

APARATOS DE TRACCIÓN Y ELEVACIÓN



PULLING AND LIFTING WINCHES



APPAREILS DE TRACTION ET LEVAGE



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1 DESCRIPTION

1.1 Introduction

All users of the Traction Apparatus are required to read this manual before assembling and using the same. As such, it should be read in depth to ensure strict compliance with all the safety standards.

The manufacturer reserves the right to effect modifications as a means of improving the Traction Apparatus, reason for which the equipment may differ slightly to the specifications set forth in this manual. Moreover, ALBA-MACREL GROUP S.L. undertakes to update the manual immediately upon each improvement.

ALBA-MACREL GROUP S.L. will not be held liable for any damage arising from:

- Failure to follow the instructions contained in this manual.
- Using the machinery in an incorrect manner.
- The use of non-original spare parts specified in the corresponding section in this manual.
- Modifications made to the machinery without the express authorisation of the manufacturer.
- Handling by personnel who have not been trained for the purpose.

The use of the Traction Apparatus should only be entrusted to trained personnel and the handling of all components should be conducted by specialised technical personnel with knowledge of the same.

This manual should always be kept within the reach of users for immediate consultation. We recommend taking a copy of the manual and leaving it alongside the apparatus as a means of ensuring it is kept in perfect condition.

The sketches and images illustrated in this manual are for the purposes of guidance and will be updated as new designs are produced.

ALBA-MACREL GROUP S.L. hopes this Traction Apparatus performs to your complete satisfaction.

1.2 General Information

This Apparatus is specifically designed to handle load son vertical, horizontal and inclined planes as illustrated in the sketches in Fig. 1-1.

The weights capable of being handled are specified in the table in section 1.6.

In the event of the need to handle greater weights, different pulley systems can be used.



WARNING:

The calculation of the pulleys required to handle the loads should be conducted by specialised personnel.



WARNING:

Even when using pulleys which ensure the handling of greater weights, care should always be taken not to exceed the cable breaking load. See the breaking load in section 1.6.

The lifting device is a portable apparatus equipped with a pass-through cable which is drawn in a straight line by clamps. The stress is transferred to the Manoeuvre Levers (up or down) through a removable lever (Drive Lever).

It features a safety system whereby the Apparatus cannot be unlocked in order to remove the Cable when it is loaded. It also features a device which prevents the scaffold from being raised when it exceeds 2.5 times the work load limit.

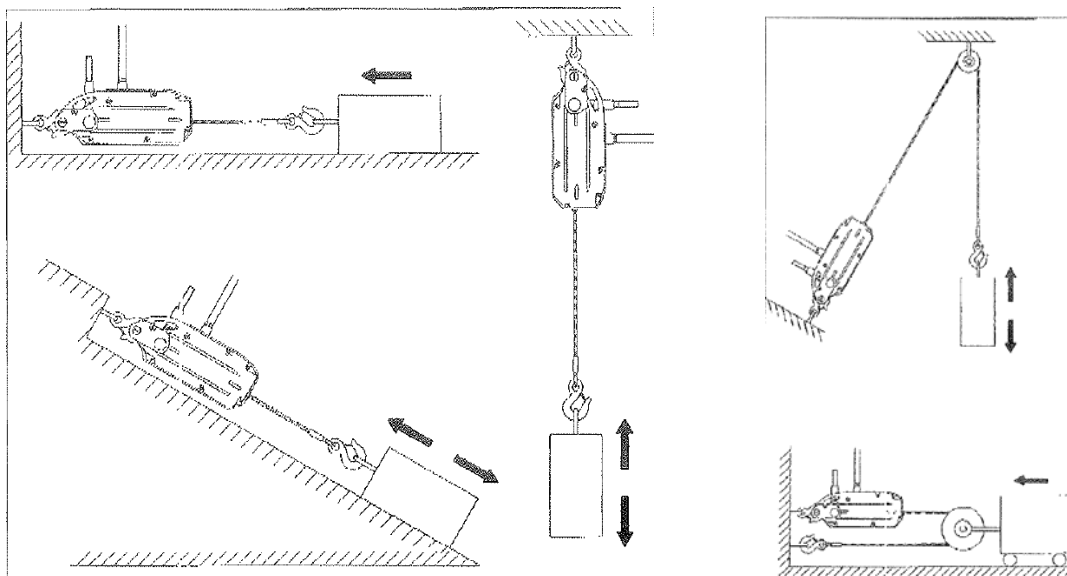


Fig. 1-1 - General information

Description of the main components of the Apparatus:

