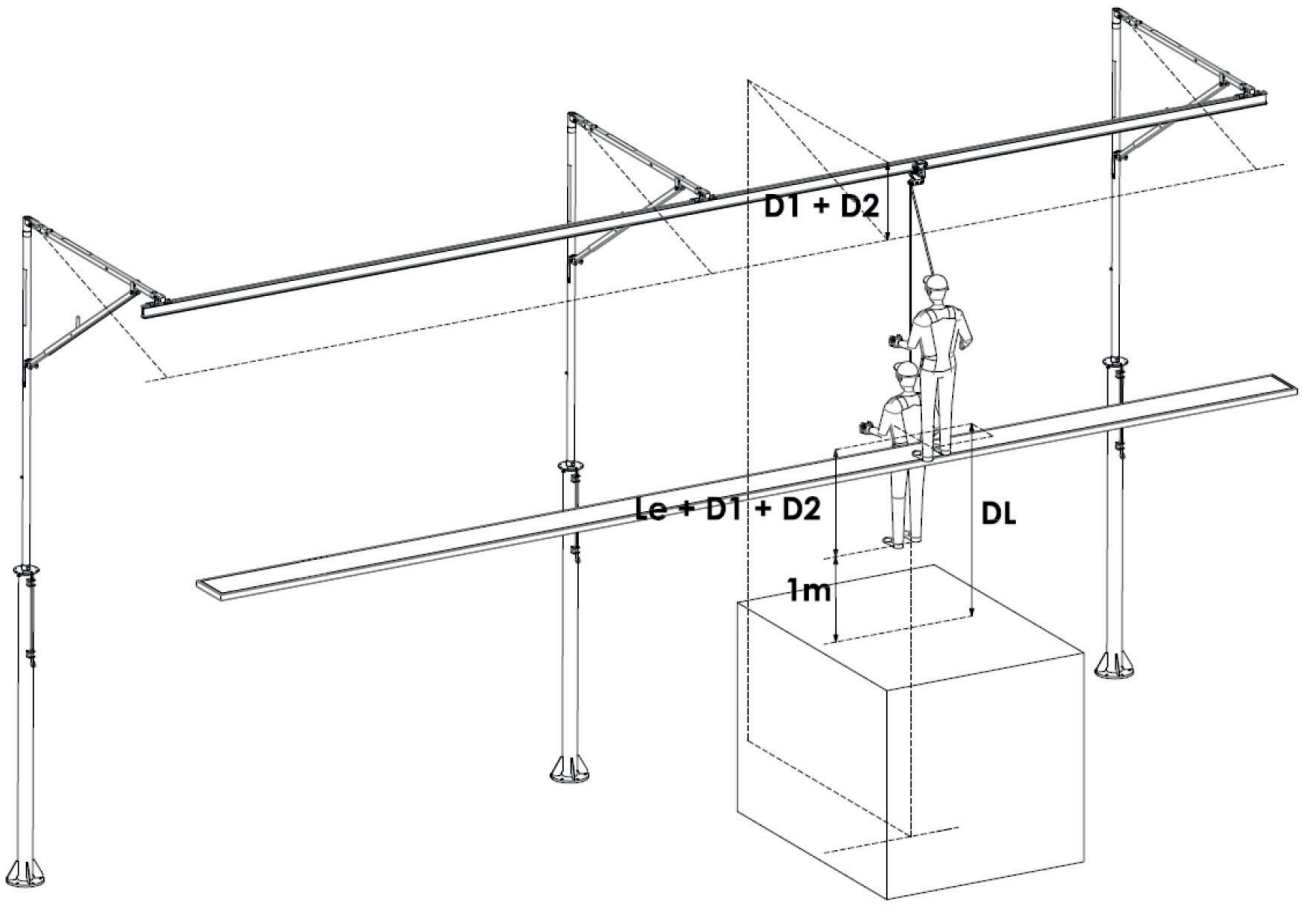
The free-fall height must be bigger than the free-fall distance, so that user do not impact any obstacles in case of fall.

It is essential that enough free distance is verified to closest underlying object.

