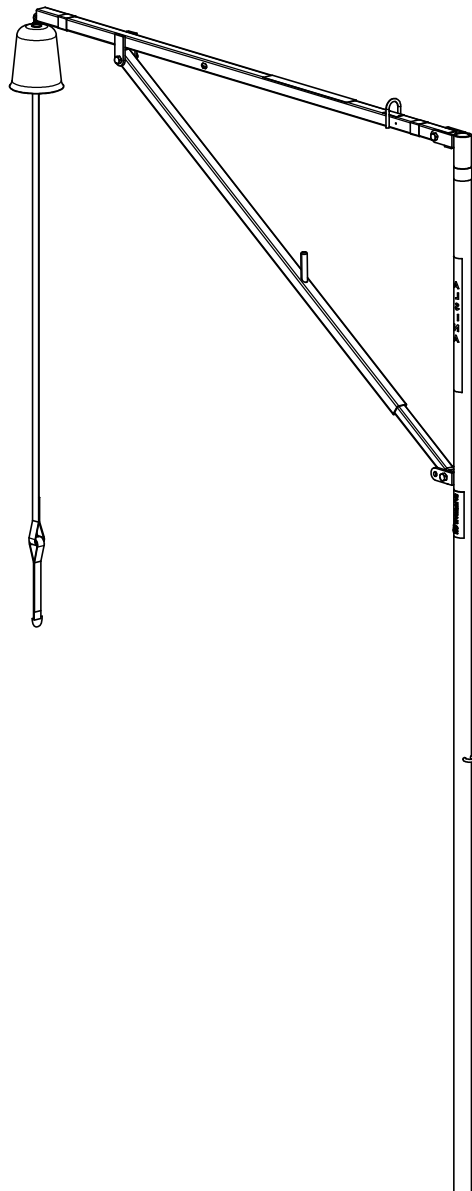


ALSIPERCHA SYSTEM

Assembly, Use and Safety Instruction Manual

Code: 6490009USJZ / 6790009USJZ



General Requirements



WARNINGS AND LIMITATIONS

Proper precautions should always be taken to remove any obstructions, debris and other material from the work area that could cause injuries or interfere with the operation of the system. Also, caution should be taken to ensure all equipment will be clear of all other recognized hazards and proper ventilation has been provided in the work area before work begins.

Note: Users should be familiar with the pertinent regulations governing this equipment. All individuals who use this product must be correctly instructed on how to use the system and must read and understand the following instructions before using the system.



WARNINGS

- Only trained personnel should use this system and its components.
- Do not use the system if the unit or any part of the system appears to be damaged.
- Do not use the system if any components do not operate properly.
- Use in highly corrosive or caustic environments dictates a more frequent inspection and servicing program to ensure the integrity of the system is maintained.
- Do not attempt to repair this system
- Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.
- Employer must provide for prompt rescue in the event of a fall.
- All equipment must be inspected by a users before each use.
- All equipment must be inspected by a users at least once a year.
- Record of inspected may be required. Some individual components may require inspection at shorter intervals.
- Any component exhibiting deformities, unusual wear, or deterioration must be immediately discarded.
- This product is designed for personal fall protection. Never use fall protection equipment for purposes other than which it is designed.
- Never use fall protection equipment for towing or hoisting.
- Always check for obstructions below the work area to make certain the potential fall path is clear.
- Use only approved ALSINA hardware with this product.
- Do not attempt to move the unit while workers are attached.
- The user must carry out a Risk Assessment prior to using this system

- Do NOT Combine or connect products other than system components supplied by ALSINA.
- Only harnesses meeting ANSI Z359.11 or CSA Z359.10 may be used



LIMITATIONS

- **SYSTEM CAPACITY:** The maximum number of user's per unit is 1 (one). The capacities are based on maximum user's weight, including tools, clothing, etc of 310 lbs. (140,6 Kgs) total weight. **WARNING:** Maximum capacity for the system is 310 lbs (140,6 kgs). **DO NOT EXCEED THIS WEIGHT.**
- **COMPONENT COMPATIBILITY:** The ALSIPERCHA is designed for use with ALSINA retractables and approved components only. Substitution or replacement with non-approved components will endanger the compatibility within the system and may affect the reliability and safety of the total system. It is recommended the user attaching to this device must only use ALSINA retractable lifelines and approved compatible connectors.
- **LIFTING RINGS:** The lifting ring, is to be used solely for lifting the unit up by crane or other means of a lifting or hoisting type structure to locate the unit into the housing tube or any other connector component provided with the system by ALSINA. **DO NOT USE THE LIFT RING FOR FALL PROTECTION.**
- **MOVING THE SYSTEM:** Always disconnect before attempting to move the unit. Move the unit by using the sling connected to the crane handling ring. Never expose a worker to a fall hazard by moving the system while connected to the unit.
- **WORKING DISTANCE:** The maximum working distance forward, measuring from the vertical boom is 17,9 ft (6,00m). **WARNING: DO NOT EXCEED WORKING DISTANCE REQUIREMENTS.**
- The structure on which the system is mounted must be capable of bearing the weights indicated

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The descriptions, properties and illustrations included in this document are only general indications—they are not guarantees and should not be used as a reference for safety in the application of our systems. In order to be able to offer a product of the highest quality, we reserve the right to incorporate possible improvements or modifications without prior notice.

We recommend consulting Alsina's Technical Department to guarantee the proper use of our equipment, especially when used with other manufacturers' products.

Alsipercha (Fall Arrest System)

The ALSIPERCHA and related equipment is designed to provide portable fall protection for workers subjected to fall hazards during leading edge construction.



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.

Alsipercha

A safety system, especially useful for PERIMETERS. The system provides fall protection 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 external installers.

Features of the system

- Allows the operator to work safely covering an area of 1345.49 ft² and moving within a radius of 17,9 ft around the vertical boom.
- Inverted "L" shaped metal structure measuring 8' - 2 long and 14' - 1 high (11' - 5 when attached to the column).
- Metal structure weighing 176.37 lb, made of high quality steel.
- Retractable device measuring 10' maximum length.
- Housing steel tube of 3' height.
- To be handled by crane.
- With a wide range of accessories for use in any building site situation, providing safety at all times.
- The system has been designed for columns spaced at up to 26' (8 m) intervals.

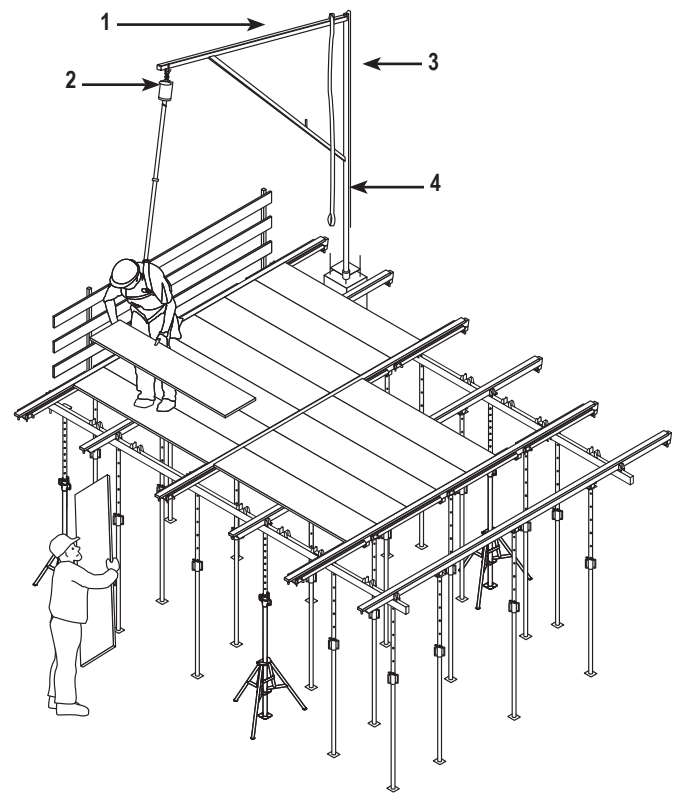
ANSI/CSA

Engineered according to ANSI Z359.6 and CSA Z259.16 standards



CE mark according to EN-795:2012 European Standards.

Components of the system.



LEGEND

1. Alsipercha body-84446
2. Self retracting device with weather protector - 84442
3. Hook - 83418
4. Sling - 84437



Info. The system and its components must be used by an authorized worker who is properly trained in fall protection and the use of this system.



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

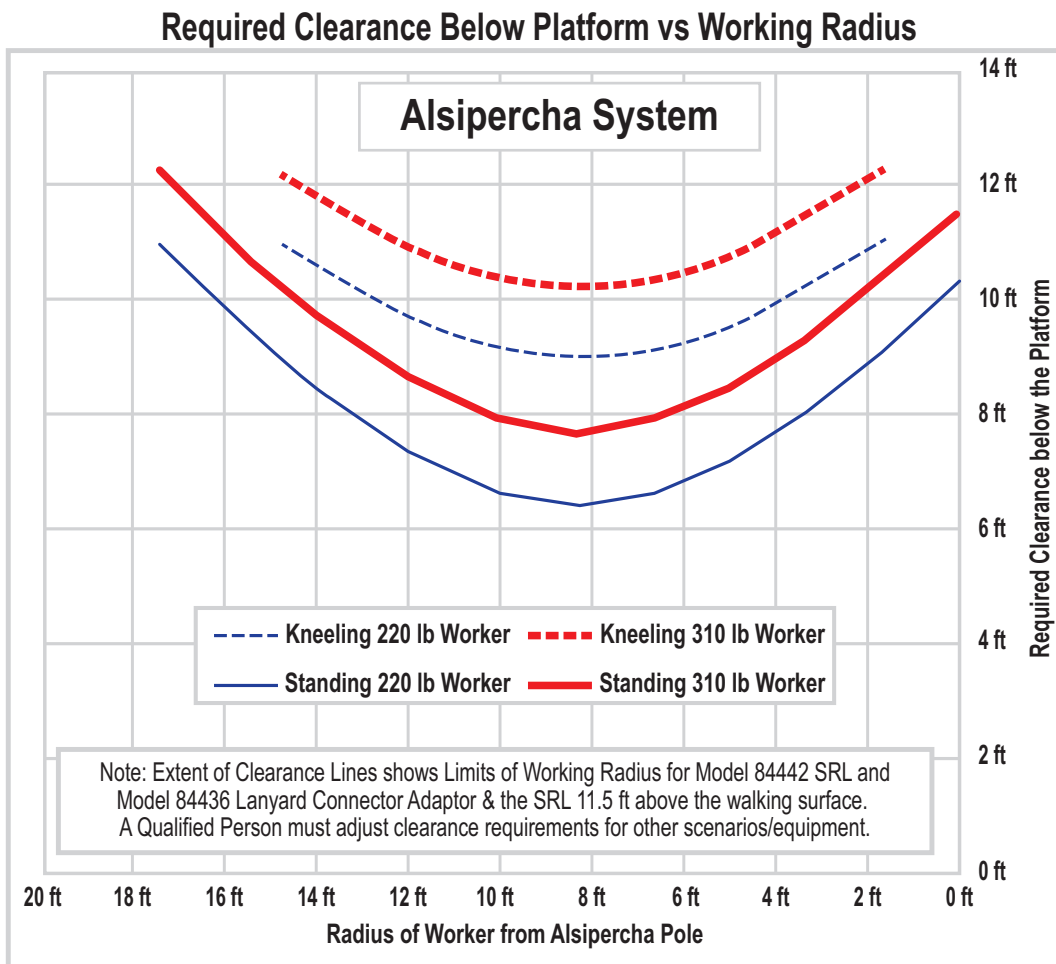
Required clearance below the working platform

The Alsipercha system will stop a worker's fall in accordance with the following chart. Heavier weight workers will require more clearance than lighter weight workers, so the chart provides clearances for 220 lb and 310 lb workers. Note that clearances are calculated in accordance with ANSI Z359.6 and CSA Z259.16, which exceed OSHA requirements in so far as OSHA would drop test a 220 lb test mass to represent a 310 lb worker, whereas the ANSI and CSA standards drop the actual design weight of the worker.