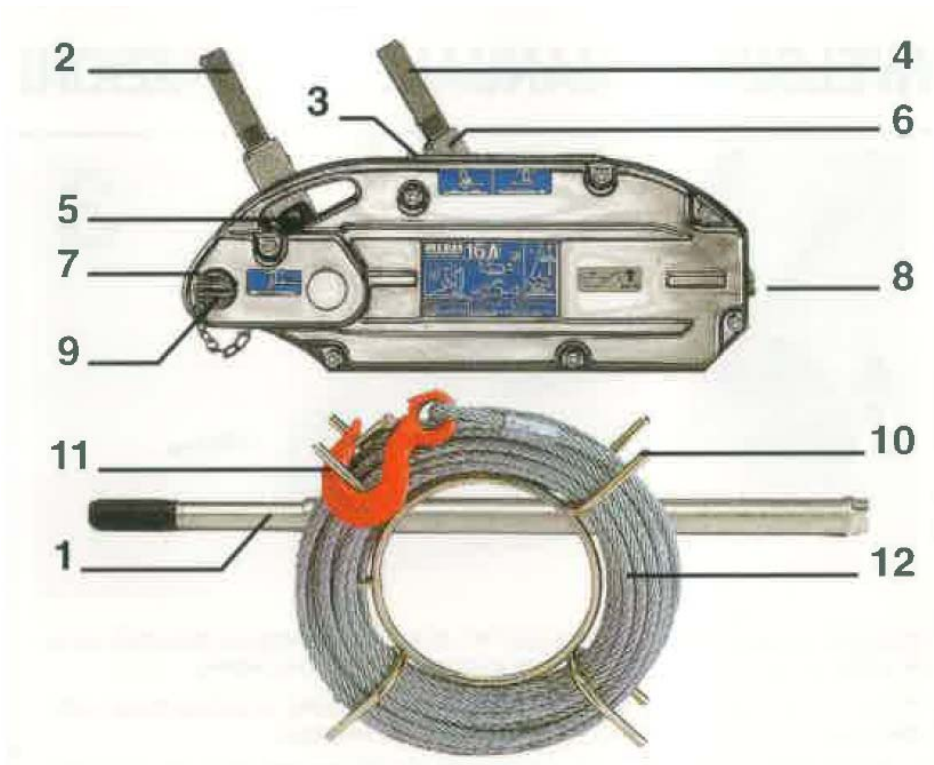


Fig. 1-2 – Main components

| | | | |
|---|------------------|----|---------------------------|
| 1 | Telescopic lever | 7 | Cable output |
| 2 | Forward lever | 8 | Cable input |
| 3 | Unlocking claw | 9 | Coupling bolt with a lock |
| 4 | Reverse lever | 10 | Reel |
| 5 | Safety screw | 11 | Coupling with safety lock |
| 6 | Alignment pin | 12 | Cable |

1.3 Checks on delivery

At the time of the delivery of the Traction Apparatus a check should be conducted to ensure:

- The order matches exactly what has been delivered.
- The Traction Apparatus is in perfect condition, comprising all the parts and with no defects.
- In the event of detecting an anomaly in relation to any of the aforementioned items, you should contact ALBA-MACREL GROUP S.L. or their local representative immediately.

1.4 Transport

The casing of the traction apparatus features a handle to transport it.



Fig. 1-3 – Transportation handle

1.5 Intended uses

- Construction
- Public works
- Mines and quarries
- Electricity and communications
- Shipyards. Shipping
- Transport. Railways
- Fire brigade
- Garages
- Agriculture. Forestry activity
- Chemical and oil industry
- The Armed Forces

1.6 Characteristics

| | | | 8A | 16A | 32A |
|----------------------------------|---------------|----|-------------|--------------|--------------|
| Rated lifting capacity | kg | | 800 | 1600 | 3200 |
| Cable feed rate per cycle driven | mm | | 54 | 58 | 45 |
| Nominal stress on the lever | kg | | 29 | 40 | 53 |
| Net weight (with no cable-lever) | kg | | 6,4 | 13,7 | 23,7 |
| Weight when packed | kg | | 7,7 | 16 | 26,3 |
| Packaging measurements | cm | | 44 x 9 x 28 | 56 x 12 x 36 | 70 x 11 x 38 |
| Cable | Diameter | mm | 8,3 | 11,3 | 16,3 |
| | Breaking load | kg | 4800 | 9600 | 19200 |
| | Weight/m | kg | 0,27 | 0,51 | 1 |

1.7 Dimensions

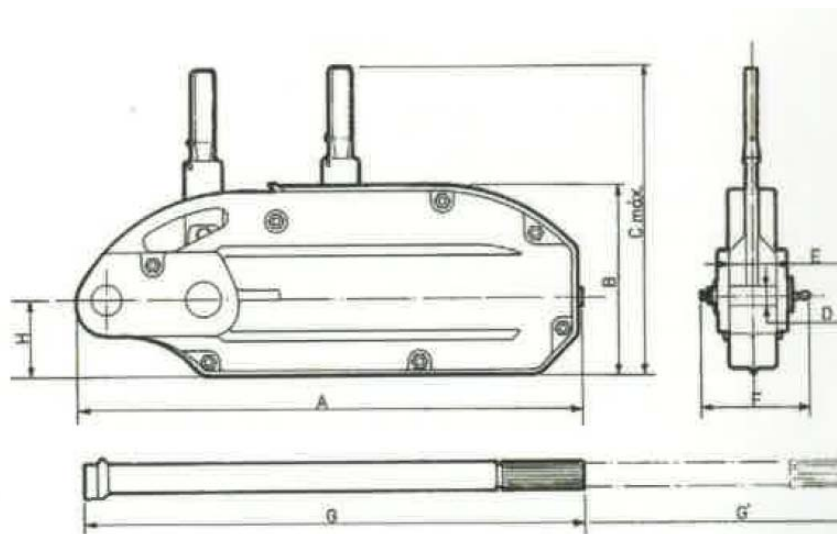


Fig. 1-4 - Dimensions

| | A | B | C | D | E | F | G / G' | H |
|-----|-----|-----|-----|----|----|-----|----------|-----|
| 8A | 430 | 170 | 268 | 18 | 38 | 109 | 645 | 60 |
| 16A | 546 | 203 | 336 | 22 | 48 | 120 | 635/1055 | 82 |
| 32A | 663 | 232 | 372 | 28 | 50 | 136 | 635/1055 | 105 |