The free-fall height is the sum of the following factors:
- The braking distance of the energy absorber <Le> (r*efer to the manufacturer's user manuals for specific value*)
- The RAIL deflection distance in use <D1> (maximum value = 3cm)
- The impact absorption distance of the RAIL in case of fall of a user <D2> (maximum value = 86 cm)
- Safety distance = 1m

The safety equation result to: Le +D1+ D2 + 1m< DL (free fall distance)
Le < 0,5 m

With Alsipercha ➔ D1: in a worst-case scenario = 3cm / D2: in a worst-case scenario = 86 cm



Components of the Alsipercha + RAIL system

Alsipercha

The **Alsipercha** consists of a 4.35 m tall mast and an arm with a radius of 2.5 m. The system includes a built-in energy absorber (diagonal device), that reduce the impact forces in case of activation by a fall. Two supports connect the **Alsipercha** to the **RAIL**.
The Alsipercha, made of elastic and high quality steel, weights 80 kg.

- The rigid lifeline RAIL is made of ENAW6060 T6 anodized aluminum alloy, also available in a gray powder coat finish (other colors are available to order). The rails are supplied in 6 m spans. Other measurements are available under demand. Weight = 5 kg/m.

- Combined with the RAIL, the Alsipercha is compatible with the following accesories/complements: (refer to the specific installation chapter on this document): Tripod, Post for reduced spaces, column clamps, counterweight MF, Mobile Base Unit and wall brackets).

Configuration

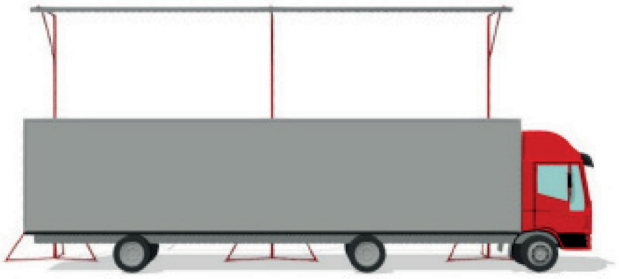
The total length of the **Alsipercha** + **RAIL** combination, will depend on the total length intended to protect workers. Below are the suggested configurations, in accordance to the most common truck lengths. Additional or different lengths must be quoted and studied.

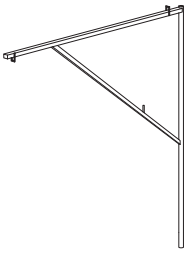
Configuration for 6-meter trucks

Distance between **Alsiperchas** = 5.700 mm

Configuration for 12-meter trucks

Distance between **Alsiperchas** = 5.700 mm





ALSIPERCHA CE / ANSI GV

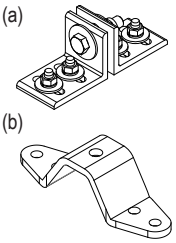
Description: Overhead anchor point with built-in energy absorber, to combine the RAIL lifeline and use most of the many different accessories/ supports in the Alsipercha range.

Code	Dimensions (mm)	Weight (kg)
83471	2,500 x 4,300	80

ALSIPERCHA HOOK

Description: Component used to reach the subsequent Alsipercha, if required, to change the anchor point.

Code	Dimensions (mm)	Weight (kg)
83418	140 x 2,850	2



RAIL SUPPORT CONNECTORS (FIXED / FOLDING)

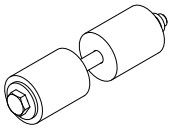
Description: Part connecting the Alsipercha and the RAIL, in FIXED position (a) and in FOLDING position (b).

Code	Dimensions (mm)	Weight (kg)
83047 (a)	100 x 100	0.35
83837 (b)	260 x 60 x 40	0.70

RAIL INNER REINFORCEMENT

Description: Part reinforcing the inside of the RAIL when it is to be combined with additional RAILS for lengths over 6 m.

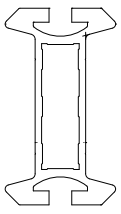
Code	Dimensions (mm)	Weight (kg)
83057	250 x 250	0.20



STEEL/NYLON RAIL BUFFER

Description: Part preventing the RAIL from coming out of the carriage with retractable device.

Code	Dimensions (mm)	Weight (kg)
83049	70 x 170	0.15



ALUMINUM RAIL (ATEX)

Description: Rigid lifeline that connects to the Alsipercha and over which the carriage with retractable device moves that keeps the user protected.