Swing falls will occur when the worker falls from a position that is not directly under the anchor point of the personal fall limiter on the

Alsipercha. The worst case will be when the Alsipercha is installed on a column that is at the edge of the platform, ANSI Z359.6 and CSA Z259.16 limit the maximum swing drop distance to 4 feet, and the Alsipercha system will meet this requirement at the maximum reach of 17,9 ft standing and 14,9 ft kneeling workers for the equipment specified herein.

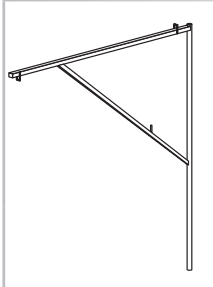
The chart of clearances include curves for standing and kneeling workers weighing 220 and 310 lbs at various working radii from the Alsipercha vertical pole. Clearances for worker weights between 220 and 310 lbs may be interpolated from this data.



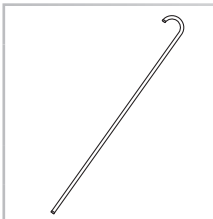
(Model 84446 or 84449 Alsipercha Body, Model 84442 SRL, Model 84436 Lanyard Connector Adaptor. System is installed so that the Top of the Arm is 11.9 ft above the walking surface).

Components Description

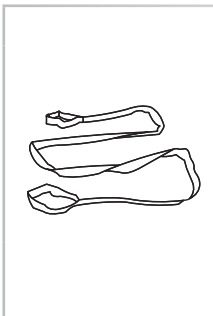
Alsipercha for concrete columns/walls



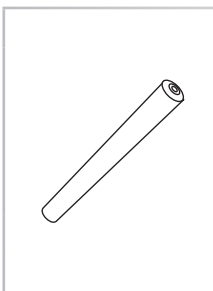
ALSIPERCHA ANSI Z359.6/CSA Z259.16		
Description: Inverted "L" shaped unit, anchored in the column.		
Code	Dimensions	Weight (lb)
84446	14'- 3" x 8" - 2"	176,37



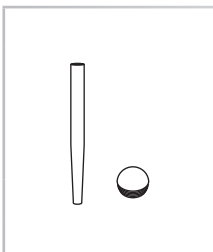
HOOK		
Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.		
Code	Dimensions	Weight (lb)
83418	9'- 4" x 6"	4,4



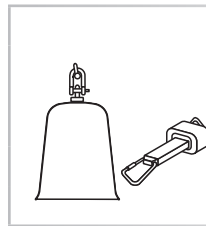
SLING		
Description: An essential component used to move the assembly with a crane, to take it to the column, or remove it once the work is complete.		
Code	Dimensions	Weight (lb)
84437	9' - 2"	1,35



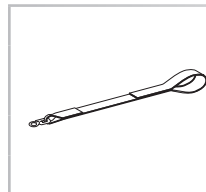
S.A. CYLINDRICAL LEVELLING ELEMENT		
Description: Component that is introduced into the cast-in tube, in order to ensure its verticality and prevent the Housing Tube S.A. from rising under the pressure of the concrete.		
Code	Dimensions	Weight (lb)
83416	3' - 4"	8,8



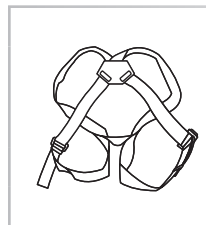
CONICAL TUBE		
Description: Component that is cast into the concrete column and houses the Alsipercha fall arrest system.		
Code	Dimensions	Weight (lb)
84410	3'	6



10' (3,05M) SELF RETRACTING DEVICE		
Description: Self retracting Device that locks on a sudden acceleration. Includes a bell shape weather protector.		
Code	Dimensions	Weight (lb)
84442	10'	3,5



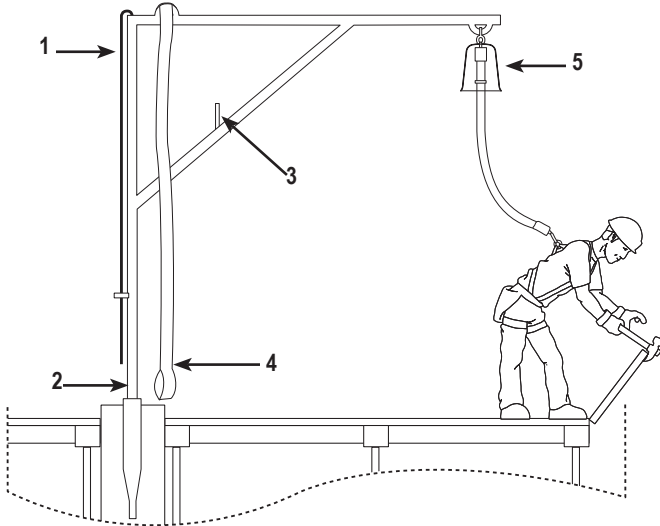
18" (0,45M) LANYARD CONNECTOR ADAPTER		
Description: Component joining the operator to the retractable device with 18" maximum length.		
Code	Dimensions	Weight (lb)
84436	18"	0,7



HARNESS		
Description: Device anchoring the worker to the self retracting device, connected to the Alsipercha body.		
Code	Dimensions	Weight (lb)
84427		2,2

Assembly process

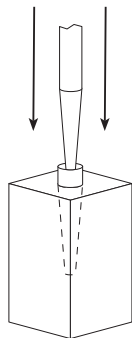
Step 1/4_System components and first steps



LEGEND

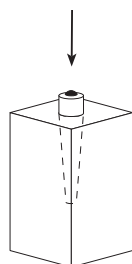
1. 83418 Hook (accessory for changing the anchor point)
2. 84446 Alsipercha Body (the main body that turns through 360° and allows the operator to work freely)
3. Pivot (used to anchor the hook)
4. 84437 Sling (used to move the assembly with a crane)
5. 84442 Self retracting device (with weather protector)

1. Immediately after pouring the concrete columns, place the housing tube (84410) in the center of the latter, protruding 2". This tube will later accommodate the Alsipercha body (84446).



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

2. Use the accessory leveller (83416) to make sure that the tube is vertical and ensure that the top of the tube does not rise and remains no more than 2" above the top surface of the concrete. The column is strengthened by the housing tube.

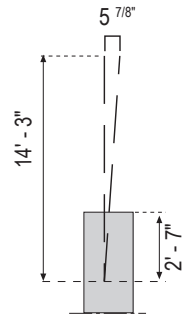
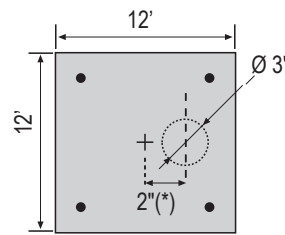


Details of the use of the leveller

Technical details for arranging the housing tube.

Housing tube tolerances.

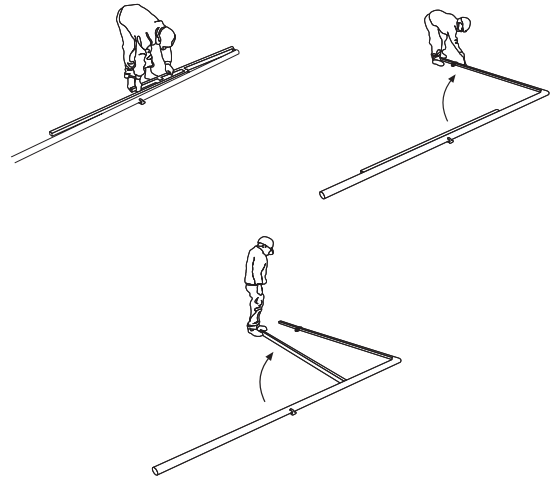
- 1) Tolerance in diversion, with respect to the centre of the column
- 2) Tube must be within 2 degrees of plumb



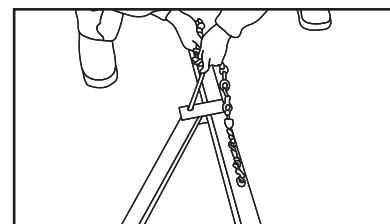
(*) This tolerance will vary depending on the column section. If using the Alsipercha system in columns with a section smaller than 12", cracks may appear in the concrete, as a consequence of the fall of a worker using the system. In this case, consult the a structural engineer.

Step 2/4_System assembly

- 1.- Unfold the Alsipercha Body (84446).



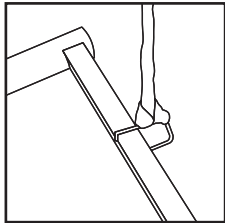
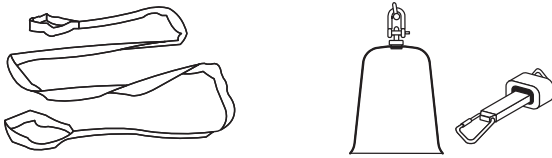
- 2.- Use the pin to fix the Alsipercha Body.



3.- Install the sling and the self retracting device (with weather protector).

84437 - Sling

84442 - Self retracting device with weather protector



Detail of sling installation:

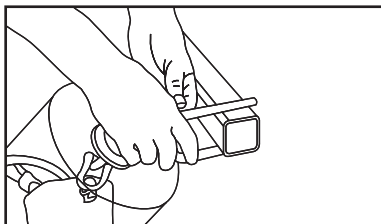
To move the Alsipercha to its location on the column, and to remove it once hazardous operations have been completed.