2 INSTALLATION

Apart from the dimensions of the Traction Apparatus, the following conditions need to be complied with:

- The environment must be well lit in order to guarantee the safe use and maintenance of the Traction Apparatus.
- The work area should be of the appropriate dimensions in accordance with the work to be executed.
- The permitted operating temperature is from $-5\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$.
- The permitted relative humidity is from 30% to 90% (at $20\text{ }^{\circ}\text{C}$).
- The area should be protected against atmospheric agents.

2.1 Commissioning

- Step N° 1

The Cable is unrolled as illustrated in Fig. 2-1, pulling out the coupling and rolling the reel to prevent the formation of kinks and twists.



Fig. 2-1 - Cable-coupling-wheel unit



WARNING:

If the Cable is left on the floor without rolling it in, kinks and twists will appear which cannot be corrected and which will damage the Cable over time.

- Step N° 2

When the apparatus has been fastened and the lever is in the reverse position, make a parallel movement and hook the alignment pin into the unlocking claw. You can use your foot to help you do this.

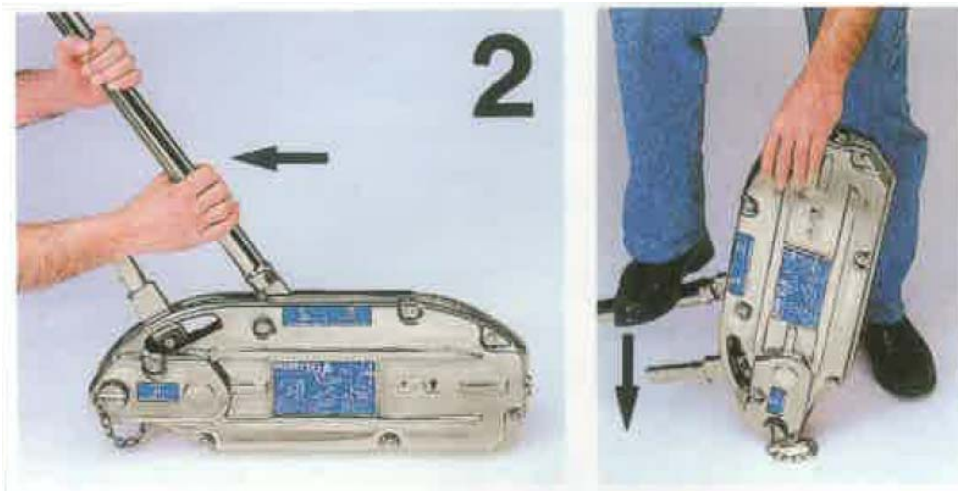
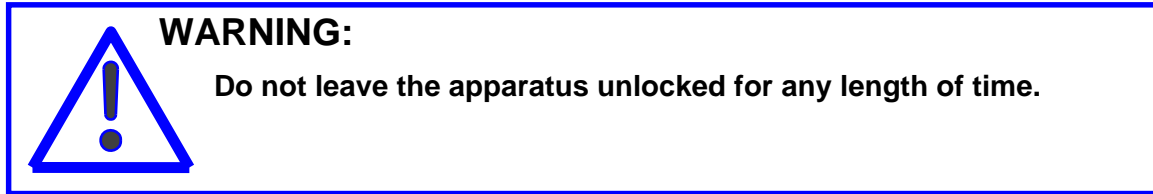


Fig. 2-2 - Hooking the alignment pin into the unlocking claw.

- Step N° 3

Place the cable into the opening indicated by the arrow without forcing it until it comes out through A. In the event of difficulty, pull the cable out around 3 cm and push it through again while turning it at the same time.



Fig. 2-3 - Introducing the cable

- Step N° 4

Use the coupling bolt to fasten the Apparatus to a suitable fixed point.

Turn the bolt in two movements, pushing it in up to the second groove, fixing it with its cam.

This bolt is the only place in which the apparatus should be fastened (slung or well coupled) in order to use it.



Fig. 2-4 – Fastening the Apparatus to a fixed point

- Step N° 5

Pull the cable out of the opening until it is tight.



Fig. 2-5 - Pulling the cable out with your hand

- Step N° 6

Placing the apparatus in reverse gear, remove the alignment pin from the unlocking claw. Place the lever in forward or reverse gear and turn it halfway round to prevent it from coming out.