Code	Dimensions (mm)	Weight (kg)
83051	6,000 x 113 x 63	30 (5 kg/m)

IDENTIFICATION BATCH

Description: Identification batch for the installed system.

Code	Dimensions (mm)	Weight (kg)
83052	300 x 200	0.10

RETRACTABLE ADVANCING CARRIAGE

Description: Device that moves the retractable fall arrester device over the RAIL.

Code	Dimensions (mm)	Weight (kg)
83053	150 x 260 x 170	1.2

5.5M RETRACTABLE DEVICE EN 360

Description: Retractable component that locks on a sudden acceleration.

Code	Dimensions (mm)	Weight (kg)
83056	5,500	1.5

HARNESS EN 361

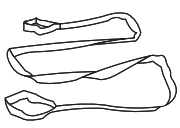
Description: Device anchoring the operator to the Alsipercha fall prevention system.

Code	Dimensions (mm)	Weight (kg)
83058	500 x 150	1

CARABINER EN 362

Description: Part connecting the retractable device to the Alsipercha and to the user's harness extension.

Code	Dimensions (mm)	Weight (kg)
83054	100	0.50



SLING (3M)

Description: An essential component used to move the system with a crane or remove it once the work is complete.

Code	Dimensions (mm)	Weight (kg)
84414	3,000	0.62

Assembly

For the step by step installation procedure of the **Alsipercha** system, please refer to the specific chapter for each type of **Alsipercha** support.

Once the necessary **Alsipercha** units have been fastened to the selected support, the **RAIL** must be installed following the below step by step procedure:

The easy and suggested way of installing the **Alsipercha** + **RAIL** system, is laying out the RAIL on the ground.

By using an appropriate lifting equipment, proceed to lift and connect the assembled **RAILS** to the Alsipercha units.

A RAIL INNER REINFORCEMENT (83057) must he installed between the union of each 2 **RAIL** span of 6m.

Step 1

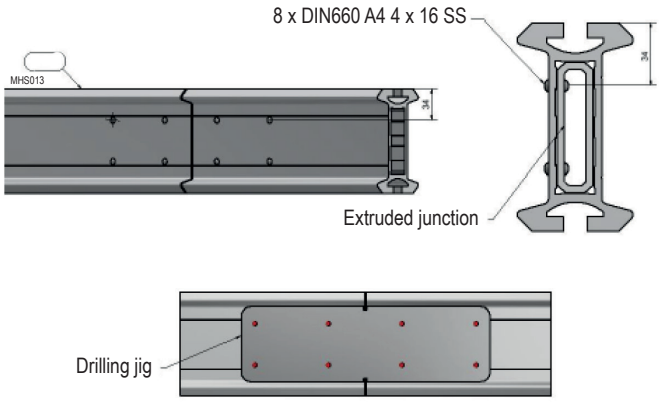
Installation of the **Alsipercha** with the selected support (follow **Alsipercha** installation manual according to each type of support).

Make sure that distances between the **Alsiperchas** do not exceed 5.7 m.

Ensure that the level of the ground to which is intended to install the system is = 0º

Step 2

Proceed to assemble and joint the set of 2 rails (83051) for 12m, by using the reinforcement joint (83057). Rivet the reinforcement joint (83057), making sure it is centered as follows:



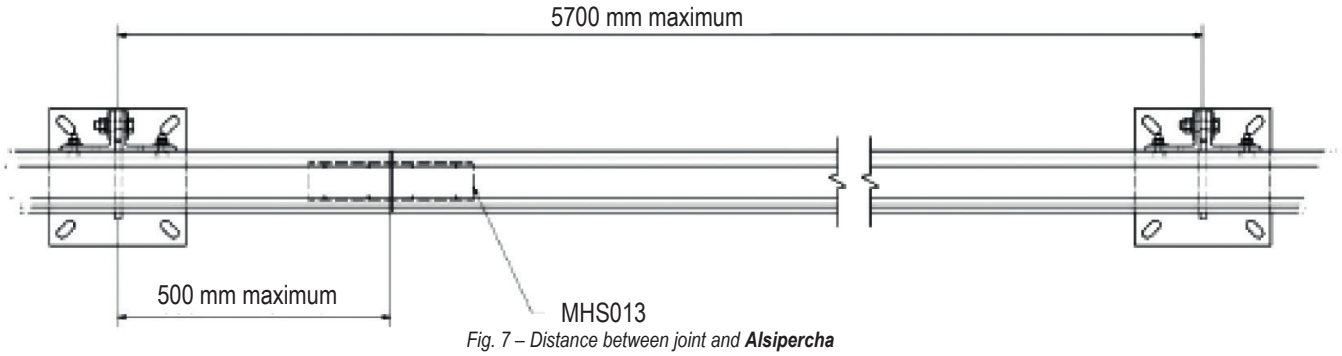


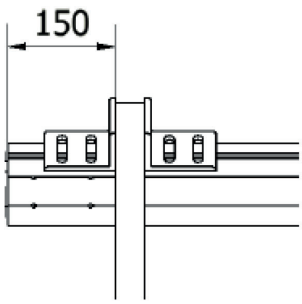
*Fig. 7 – Distance between joint and **Alsipercha***

Step 3

Fit the round-head bolts (M12 DIN603 A2) as shown in the following picture (4 units per **Alsipercha**):

Step 4

Position the two joint/supports (83047) without tightening completely the nuts.

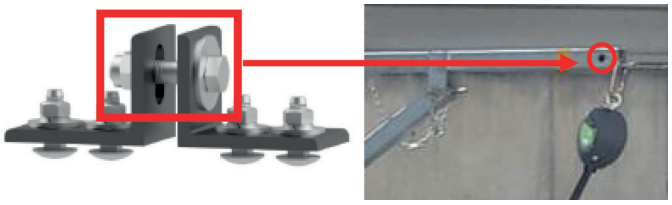


Step 5

Position and connect the **RAIL** (83051) with the joint/supports (83047) using auxiliary lifting methods and fasten them with the M12 DIN603 A2 bolts (provided with the joint/supports (83047)).

Step 6

Connect joint/supports (83047) to the **Alsipercha** upper tube, using the hole shown below, using the screw metric 16x100mm A2, as follows:



Step 7

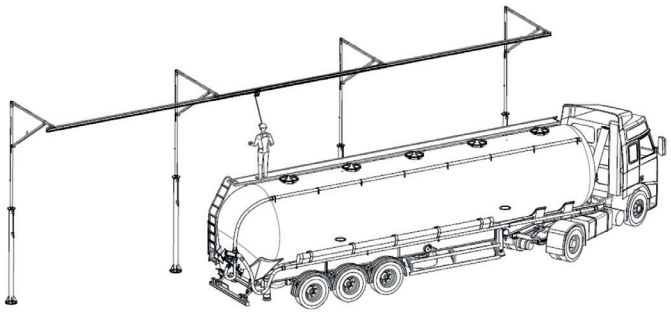
Fasten all joint/supports (83047) nuts and screws, and proceed to install the SRL trolley.

Step 8

Installation of the STEEL/NYLON RAIL BUFFER (83049). Drill the **RAIL** (it is recommended to perform it on the ground), and pass the central screw, adjusting the two protections on both sides of the **RAIL**. This action must be performed on both ends of the **RAIL**.

Step 9

Check that the SRL Trolley moves correctly along the entire length of the system, and that the whole system works properly and is safely connected before the first use.



Appendix 1: Conditions of use on site

Below are the guidelines for reviewing each component of the Alsipercha system. Reviews should be performed regularly, once per year at the very least.

As explained in Alsina's Alsipercha Assembly and Safety Manual, this review does not replace the visual inspection that the user should perform each time he or she uses the Fall Arrest System.

Retractable Review Procedure

Control guidelines	Procedure
Check that the belt **winds automatically** and unwinds normally along its whole length.	If it does not work, **remove from service since it is faulty**.
Check that the locking function is, by pulling the belt sharply and observing that it locks.	If it does not work, **remove from service since it is faulty**.
That the textile is in perfect condition, **without tears or loose ends.**	If it does not work, **remove from service since it is faulty**.
That the metallic parts **are not oxidised** and that the karabiners work and **block correctly**.	
It is important to check that the continuous energy absorber protected by the plastic and the fibres **forming it, have not broken**.	If it does not work, **remove from service since it is faulty**.

Inspection procedure for main items (Alsipercha, column clamps, tripod, counterweight MF, wall bracket, post for reduced spaces, MBU and RAIL), as well as for the connection/supports/accesories.