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 has cuts, especially at the edges.
- Place the sling in its correct position (angles no greater than 120° and stable load).



Detail of the installation of the self retracting with weather protector. Be sure that the carabiner is properly closed.

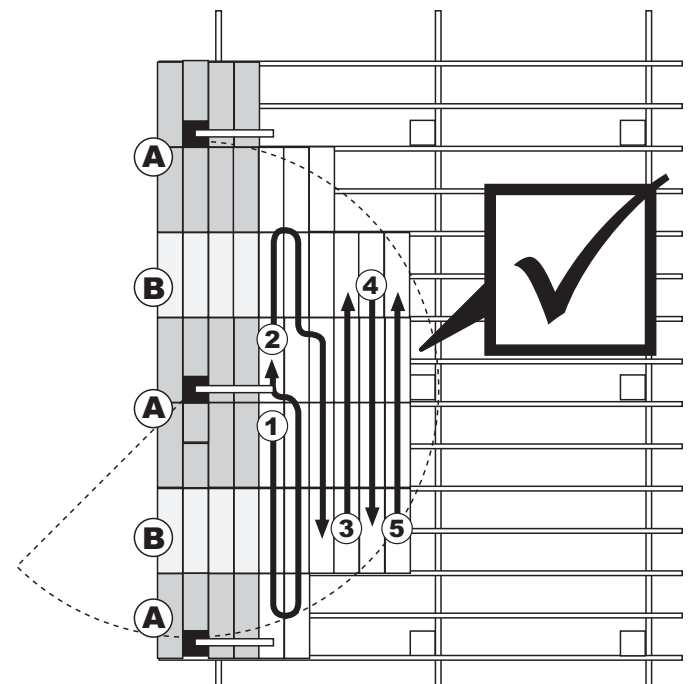
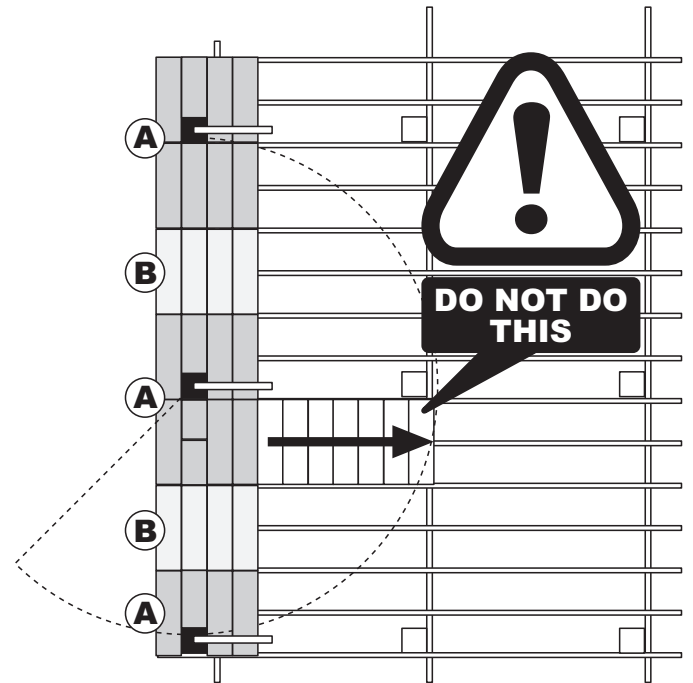
Check:



Info. Before using the self retracting device, check:

- That the strap winds and unwinds completely under light tension.
- That the locking function works correctly, by jerking the strap.
- That the entire assembly 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.
- When not in use, keep it clean and store in a dry place.

Following the below formwork paneling sequence, will reduce the potential of injury from a swing fall.



Alsipercha Fall Arrest System

STORAGE: Before storing, clean the Alsipercha body and accessories, to remove any dirt, grease or other materials that may have accumulated. Store in a clean dry area when not in use.

Step 3/4_Installing and using the Alsipercha body

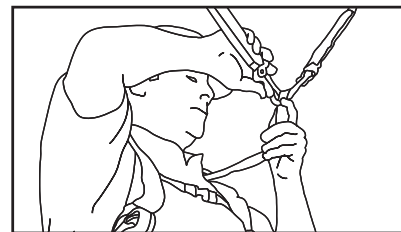
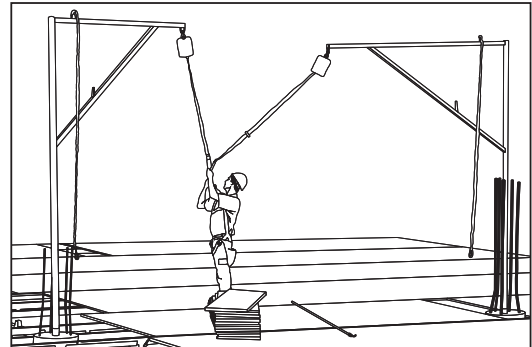
After 24-36hs* of placing the housing tube into the fresh concrete, the Alsipercha body is ready to be installed.

* Time periods for use may vary depending on conditions expressed in the Table of minimum concrete strengths – Page 10

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



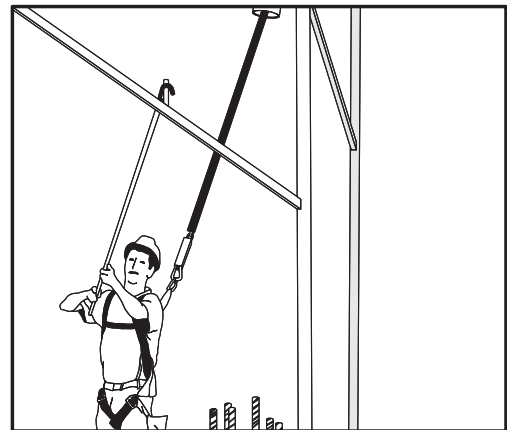
Step 4/4_Repositioning the Alsipercha



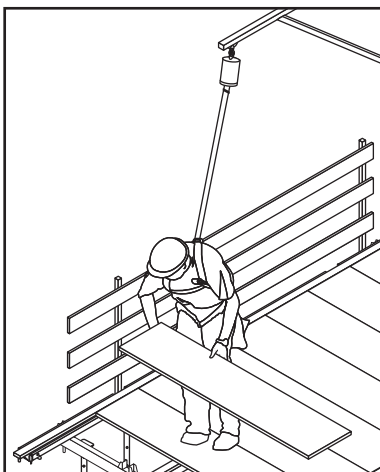
The Alsipercha allows the worker to connect to a second system before unhooking from the first providing 100% tie-off at all times.

2.- 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 is no longer required and can be removed.

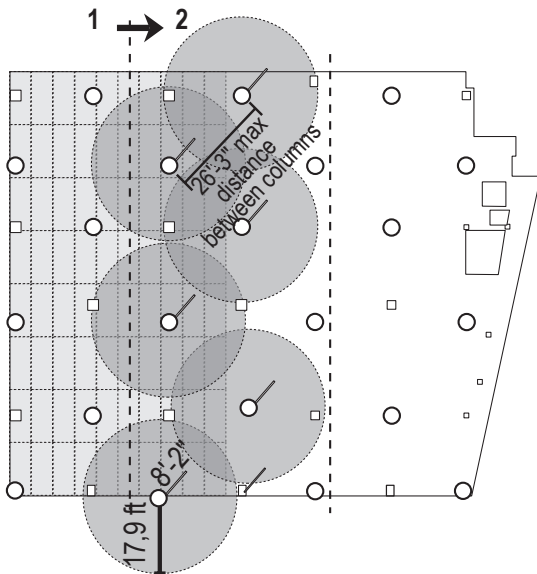
3.- Now we can start the panelling process from one end of the floor, working in an assured position.



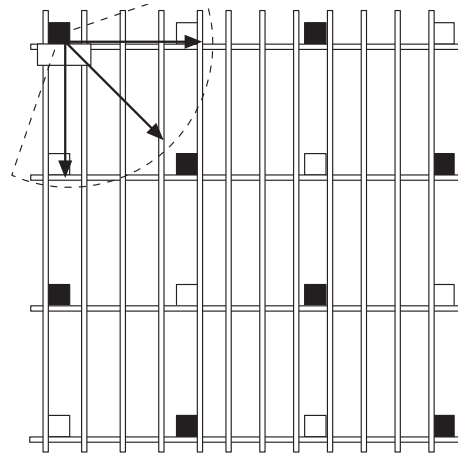
Use the hook to do this if the next Alsipercha is positioned so that the worker cannot reach to anchor themselves.



Example of onsite layout

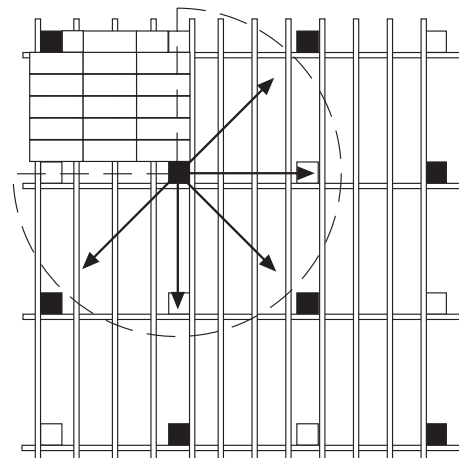


Working with the Alsipercha System



1 - Install de housing tubes into the columns where the Alsipercha fall arrest system is going to be inserted.

2 - Begin with the boarding process starting from the first column, as shown in the above picture.



3 - Continue the boarding process from one end of the surface, and continue working safely with a radius of 17,9 ft (aprox 1300 ft2)

LEGEND	
○ Columns with a conical tube	1.-Starting the boarding of the floor
Alsiperch Body - 8'-2" Working radius - 17,9 ft Maximum distance between columns 26' (8m)	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, Alsina can suggest the optimum quantities of Alsipercha bodies and the better locations, to optimize the use within the working radius.



Info. A set of 6 Alsipercha systems, may be enough to complete the formwork panneling of a surface of 5400 ft2 (aprox.).

Table of minimum concrete strengths

AMBIENT TEMPERATURE							
Type of concrete	Column section (in)	Min. compression value (psi)*1	41°F	50°F	59°F	≥68°F	
Minimum 3600 psi concrete strength at 28 days.	12" x 12" (or superior) *2	474.3	28 h	23 h	19 h	15 h	TIME PERIODS FOR USE IN HOUR
	10" x 10" *3	684.6	30 h	24 h	20 h	16 h	
	6" x 15" *3	826.7	32 h	26 h	21 h	17 h	

Shown above 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 12" x 12", 10" x 10" and 6" x 15".

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

(*2) For sections of 12" x 12" or greater, the system allows for a maximum deviation in the position of the housing tube of 2" from the center of the column.