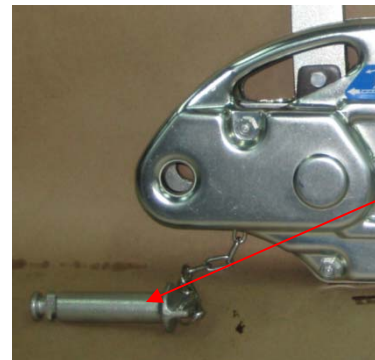
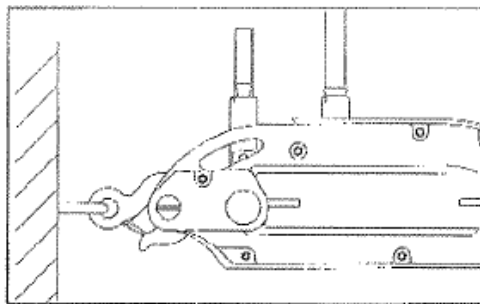
The Apparatus is ready for use.



Fig. 2-6 – Placing the lever in position and turning it halfway round to prevent it from coming loose

2.2 Fastening the Traction and Lifting Apparatus

The Traction Apparatus is equipped with a coupling bolt at one end to fasten it to a suitable fixed point.



Coupling bolt

Fig. 2-7 – Coupling on the end

A steel sling or coupling needs to be used to fasten it, and never the cable extending from the Apparatus. This cable should come out freely and you should not use any type of device which subjects it to stress.



WARNING:

The point to which the traction device is fastened should be prepared to withstand the load with a considerable safety margin. The choice of an unsuitable fastening point could cause an accident.



WARNING:

The only way of fixing the Apparatus is by attaching the sling or hook to the coupling bolt. Never attach it to the casing or transportation handle.

**WARNING:**

Never fasten the Apparatus by leaning or clamping the casing, as this could deform it and cause the Apparatus to malfunction.

**WARNING:**

Do not use the cable exiting the traction apparatus to fasten or sling any type of device.

**WARNING:**

Do not use the cable exiting the traction apparatus to attach it to another traction device.

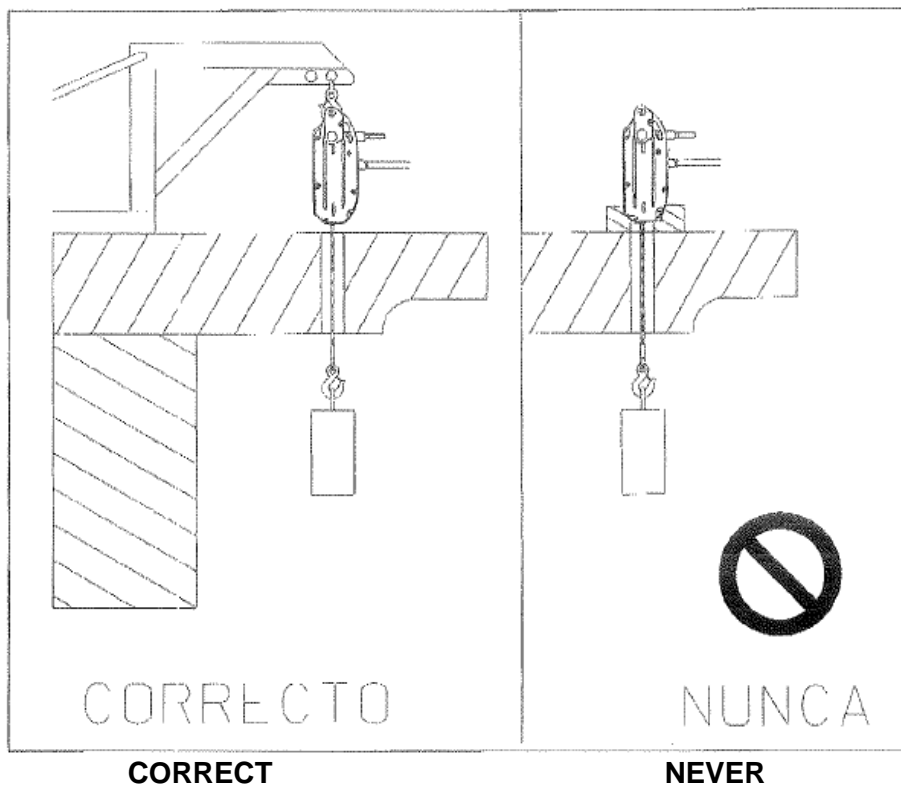


Fig. 2-8 - Fastening the traction and lifting apparatus

2.3 Hooking up the load

The cable supplied with the Apparatus is equipped with a coupling with a safety lock at one end.