Control guidelines	Procedure
Place the item on an stable surface, to: - Check that the bolts, pins, and nuts of the various extensions are in good condition and that they can move freely. - Check that the extensions are neither askew nor misshapen (maximum tolerance in both directions is 5 mm). Pay special attention to ensuring that the diagonal tube with spring is straight. - Clean the concrete and particularly some areas between the two lugs, as this is the area where various hanger accessories are housed. If these are closed, open them with a hammer, until the beam can enter. - Inspect the welds, especially on the ring to which the hood is attached.	If problems are identified with any of the above, contact the Alsina Service Department.

Warning - Never remove the Alsipercha Body's diagonal tube. Handling the tube may be dangerous. If any problem is observed in this diagonal, contact the Alsina Commercial Technician.

Hook Review Procedure

Control guidelines	Procedure
- Check that the hook is neither askew nor misshapen.	If the deformation is minor, it can be fixed provided that the tube structure is not misshapen.
- Clean the concrete.	
- Check that there are no fractures.	

Leveller Review Procedure

Control guidelines	Procedure
- Check that the leveller is in its original condition. Verify that it enters and exits a housing tube that is in good condition. - Check that there is no washer. Verify the level. Check that the leveller is not broken.	If problems are identified with any of the above, contact the Alsina Service Department.

Textile Components review procedure: Sling, Harness, HARNESS EXTENSION with Jacket

Control guidelines	Procedure
- Check that all textile elements are present. Check that there are no tears (especially along the edges) or loose threads. - The textile material must be kept in a clean, dry place.	Otherwise reject

General usage considerations

These considerations complement those described in the system's assembly and disassembly process.

The system has been designed and calculated for the specific uses and applications described in this manual. Therefore, Alsina accepts no responsibility for the use of the equipment in situations other than those described in this manual.

The Alsina Group does not participate in the management or execution of the project, and the client is solely responsible for the proper use of the materials supplied.

All the components have sufficient strength and stability to support the loads and stresses described in these instructions. It is essential to place all the system's components with all the accessories mounted and properly assembled.

The technical operating instructions, safety indications and data on loading conditions must be scrupulously observed and followed. Failure to respect these indications may lead to accidents and severe injuries (or death) and to considerable material damage.

Systems should not be mixed as they may be incompatible and are neither designed for nor adapted to the system. Alsina rejects all liability if the system components are replaced with similar components supplied by another company.

Before starting assembly, the person in charge must plan for loading and unloading, material storage, and laying out and marking the areas where the work is to take place, in accordance with the general organization of the construction work.

The following PPE must be used in the assembly/disassembly: Gloves, boots, goggles, helmet, reflective vest, etc.

For heights greater than 3.5 m, a safety harness must be used.

The equipment must be assembled by specialized personnel.

Work areas must be kept clean and orderly.

The largest possible number of operations must be carried out on the floor.

Formwork must be interrupted in the event of heavy rain, snow, lightning storms, or winds over 65 km/h (service wind pressure of 0.2 kN/m²), removing any materials or tools that may be loose.

Sources of fire are not allowed near the formwork area.

Workers must always access the work area through the areas made available for this purpose.

Storage

Having an area designated for compiling and controlling all the elements supplied is recommended.

Areas must be delimited for the storage of materials or accessory items for formwork, assembly, use and disassembly of formwork elements. Personnel not involved in assembly or disassembly shall not be allowed inside these delimited areas.

Storage shall be properly organized in suitable locations, away from passageways.

All material must be properly stacked, without exceeding safe heights, to avoid the risk of toppling or causing difficulties when roping it for lifting or transport. Work materials and tools must be placed or stored so that they cannot collapse, fall or turn over.

Materials stored must be stable, arranged horizontally and wedged in place.

Materials must not be stored on insecure slopes, unstable or loose ground, or loose or unstable elements.

If the material is strapped, the straps should not be removed while there are workers in its path.

Transporting Materials

There must be proper coordination between the crane worker and the worker who hooks or guides the load. The crane worker must have a clear view of the trajectory of the load or, failing this, must be assisted by a guide, communicating with each other using a pre-agreed set of signals.

Before starting load hoisting, the worker must move away from the sweep area of the load. When the load is moving, no worker shall be on it, and movements above or near people should be avoided. The presence or passage of people under suspended loads must be avoided.