(*3) For sections of 10" x 10", 6" x 15" or less, the system allows for a maximum deviation in the position of the housing tube of 3/8" from the center of the column.



System limitations:

- The maximum number of users in each system will only be 1 (one). The system's resistance capacity is based on the weight of the person using it and the lightweight tools that may be carried, and this weight must not exceed 310 lb including all tools and equipment.

- The column where the system is installed must be sufficiently strong (minimum 12" x 12" column, concrete must have properly cured 36 hours since being poured. Curing times may be reduced for different column sizes and heights as provided in a table on Page 11:

- The maximum action radius, once the system is anchored, is 17,9 ft. Do not try to widen this radius by lengthening the retractable system self retracting device to which it is tied



Info. Study performed by the Valencia politecnic university.



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.

Report by the Association of Building Consultants (ACE)*

This report analyzes the influence that internal empty space left by a steel housing tube with a variable section (conical central trunk section) can exert on the strength capacity of reinforced concrete columns.

Studies were performed on columns of various strengths and steel housing tubes of various sections, but with the same S275JR quality steel.

- 3600 psi concrete column with a steel housing tube of maximum external diameter of 3" and 1/16" thickness.
- 4350 psi concrete column with a steel housing tube of maximum external diameter of 3" and 1/16" thickness.
- 5000 psi concrete column with a steel housing tube of maximum external diameter of 3" and 1/8" thickness.

The conclusion of the analysis is:

- Installing the S275JR quality steel housing tube with a variable section, maximum external diameter of 3" and 1/16" thickness in 3600 psi reinforced concrete columns with sections measuring 12" x 12" or more, and leaving them empty, **does not impair its strength characteristics in any way.**
- Installing the S275JR quality steel housing tube with a variable section, maximum external diameter of 3" and 1/16" thickness in 4350 psi reinforced concrete columns with sections measuring 12" x 12" or more, and leaving them empty, **does not impair its strength characteristics in any way.**
- Installing the S275JR quality steel housing tube with a variable section, maximum external diameter of 3" and 0.25 cm thickness in 5000 psi reinforced concrete columns with sections measuring 12" x 12" or more, and leaving them empty, **does not impair its strength characteristics in any way.**

We present, for all relevant purposes based on our firm knowledge and understanding, our opinion which we defer to any other better founded opinion, in Barcelona, on May 8, 2003.



David Rodríguez Santàs, Industrial Engineer Technical Committee



Antonio Blázquez Boya, Architect President of the Technical Committee

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 Alsipercha Fall Arrest System developed by ENCOFRADOS J. Alsina, S.A.

(.../...)

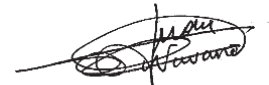
The most important conclusions are as follow:

- 1.- Although the sizes of concrete column sections are usually selected for shear stress and compression-bending separately, this study has considered these jointly, in a similar way to the analysis of metal structural sections. This makes it easier to consider the influence of the steel housing tube.
- 2.- As a result, we estimate that the reduction of section shear stress resistance caused by the hole in the concrete would be absorbed assuming, in the compression-bending calculation, that the steel of the housing tube experiences a reduction in elastic limit which has been taken as 5%, to be on the safe side.
- 3.- Considering this reduction in the elastic limit of the steel, compression-bending interaction diagrams for the section were calculated without modification and including the tube (for different types of steel and thicknesses of tube). Accordingly, we have determined, for each type of concrete and steel, the housing tube thicknesses that cause the interaction diagram for the modified section to exceed the original section. **This ensures that there is no loss of resistance for the section for that thickness of tube.**

Valencia, February 2003



Signed: Pedro A. Calderón García
Dr. Civil Engineering, C. and P.
Head Teacher in Building and Prefabrication



Signed: Juan Navarro Gregori
Civil Engineering, C. and P.
Assistant Teacher in Concrete



Info.*The original document consists of 4 pages, and is available to our customers for inspection.



Info.*The original document consists of 17 pages, and is available to our customers for inspection.

Alsipercha Fall Arrest System

Appendix 1: Conditions of use on site

Below are the guidelines for inspecting each component of the Alsipercha Fall Arrest System. Reviews should be performed regularly, once per year at the very least.

As explained in this document, **this review does not replace the visual inspection that the user should perform each time he or she uses the System.**

Self retracting lifeline inspection procedure - 84442

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 good condition, without tears or loose ends.	If it does not work, remove from service since it is faulty.
That the metallic parts are not significantly rusted and that the karabiners work and lock correctly.	
Check that the housing with eyebolts are in good conditions. If the housing is broken, misshapen, cracked or missing a part, it must be removed from service.	If any of these aspects appears, remove from service since it is faulty.
The two upper tabs of the housing, must be welded or joined with a safety pin.	If not, it must be removed from service.

ALSIPERCHA ANSI Z359.6/CSA Z259.16 (84446 or 84449), column clamps (83424), column clamp sleeve (83426) and Tripod for unloading trucks (84475, 83472, 84478, 83473) inspection procedure.

CONTROL GUIDELINES	PROCEDURE
Place the unit on two sawhorses and open it up to: - Check that all bolts, pins, and nuts are in good condition and they can move freely. - Check that no components are cracked or bent (maximum tolerance is 5 mm for bent poles and arms). Pay special attention to ensuring that the diagonal arm is straight. - Remove concrete build-up and particularly areas between pairs of tabs, as this is the area where various components must fit. If these are too tight, open them with a hammer, until the mating component can enter. - Inspect the welds, especially on the ring to which the personal fall limiter is attached.	If problems are identified with any of the above, contact the Alsina Service department, or official distributor for technical assistance.



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 Service department, or official distributor for technical assistance".



Info. To carry out the checks indicated below, it is **not** necessary to remove the retractable from the weather protector red hood.

Hook Inspection Procedure - 83418

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.	

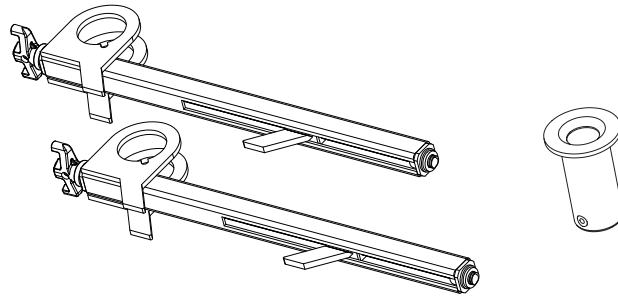
S.A. Cylindrical Leveller Inspection Procedure - 83416

CONTROL GUIDELINES	PROCEDURE
- Check that is in good conditions, and it can be inserted properly into a housing tube.. - Verify the level device works properly and that it is not broken.	If any of these aspects appears, remove from service since it is faulty.

Textile Components inspection procedure: Sling - 84437, Harness - 84427, Lanyard connector adapter - 84436

CONTROL GUIDELINES	PROCEDURE
- Check that there is no missing element, and no tears or loose threads. - Storage the textile elements in a clean and dry place.	If any of these aspects appears, remove from service since it is faulty.

Alsipercha with Column Clamp System



Required clearance below the working platform

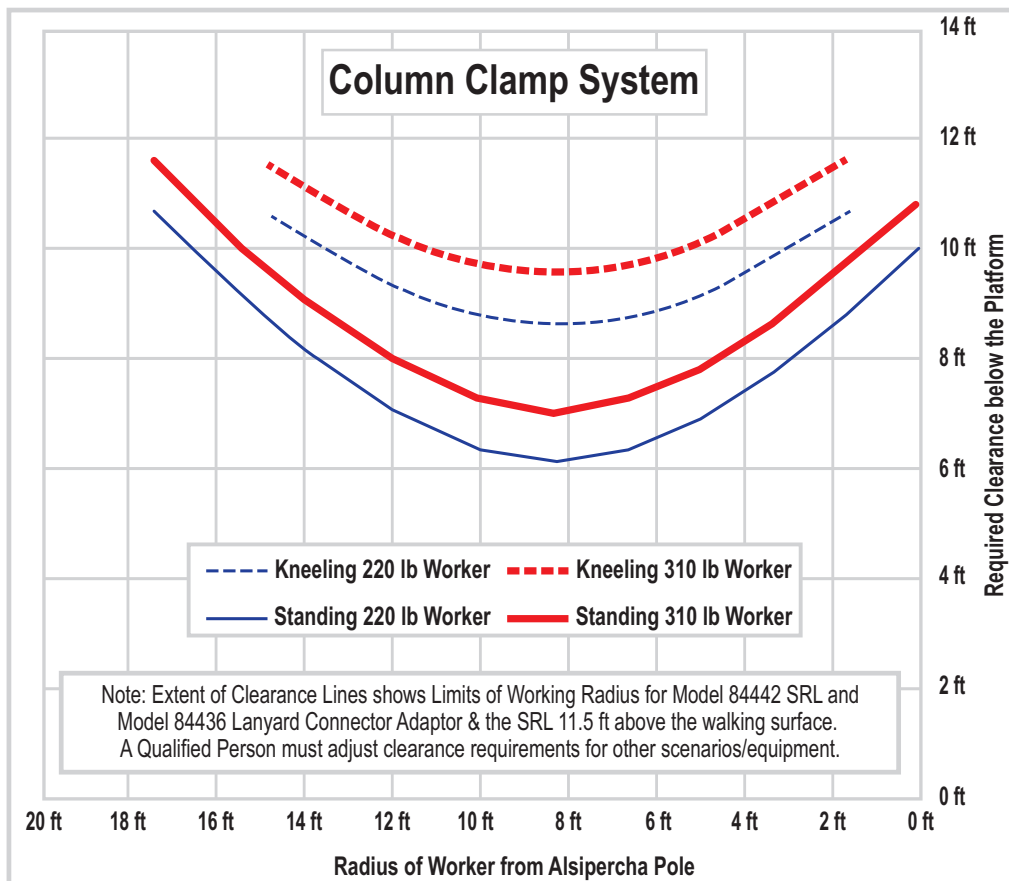
The Alsipercha system will stop a worker's fall in accordance with the following chart. Heavier weight workers will require more clearance than lighter weight workers, so the chart provides clearances for 220 lb and 310 lb workers. Note that clearances are calculated in accordance with ANSI Z359.6 and CSA Z259.16, which exceed OSHA requirements in so far as OSHA would drop test a 220 lb test mass to represent a 310 lb worker, whereas the ANSI and CSA standards drop the actual design weight of the worker.

Swing falls will occur when the worker falls from a position that is

not directly under the anchor point of the personal fall limiter on the Alsipercha. The worst case will be when the Alsipercha is installed on a column that is at the edge of the platform, ANSI Z359.6 and CSA Z259.16 limit the maximum swing drop distance to 4 feet, and the Alsipercha system will meet this requirement at the maximum reach of standing and kneeling workers for the equipment specified herein.