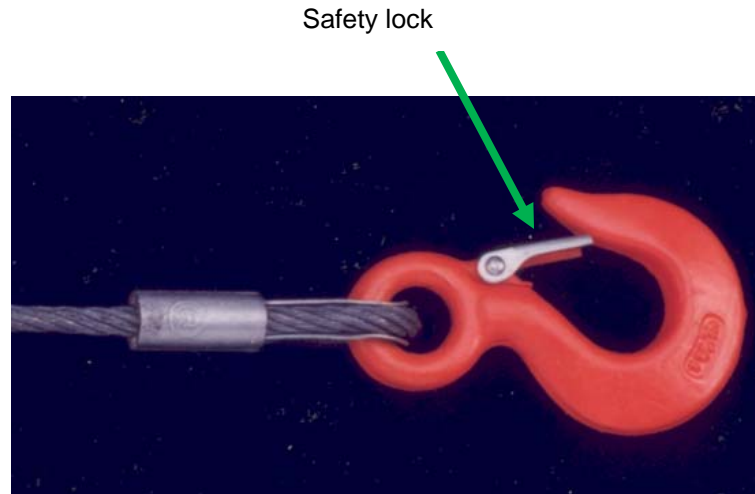


Fig. 2-9 – Coupling with a safety lock

In order to attach or remove the coupling device (eyelet, grommet, thimble, etc.) you need to press the safety lock into the coupling, whereby it will return to its original position automatically when the operation has been concluded.

If the load is equipped with one or more specific dragging and/or lifting points, the cable coupling will need to be placed, directly or using a sling, on these points, always taking the stability of the load into account when moving it.

If the load has no specific dragging and/or lifting points, it will need to be tied to the cable coupling using slings, taking care not to damage it and taking the stability of the load into account when moving it.



WARNING:

Never use the traction apparatus cable to secure or sling loads.



WARNING:

The coupling safety lock should not be off when the load is being moved.



WARNING:

The load should be correctly tethered and secured before starting to move it.

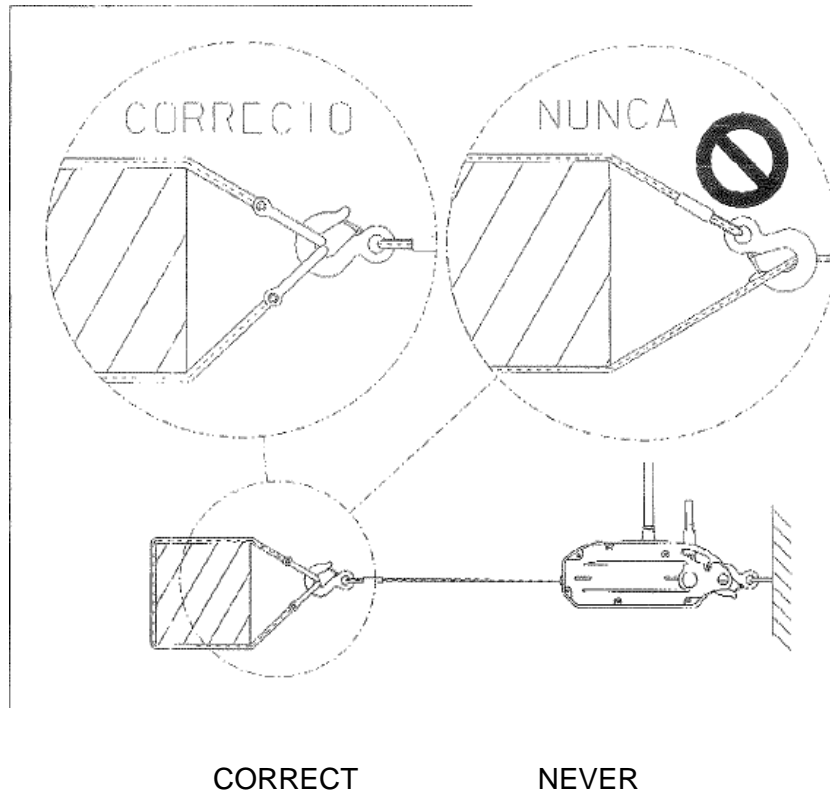


Fig. 2-10 - Hooking up the load

3 USE

Read this manual thoroughly before using the Traction Apparatus. The incorrect use of the same may cause harm to persons and damage the equipment.

There follows a series of preconditions in relation to the use of the Traction Apparatus which should be complied with:

- The Traction Apparatus should only be used for the purpose it was designed for.
- The Traction Apparatus should only be used by authorised personnel who have been trained to handle this type of equipment.
- The operator should be familiar with the handling of the Traction Apparatus before using it for the first time. He/she should know the function of each lever and/or device, in addition to the possibilities and limitations of the Traction Apparatus with the aim of reacting quickly in the event of any unforeseen circumstance.
- The Traction Apparatus should not be used in the event an anomaly is detected on the daily inspection or during use.
- The Traction Apparatus should not be used in the event the required installation, use and maintenance conditions set forth in the different sections of this manual have not been met.
- Prior to being placed in position and after being transported, the structure of the Traction Apparatus should be checked for damage suffered from impact or falls which might compromise the performance of the same.

**WARNING:**

The length of the cable should be greater than the length of the operation to be executed. A longer cable may be used when necessary, however extensions should never be attached to the original cable.

**WARNING:**

Only the special ALBA cable should be used.

Once the instructions in relation to commissioning have been complied with, the following checks should be conducted before using the traction equipment:

- The Apparatus should always be aligned with the cable, reason for which there should be no obstacles in its longitudinal path.
- Care should be taken to prevent the cable from coming into contact with kerbs, corners or similar during use, and pulleys can be used for this purpose.
- Hung loads need to be prevented from spinning, as this will damage the cable.