The load must be well balanced and must be raised and lowered slowly, avoiding abrupt acceleration and deceleration.

Loads must be lifted vertically, never diagonally, avoiding rocking and horizontal dragging movements. When necessary, guide ropes or cables adequate for the load being supported must be used for this purpose.

When lifting heavy or bulky loads, the use of rocker arms is recommended.

If the loads could collide with the structure, other on-site elements or personnel, retention or load-guiding cables should be used.

To prevent objects falling onto people and/or materials during hoisting, loading or unloading operations, using trays or transport containers, always following the manufacturer's instructions, is recommended. Alsina provides the ALSINA CONTAINER item. Alternatively, they can be lifted using slings, distribution beams, rocker arms, etc. in packages strapped at both ends, hanging the load, thus avoiding horizontal displacement of the stable assembly. Lifting systems must be with closed hooks. The crane worker, who will have received the proper training, shall always be responsible for final review of the attachment of the load.

Stacking the ALSINA CONTAINER more than three high is not recommended. They must be stacked on a stable, flat area.

Simultaneous movements shall not be carried out with the crane.

Loads must be hoisted using mechanical equipment, with a load capacity sufficient for the load being lifted.

Equipment Maintenance

A pre-established expiration date cannot be established for formwork, but improper use of equipment that could cause damage to it must be avoided.

Alsina, S.A. supplies the formwork material and is responsible for delivering the equipment in good working condition, in accordance with the criteria in our quality manual. When assembly is not carried out by Alsina, the user must accept responsibility for proper use and maintenance of the equipment.

The users are always responsible for maintaining all equipment, whether rented or the customer's own property.

When assembling, the material must always be checked by a qualified individual who will verify that the equipment is apt for use or reject it, especially in the event of a person falling. There are specific control guidelines for using the main components of the system on site. These are detailed in the appendix at the end of this section (Appendix 1). In accordance with these criteria, when a part that is not fit for use is identified, it must be rejected, avoiding the use of defective or damaged parts.

The condition of the material must be checked before the start of a day after strong winds, rains, snow, etc. since it is possible that a part could have been dropped, displaced, loosened or damaged.

Annex: Regulationsin Spain

Spanish legislation requires that assembly and dismantling of the system must be performed by personnel duly trained, as described in Law 31/1995 and the modifications to this law contained in Law 54/2003, for work of this type, and must have the information and tools required for the proper performance of the task.

Also, the contents of Royal Decree 1627/1997, on minimum health and safety provisions applicable to construction work, as well as in Royal Decree 2177/2004, which modifies Royal Decree 1215/1997, which establishes the Minimum Health and Safety Provisions for Use of Work Equipment by Workers, on the subject of temporary work at heights.

Regulations also require mandatory use of personal protective equipment adequate for the work to be performed, as described in Law 31/1995 and its further development in Royal Decree 773/1997.

In cases where workers from multiple companies are active concurrently, there must be coordination on the subject of prevention, as defined in article 24 of Law 31/1995 and its further development in Royal Decree 171/2004.

A	DEVICE IDENTIFICATION SHEET
(A) Distributor / Reseller / Details	
(B) Manufacturer	**Encofrados J. Alsina S.A.** Pol. Ind. Pla d'en Coll Camí de la Font Freda, 1 08110 - Montcada i Reixac (Barcelona - Spain)
(C) Product (type, model, code)	
(D) User (company, name and address)	
(E) Serial number / batch	
(F) Year of manufacturer	
(G) Purchase date	
(H) Date of first use	
(M) Notified Body that performed the CE certification / check	**DEKRA Testing and Certification GmbH** Dinnendahlstrasse 9 - D-44809 BOCHUM Phone : +49 (0) 234 3696 105 Website : www.dekra-testing-and-certification.de

B	DEVICE PERIODIC		CHECK SHEET			
No.	**(O)** Date	**(P)** Reason for check	**(Q)** Name and signature of the person responsible for checking	**(R)** Notes (defects found or other relevant information)	**(S)** Check results	**(T)** Date of next check
1		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
2		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
3		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
4		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
5		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
6		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
7		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
8		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
9		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	
10		□ Periodic check □ Additional check			□ Device fit for use □ Device unfit for use □ Device to be checked	