The chart of clearances include curves for standing and kneeling workers weighing 220 and 310 lbs at various working radii from the Alsipercha vertical pole. Clearances for worker weights between 220 and 310 lbs may be interpolated from this data

Required Clearance Below Platform at Working Radius

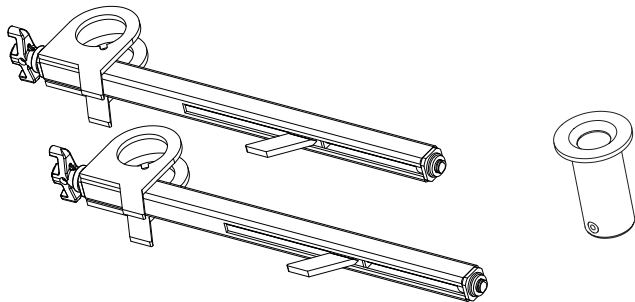


(Model 84446 Alsipercha Body, Model 84442 SRL, Model 83424 Column Clamps Installed so that the Top of the Arm is 11.9 ft above the walking surface)

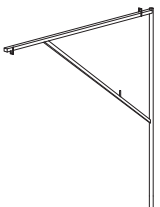
Assembly process for the column clamps


Characteristics and advantages

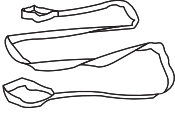
- Patented product made in steel, proving to be a much more lightweight accessory, easy and quick to assemble, which only needs a hammer for attachment.
- Designed and manufactured according to EN 795 standards.
- Engineered to the ANSI Z359.6 and CSA Z259.16 standards
- It can be attached to steel wide flange columns (with dimensions from 6 to 18 inches). Column strength should be assessed by a qualified person to resist a maximum torque of 12000 ft-lb from a fall arrest impact.
- Can be assembled by competent works personnel

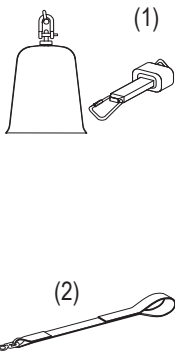


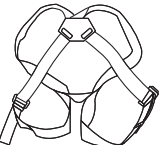
Components Description

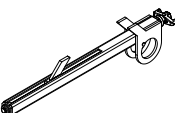
	ALSIPERCHA ANSI Z359.6/CSA Z259.16		
	Description: Inverted "L" shaped unit, anchored in the column.		
	Code	Dimensions	Weight (lb)
	84446	14'- 3" x 8' - 2"	176,37

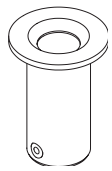
	HOOK		
	Description: Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.		
	Code	Dimensions	Weight (lb)
	83418	9'- 4" x 6"	4,4

	SLING		
	Description: An essential component used to move the assembly with a crane, to take it to the column, or remove it once the work is complete.		
	Code	Dimensions	Weight (lb)
	84437	9' - 2"	1,35

	RETRACTABLE DEVICE W/PROTECTOR S.A.		
	Description: Retractable component that locks on a sudden acceleration. It also has the Red Clamp, which is a clip placed in such a way that the strap of the retractable device stays hanging at a length of 1 m, so that it stays within reach of the workers.		
	Code	Dimensions	Weight (lb)
	84442 (1)	10'	3,5
	84436 (2)	18"	0,7

	HARNESS		
	Description: Device anchoring the worker to the self retracting device, connected to the Alsipercha body.		
	Code	Dimensions	Weight (lb)
	84427		2,2

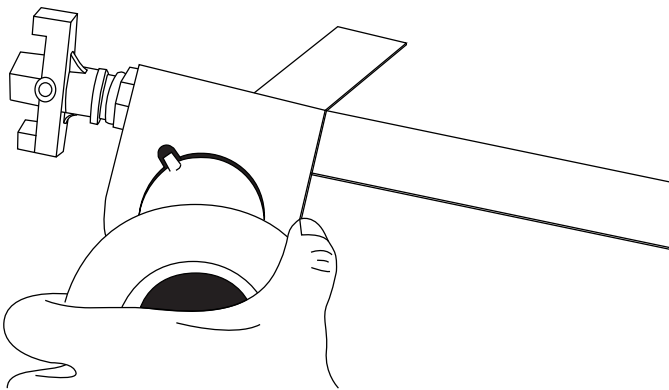
	COLUMN CLAMP		
	Description: Column clamp to anchor the Alsipercha body to steel wide flange columns (with dimensions from 6 to 18 inches)		
	Code	Dimensions	Weight (lb)
	83424	2' - 6" x 2"	13 lb

	COLUMN CLAMP SLEEVE		
	Description: Accessory that serves as housing the Alsipercha main body.		
	Code	Dimensions	Weight (lb)
	83426	6"	2,6 lb

Alsipercha Fall Arrest System

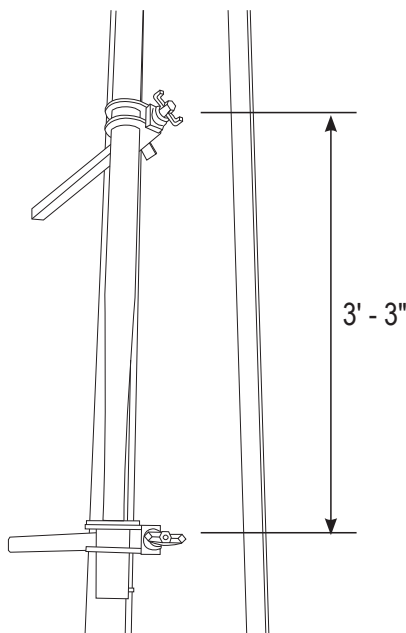
Assembly process

- 1 - A set of Alsipercha system with column clamps will be made of: 1 Alsipercha body (84446), 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 GRIPPER plate (this solution is called the "labyrinth", and once the SLEEVE is assembled in the GRIPPER it prevents them from separating from one another). See picture below.

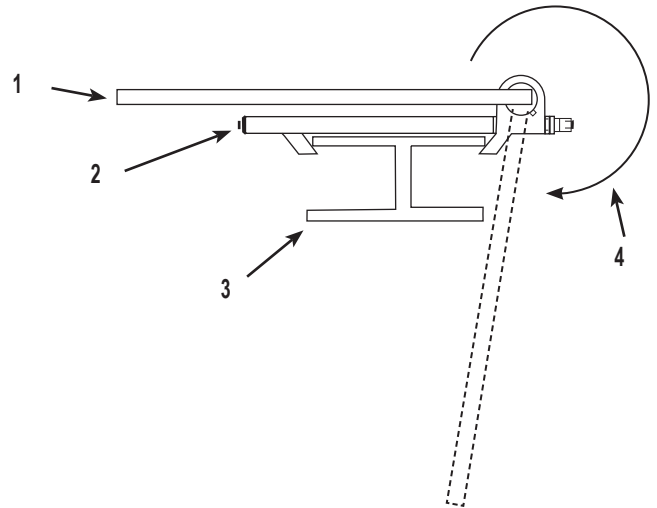


- 3 - Both column clamps (83424) will be connected to the steel column, distanced by 1m. Attach both column clamps using a hammer, hitting the end nut hard (up to 50 Nm).

- **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 (84446) will be inserted through the rings of both column clamps connected, until 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 280° approximately.

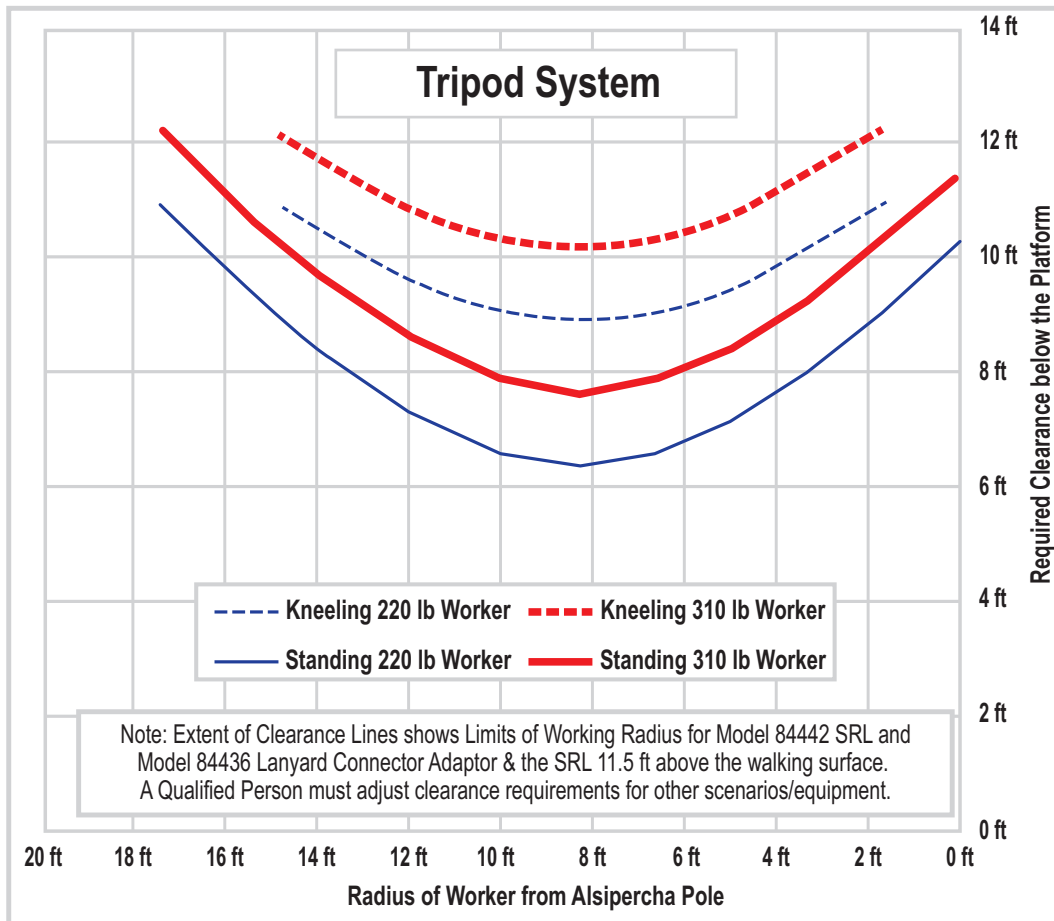


LEGEND

1. Alsipercha body - 84446
2. Column clamp - 83424
3. Steel column
4. Estimated free rotation angle

Alsipercha with Tripod System

Required Clearance Below Platform vs Working Radius



(Model 84446 or 84449 Alsipercha Body, Model 84442 SRL, Model 84475 or 83472 (2m) or 84478 83473 (3m) Tripods installed so that the Top of the Arm is 11.9 ft above the walking surface)

Required clearance below the working platform

The Alsipercha system will stop a worker's fall in accordance with the following chart. Heavier weight workers will require more clearance than lighter weight workers, so the chart provides clearances for 220 lb and 310 lb workers. Note that clearances are calculated in accordance with ANSI Z359.6 and CSA Z259.16, which exceed OSHA requirements in so far as OSHA would drop test a 220 lb test mass to represent a 310 lb worker, whereas the ANSI and CSA standards drop the actual design weight of the worker.