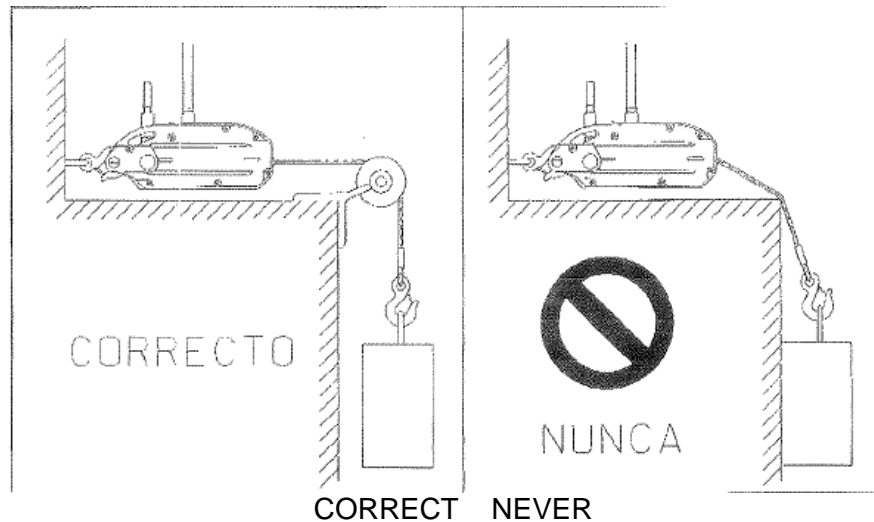


Fig. 3-1 - Use of pulleys

After having followed the instructions and there is no sign of any hazard which might arise during the normal use of the Apparatus, it may be used as described below:

- With the lever in forward or reverse gear, as applicable, the equipment will move back-and-forth in a longitudinal direction.
- The maximum range of this back-and-forth movement is that of the Apparatus itself.
- The path of the lever will depend on the intent of the user, never beyond the limit of the Apparatus.

**WARNING:**

In order to guarantee the equipment performs well, never engage the two gears (forward and reverse) at the same time.

**WARNING:**

Do not force or obstruct the normal path of the levers.

**WARNING:**

Oiling of the Apparatus after using it for the first time (See the maintenance section).

**WARNING:**

The Apparatus should be oiled in the event the lever becomes stiff in reverse or down gear or after lengthy use (See the maintenance section).

4 SAFETY

4.1 Safety Standards

Failure to comply with the following safety standards may place users of the Traction Apparatus and exposed persons at risk. The following actions are STRICTLY PROHIBITED:

- Using the Traction Apparatus with a load over its nominal capacity.
- Using the Traction Apparatus for work other than that it was designed for.
- Obstructing the movement of the up or down lever.
- Engaging the up and down levers at the same time.
- Using any means of engaging the equipment other than the original drive lever.
- Replacing the original safety screw with one of a different origin.
- Fastening the Traction Apparatus using means other than the fastening coupling.
- Attaching a load to the end of the Cable which protrudes over the side of the fastening device.
- Striking the drive components.
- Exposing the Cable to temperatures of over 100 °C and/or chemical or mechanical agents.
- Using the Cable to sling a load.
- Allowing the Cable to come into contact with sharp edges.
- Using Cables without oiling them.
- Allowing a Cable under stress to come into contact with an obstacle.
- Using a Cable of a length less than that of the operation to be executed.

4.2 Safety Devices

ALBA traction equipment features a safety device against overloading in forward gear, consisting of a screw with a safety nut. This device restricts overloading and protects the mechanism. It prevents the load from being hoisted in the event it registers more than 2.5 times the limit of the work load when operating with a force of up to 1 kN on the end of the lever.

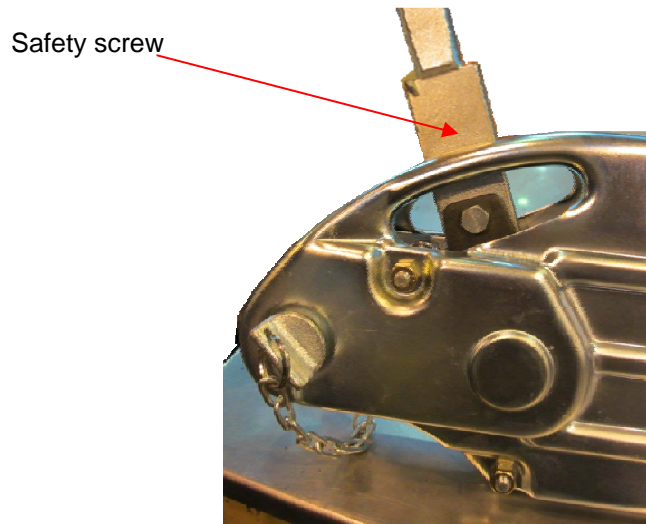


Fig. 4-1 – Safety screw

In the event the safety screw breaks, the Traction Apparatus will be prevented from lifting and the following steps should then be taken:

- Guarantee the safety of the load.
- Unhook the Apparatus.
- When you are sure there is no risk involved in the operation, replace the broken safety screw with an identical original.
- The cause of the overloading needs to be ascertained before using the Traction Apparatus again. The appropriate pulleys or a traction device with a greater capacity can be used for this purpose.



WARNING:

In the event the safety screw breaks, never replace it with one other than the type supplied. The use of any other type of safety screw implies “unknown” behaviour in relation to overloading, with all the consequences this might involve. Contact your retailer or manufacturer for spare parts.

**WARNING:**

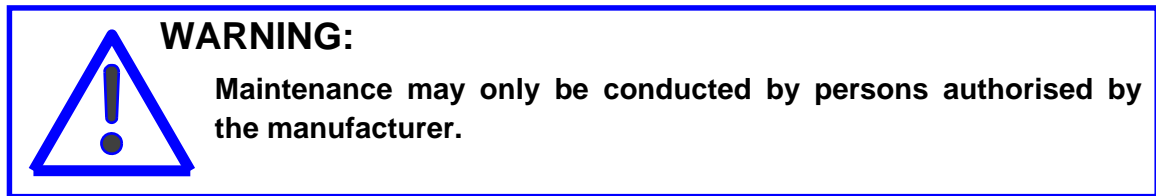
Never replace the safety screw when the Apparatus is loaded.

4.2.1 Individual protection equipment (IPE)

The IPE we recommend wearing is listed below:

- Safety footwear: The use of this type of footwear on the worksite is mandatory. It should feature anti-perforation and anti-slip soles.
- A hard hat: The use of a helmet is mandatory due to the risk of falling objects and impact to the head.
- Work gloves: to handle the Cable and to prevent the risk of abrasions and cuts.
- A reflective vest or clothing: mandatory when vehicles are operating in the vicinity.

5 MAINTENANCE



The Traction Apparatus should be inspected on a regular basis and particularly prior to using it.

The state of the Traction Apparatus should be checked regularly for defects, dents, etc, which might cause it to malfunction. Broken parts should be replaced with new originals when necessary.

NEVER remove a part and continue to use the Traction Apparatus without replacing it.

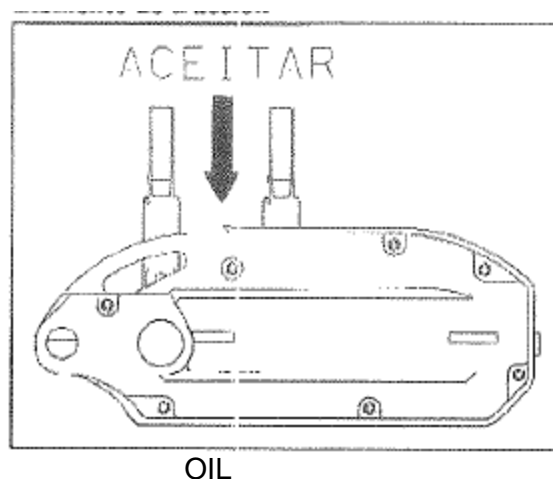
Incorrect use, the use of non-original spare parts and unauthorised modifications or repairs will exempt the manufacturer from all liability and guarantees.

5.1 Maintenance of the Lifting Apparatus

Oiling the Lifting Apparatus after using it for the first time. This should be done frequently, in particular after lengthy use or when the lowering operation has become stiff. Before oiling the equipment we recommend cleaning the apparatus when necessary. Use SAE 90 or SAE 140 oil.

There is no general rule on the frequency at which inspections should be conducted. Practice and the mode of use will dictate the periodicity of such inspections.

If the Lifting Apparatus is to be left idle for some time, it should be well greased as a means of protecting it against corrosion.



5.1.1 Procedure for cleaning the Lifting Apparatus

- Submerge the apparatus in a bath of oil, petrol or similar. The apparatus should be left in this bath for a considerable time (the entire night, for example).

**WARNING:**

Do not use solvents such as acetone, trichloroethylene, trichloroethane or by-products of the same as a cleaning agent, due to their high toxicity levels and for ecological and environmental reasons.

- Engage the levers at least a few times while the Lifting Apparatus is in the bath to ensure the cleaning agents penetrate the entire mechanism.
- Remove the Lifting Apparatus from the bath and place it with the levers face down to enable the residue left inside the equipment to flow out.
- Leave it to dry before oiling.

**WARNING:**

Care should be taken when using cleaning agents such as oil, petrol and similar due to the high flammability of these products.

We should also inspect the state of the casing. The existence of impact marks or dents hamper the movement of the mobile parts of the mechanism, resulting in the Traction Apparatus malfunctioning.

5.2 Maintenance of the Cable

The inspection and maintenance of the Cable is as important, or even more important, than that of the other parts. When a Cable is in use, the stress it undergoes reduces its diameter and stretches it.

The Cable needs to be replaced when its original diameter has been reduced by 10% or more. Fig. 5-1 illustrates the correct manner in which to conduct this operation.