Swing falls will occur when the worker falls from a position that is not directly under the anchor point of the personal fall limiter on the Alsipercha. The worst case will be when the Alsipercha

pole is located at the edge of the platform, ANSI Z359.6 and CSA Z259.16 limit the maximum swing drop distance to 4 feet, and the Alsipercha system will meet this requirement at the maximum reach of standing and kneeling workers for the equipment specified herein.

The chart of clearances include curves for standing and kneeling workers weighing 220 and 310 lbs at various working radii from the Alsipercha vertical pole. Clearances for worker weights between 220 and 310 lbs may be interpolated from this data.

When using a dual Alsipercha system as illustrated on page 27, the clearance from the above chart applies for radius of the worker from the nearest Alsipercha pole.

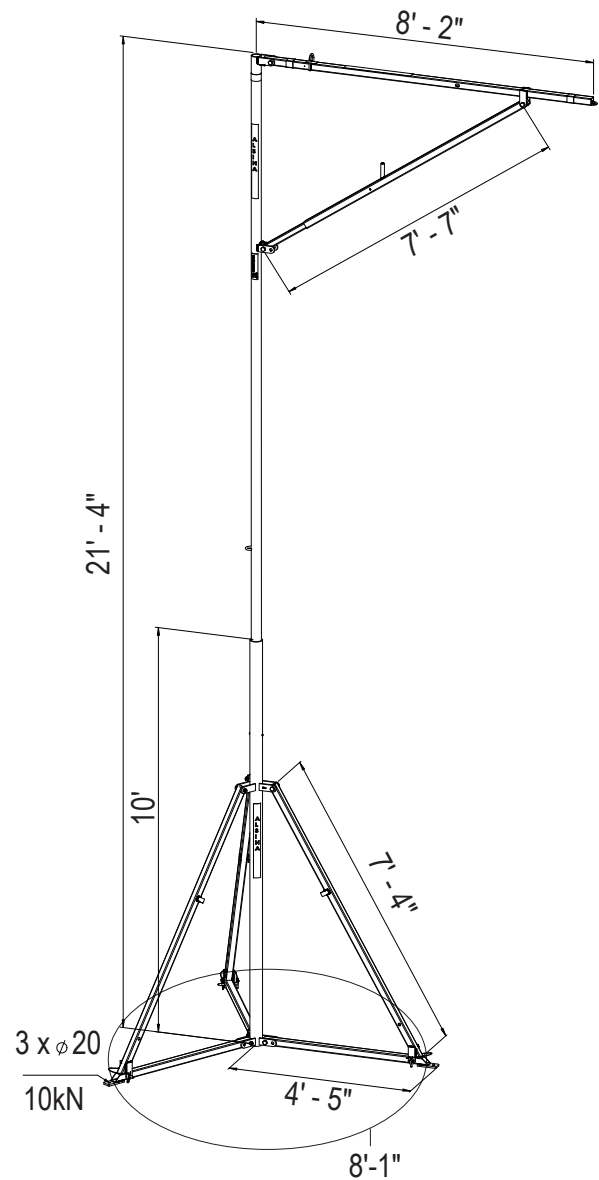
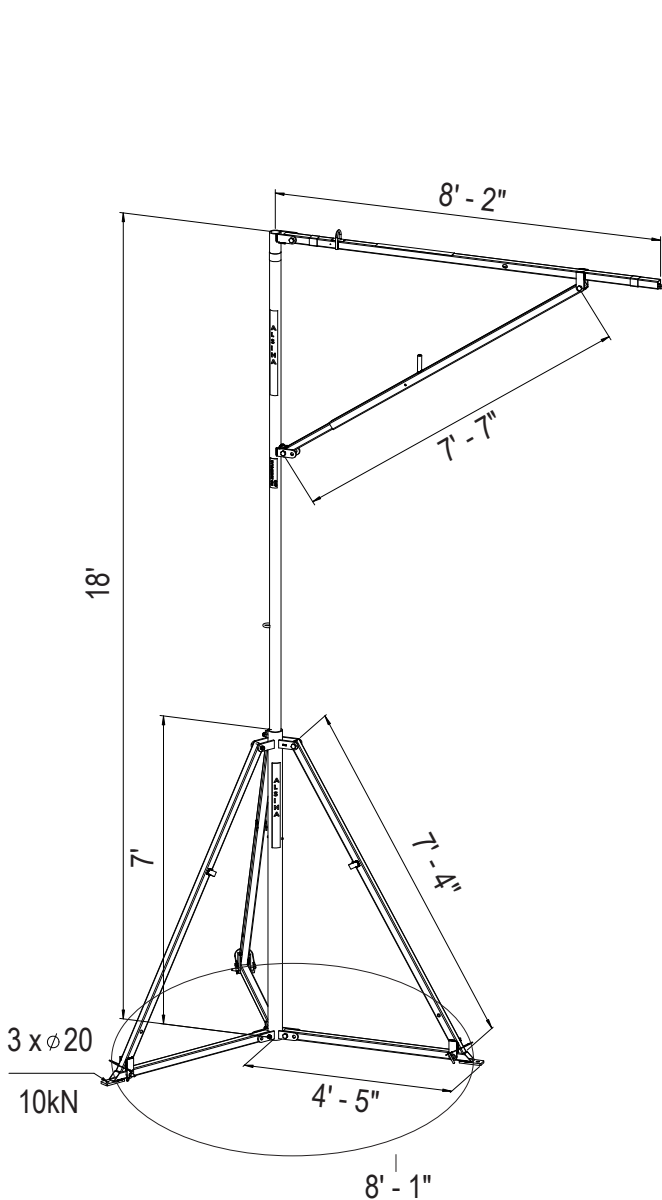
Alsipercha with tripod system

Alsipercha Tripod assembly procedure

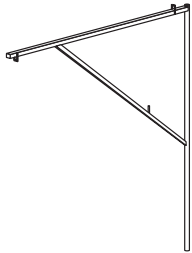
The ALSIPERCHA TRIPOD, together with Alsipercha body, is a solution that allows operators to safely load/unload trucks from a trailer.

- Designed and manufactured according to EN 795 standards.
- Engineered to the ANSI Z359.6 and CSA Z259.16 standards

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:




Components Description



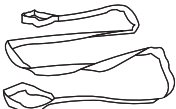
ALSIPERCHA ANSI Z359.6/CSA Z259.16
 Description:
 Inverted "L" shaped unit, anchored in the column.

Code	Dimensions	Weight (lb)
84446	14'- 3" x 8' - 2"	176,37



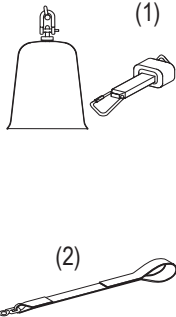
HOOK
 Description:
 Component used to bring the Alsipercha fall arrest system closer to the worker when changing the anchorage.

Code	Dimensions	Weight (lb)
83418	9'- 4" x 6"	4,4



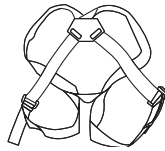
SLING
 Description:
 An essential component used to move the assembly with a crane, to take it to the column, or remove it once the work is complete.

Code	Dimensions	Weight (lb)
84437	9' - 2"	1,35




RETRACTABLE DEVICE W/PROTECTOR S.A.
 Description:
 Retractable component that locks on a sudden acceleration. It also has the Red Clamp, which is a clip placed in such a way that the strap of the retractable device stays hanging at a length of 1 m, so that it stays within reach of the workers.

Code	Dimensions	Weight (lb)
84442 (1)	10'	3,5
84436 (2)	18"	0,7




HARNESS
 Description:
 Device anchoring the worker to the self retracting device, connected to the Alsipercha body.

Code	Dimensions	Weight (lb)
84427		2,2



TRIPOD
 Description:
 Component that supports and stabilizes the Alsipercha.

Code	Dimensions	Weight (lb)
84475	7'	198 lb
84478	10'	216 lb



HILTI 5/8" HILTI TZ ANCHOR BOLTS USING HILTI HY 200 EPOXY
 Description:
 Anchor the tripod to the installation surface.

Code	Dimensions	Weight (lb)
83479		0,7 lb

Alsipercha Fall Arrest System

Alsipercha Tripod Assembly Procedure

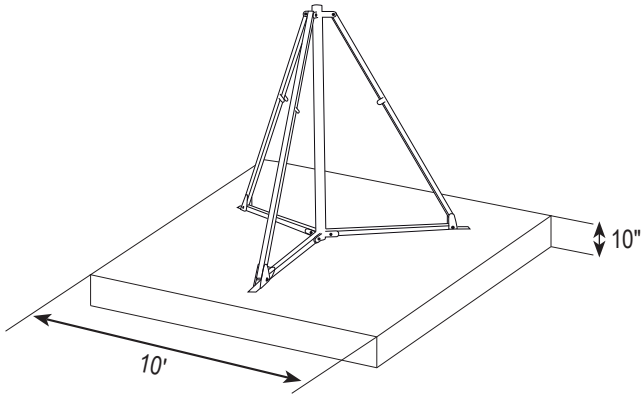


Info. It is very important to assemble the ALSIPERCHA TRIPOD on a sufficiently strong concrete base:

Option of anchoring to concrete/slab footing

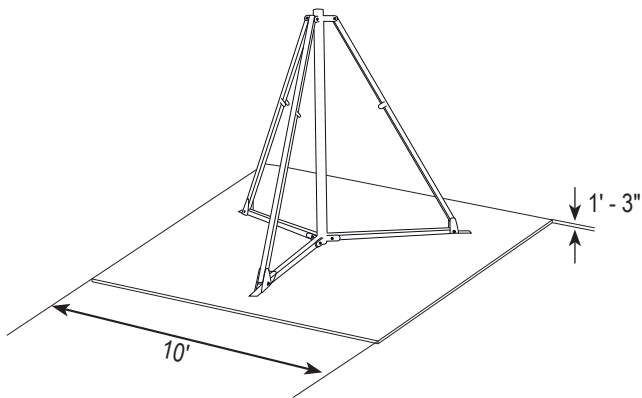
- Create a concrete footing that has the following characteristics as a minimum: 3600 psi concrete or higher (minimum resistance of concrete for use=1500 psi, if fresh concrete is used), measurements of 10 ft x 10 ft x 10 inches.

In this case, the anchor will consist of placing 3 units of the HILTI TZ anchors (83479).



Option of anchoring to steel plate

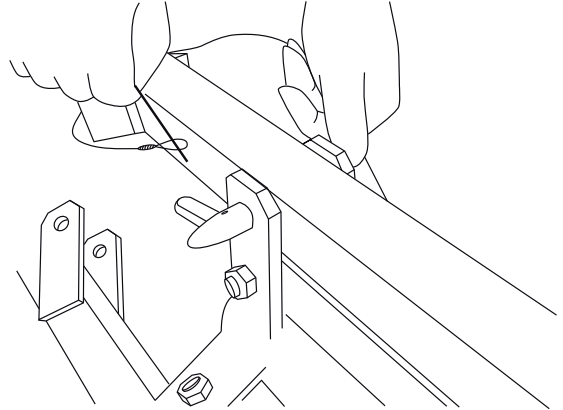
- Place the tripod on a steel plate that has the following characteristics as a minimum: measurements of 10 ft x 10 ft x 1-1/2" thick plate, with three (Grade 8 or A-325) 5/8" bolts used to fasten through the plate or inserted into threaded holes in the plate.



The Tripod may be mounted on other materials that have been certified by qualified person to resist a maximum torque of 12000 ft-lb from a fall arrest impact.

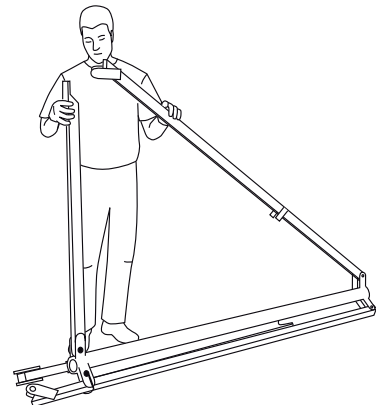
Step 1

To open the tripod feet, release the connecting PINS.



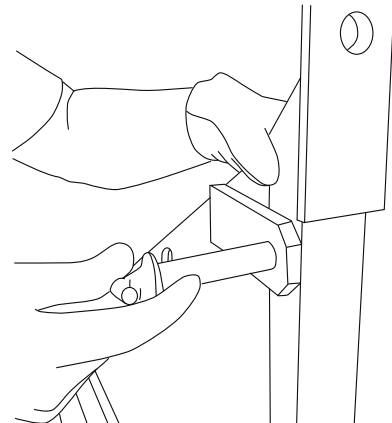
Step 2

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

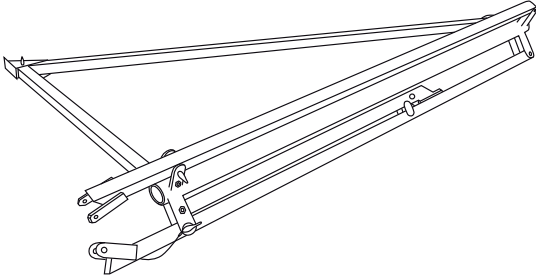


Step 3

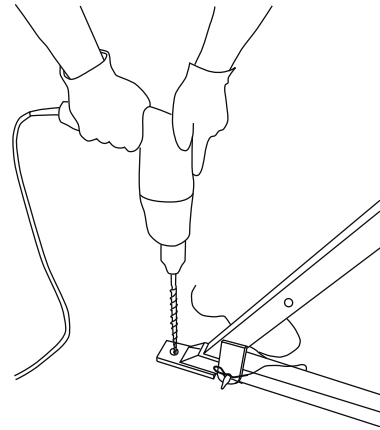
Secure it in the open position by placing the pin in the R position.



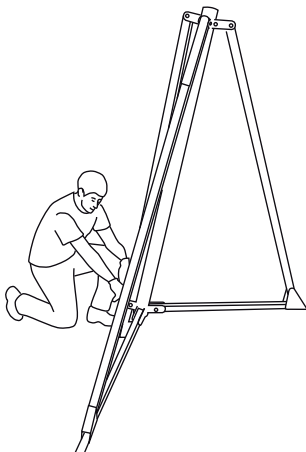
Step 4
ALSINA TRIPOD with one leg open.



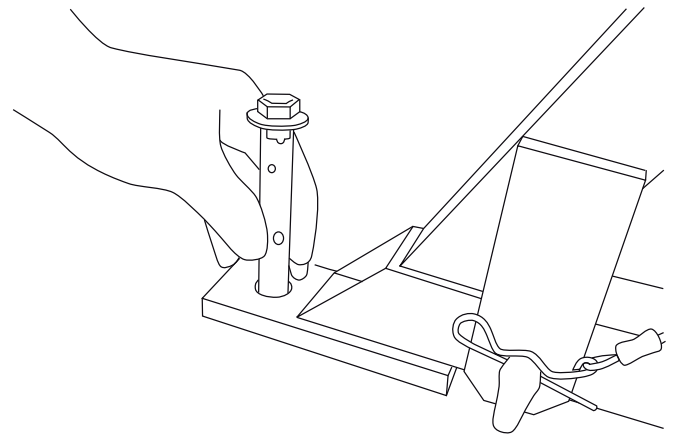
Step 7
On the 3600 psi concrete sole plate, drill with an 18 mm - diameter bit to a depth of 140 mm.



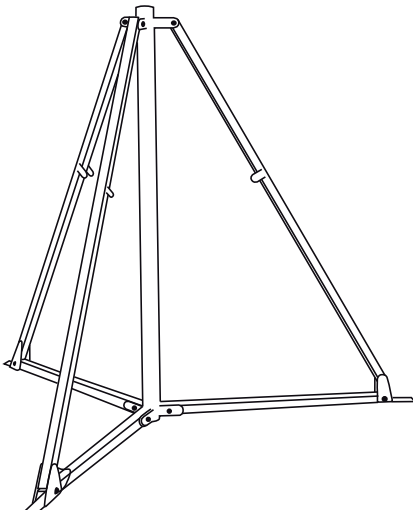
Step 5
Turn the TRIPOD 180 degrees, open the second leg, and place it upright. Use an anchoring element to secure the tripod to a high, fixed point so the structure does not overturn. Proceed to open the third leg.



Step 8
The HILTI TZ anchors (83479) is fitted.



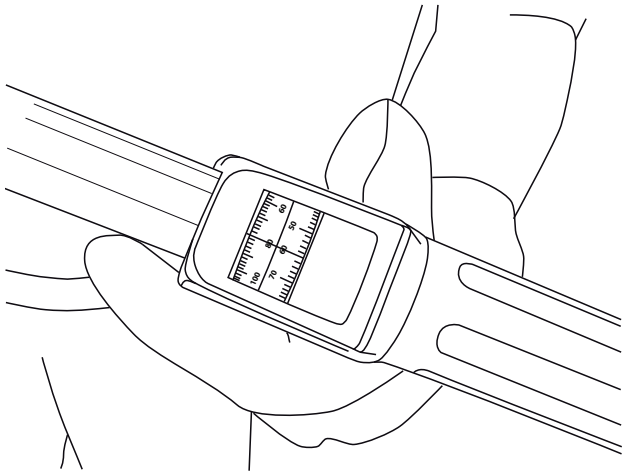
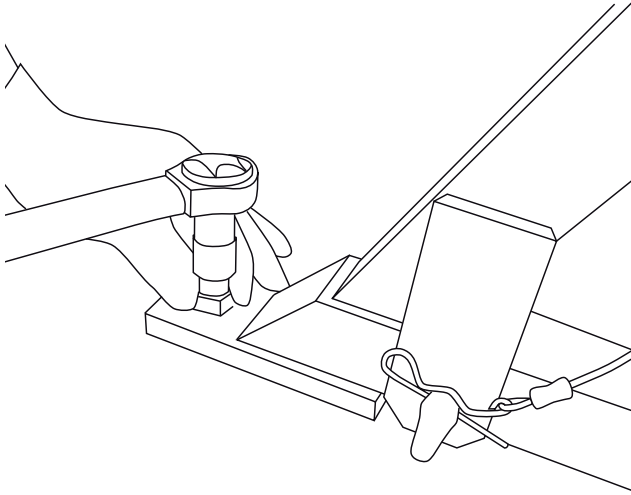
Step 6
ALSINA TRIPOD in the working position.



Alsipercha Fall Arrest System

Step 9

With a torque wrench, torque to 100 ft-lb. Repeat for all three anchors. Finally, using the crane, place the Alsipercha body (84446) on top of the ALSIPERCHA TRIPOD.



Procedure for use on site

General Information

There are 18 to 21 feet from the anchor point to the floor, depending on the type of tripod chosen, meaning that the operator can work above the truck load with complete safety. The diameter of the circular surface occupied by the tripod base is 9 ft.

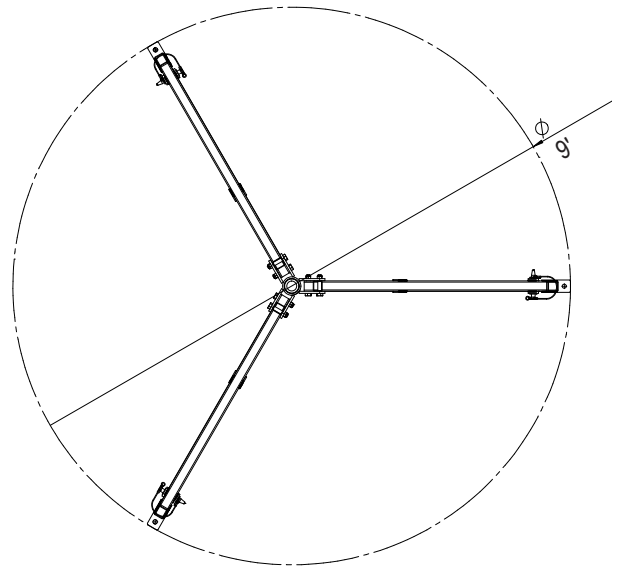
Safety information

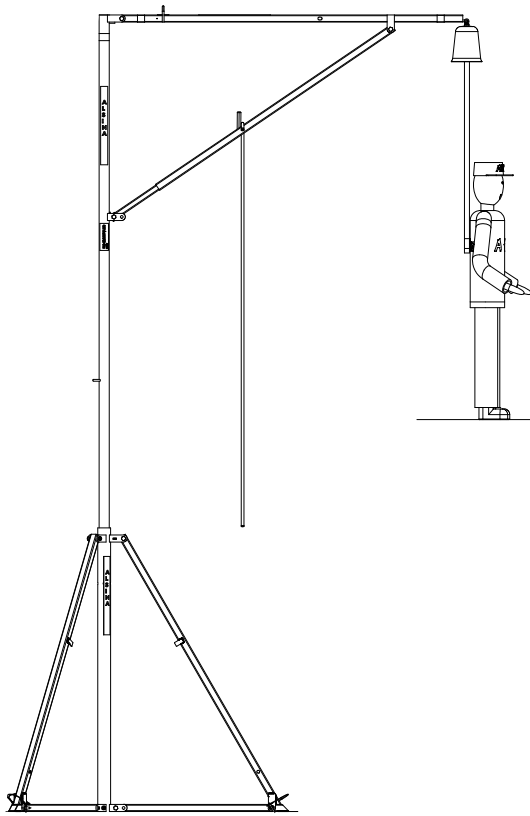
The Alsipercha is only for the operations indicated in this document, to prevent them from falling when loading on or unloading from delivery vehicle platforms.

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.

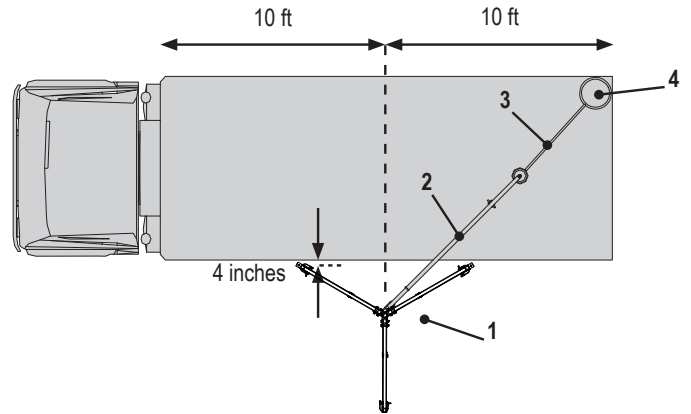
If someone falls when using the Alsipercha system, the entire system must be withdrawn from service and inspected by a Qualified person. If you have any queries, please contact Alsina.





Trucks that are 20 ft long

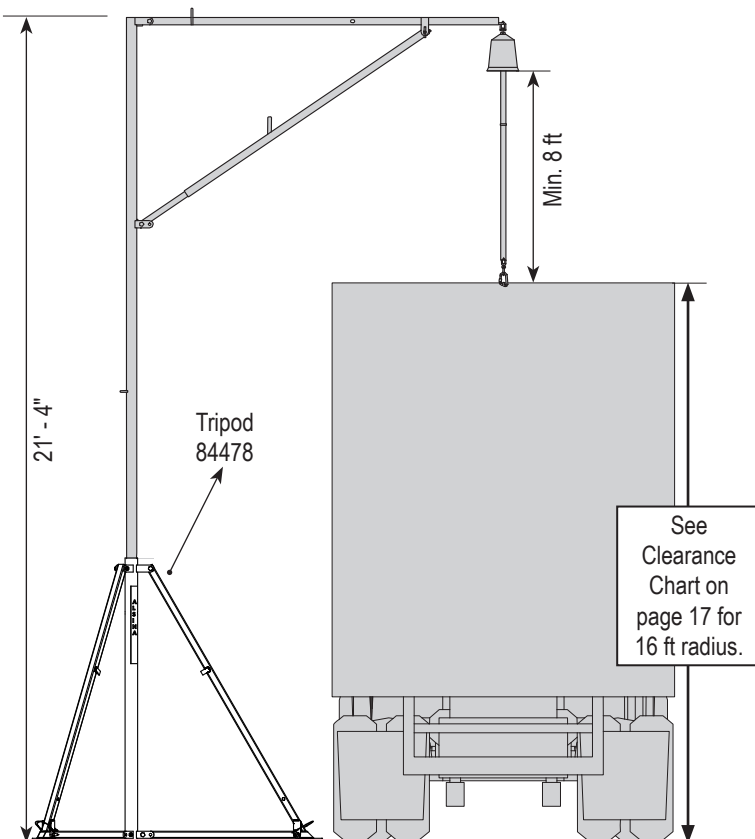
To unload a 20 ft platform of a truck, only one Alsipercha System will need to be used. When parking the truck, the rear box/platform must be situated according to the distances shown in the following illustration:



LEGEND

1. Alsipercha Tripod (84478)
2. Alsipercha body (84446)
3. Self retracting device (84442)
4. Worker

Final assembly



Any worker unloading a truck with a 20 ft deck, must use only PPE meeting ANSI/CSA standards:

- Suitable footwear
- A reflective jacket and a helmet with chin protection
- A safety harness
- 18 inch lanyard connector adaptor

Once the worker has the correct PPE (Personal Protection Equipment), he can connect to and use the Alsipercha with tripod system)

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

Alsipercha Fall Arrest System

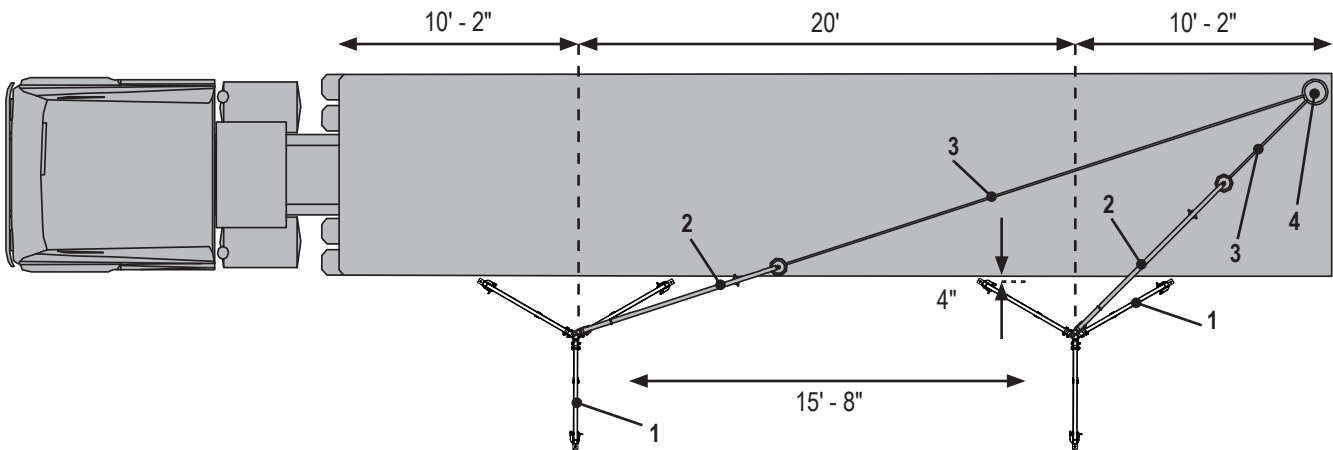
Trucks that are 40 ft long

As the image below shows, when a 40 ft truck is loaded and unloaded, two Alsipercha with Tripod 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 connected to two Alsipercha systems simultaneously before acceding to the working area over the truck. This will help him control the movement on the 40ft long platform in the event of a fall.

If it should be necessary to access the outer corners of the platform, it is better to move the truck to ensure that the operator is within a range of 11" from the structure.



LEGEND

1. Alsipercha Tripod (84478)
2. Alsipercha body (84446)
3. Self retracting device (84442)
4. Worker

Any worker unloading a truck with a 20 ft deck, must use only PPE meeting ANSI/CSA standards:

- Suitable footwear
- A reflective jacket and a helmet with chin protection
- A safety harness
- 18 inch lanyard connector adaptor

Once the worker has the correct PPE (Personal Protection Equipment), he can connect to and use the Alsipercha with tripod system)

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

Maintenance, use and safety

Alsina performance criteria with regard to Technical Requirements, Safety and Accident Prevention at the worksite

Background

After more than 70 years of experience in the market, the Alsina Group became one of the largest companies in the formwork sector, with a construction market share of more than 20%. From its foundation, company priorities have been safety at the worksite, quality in the widest sense and productivity. The primary aim of the company is to industrialize concrete structure formwork.

Alsina dedicates a large part of its technical resources to working towards continuous improvement of products and processes, in order to add new solutions at both the functional and safety levels and make available a state-of-the-art and innovative range of products. More than 50 patents in Spain, in addition to several recent international patents, bear witness to the company's commitment in this area.

R+D+I

Both the Technical Department and the R+D Department use advanced computer equipment to simulate real situations when performing product related calculations. This allows us to develop a large number of new high quality and innovative products; the company also works closely with Universities, Laboratories and Engineering Companies.

In general we govern ourselves in relation to safety and technical requirements based on European regulations. Our products are certified on the basis of Spanish and European Community standards by recognised institutions. The most significant of these, among others, are: Intemac, Indus, Itec, ACE, LGAI, Bureau Veritas, etc.

Training and Standards

The purpose, the purpose of this Assembly and Safety Manual is to assist whoever works with our products. This is why we make it available to our customer before the start of formwork assembly work. If you do not have a copy or require more copies, do not hesitate to contact Alsina directly or the Technical Salesperson responsible for your project.

This Manual has been prepared with the intention of supporting the theoretical-practical training given at the beginning of the construction work. Figures and diagrams are included to promote maximum understanding on the part of the workers who will be involved in the use and maintenance of the equipment.

../..

Products are supplied by Alsina in good conditions, and following our internal quality policy. Given that Alsina does not perform the assembly or manage the construction work, the user bears responsibility for the use and maintenance of the equipment.

In addition to the recommendations contained in this manual, the safety and health standards in force for the construction sector in force in each geographical area.

Conditions of use

The Alsipercha system has been designed and created for the specific uses and applications described in this manual. Therefore, we take no responsibility for the use of the equipment in situations other than those considered in this document.

At the time of assembly, the components must always be checked by a competent person, who must ensure that they are fit for use. To this end, each system has specific control guidelines. These guidelines can be found in the Annex (Annex 1) at the end of this section. In accordance with these criteria, when a part that is not fit for use is identified, it must be taken out of service.

Set out below are the main considerations to be taken into account during the installation, recovery and system maintenance phases.

Installing the components of the system

1. All the components are sufficiently strong and stable to support the loads and stresses described in this manual. It is essential to install all the components included in the system, with all the accessories assembled and correctly attached and especially to verify that the panels are correctly positioned and supported.
2. Alsina is absolved of all responsibility if the system components are substituted with other, similar components supplied by another company.

STORAGE. *Before storing, clean the Alsipercha body and accessories, to remove any dirt, grease or other materials that may have accumulated. Store in a clean dry area when not in use.*

INSPECTION AND MAINTENANCE LOG:

DATE PURCHASED:

MODEL

Nº:

INSPECTOR:

DATE: INSPECTIONS ITEMS.....

NOTED:
.....

.....

.....

..... MAINTENANCE.....

PERFORMED

.....