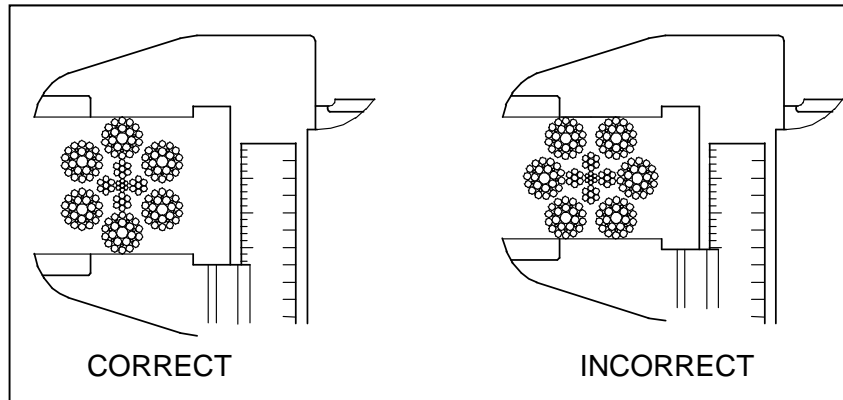



Fig. 5-1 - How to measure the cable

 **WARNING:**
The safety Cable, although not normally used, should be inspected on a regular basis.

A simple visual inspection may reveal defects such as:

- Kinks and twists caused by unrolling the Cable in an incorrect manner.
- Worn and even broken wires; we recommend replacing the Cable when there are 12 broken wires in a 25 cm section.
- Loose or open wires.
- Damage caused by heat.
- External and visible oxidation.
- Internal and hidden oxidation.

Some of these defects appear as follows:

- Formation of loops or elbows arising from incorrect use
- Damage caused by impact, pressure or excessive twisting
- Knot caused by attempting to undo a loop
- Formation of loops
- Bags on the cable



The Cable should be disposed of and replaced when these defects could cause the Traction Apparatus to malfunction or place the safety of the operation at risk.

The Cable should be cleaned before greasing it. The same degreasers recommended for the Traction Apparatus can be used to perform this operation. A brush can also be used to remove any remains stuck to the surface.

The lubricant will need to penetrate the Cable to ensure it is greased correctly.

5.2.1 Maintenance of the coupling on the end of the Cable

A check should be conducted to ensure the safety lock fitted to the coupling (see the figure below) has not been deformed and that it locks correctly when not in use. Remember that a defective safety lock could cause the coupling to come out of place when the Cable is extended.

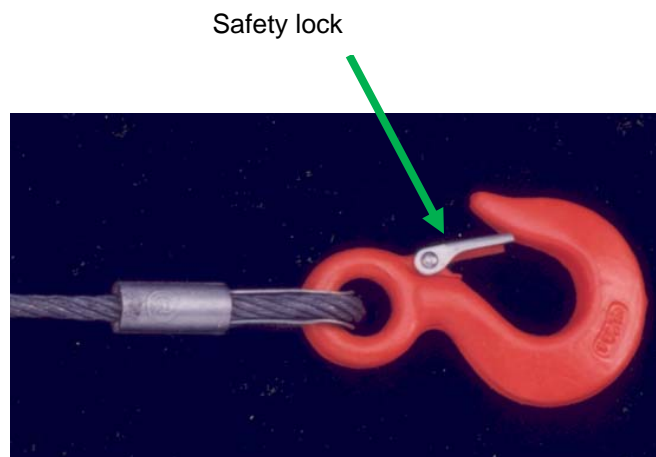


Fig. 5-2 – Coupling and safety lock

5.3 Locating and dealing with faults

| FAULT | CAUSES | SOLUTION |
|--|--|--|
| The Cable is stuck in the mechanism of the Traction Apparatus | The Cable is in poor condition. | Replace the Cable with a new original. |
| | The Cable used is not an original ALBA cable and is unsuitable for the operation | |
| The levers are more difficult to move, or are behaving strangely | The Apparatus has not been oiled correctly | Lubricate the Traction Apparatus using SAE 90 or SAE 140 oil |
| The Up lever moves freely | The safety screw protecting against overloading is broken | Replace the safety screw with a new original. |
| The load shakes when lowering | Inadequately greased Traction Apparatus | To deal with this problem the Traction Apparatus should be greased while engaging the up or down lever in order to facilitate the oiling of the parts. |



WARNING:

The solutions provided in the table above are of a general nature. The detailed procedure to be followed is set forth in the respective chapters of this instructions manual.

6 STORAGE

Once the Traction Apparatus and Cables have been dismantled the equipment should be stored in a dry place protected against the elements.

The equipment should be cleaned and covered once the work has been concluded as a means of extending its service life.

7 PROHIBITED MODES OF USE

In relation to the traction equipment, it is prohibited to:

- Use it with loads greater than those specified.
- Use it when there are obstacles in the path of the load.
- Leave it unlocked for long periods of time.
- Fasten it at any point other than the coupling bolt.
- Use it to hoist or drag persons.
- Use both levers, forward and reverse, at the same time.
- Use a drive device other than the lever supplied with the equipment.
- Use a drive system other than the manual method.
- Replace the safety screw with one of a different type.
- Replace the safety screw when the Apparatus is loaded.
- Handle any part of the Apparatus (other than the drive levers) when it is loaded.
- Use it in an explosive environment.
- Modify the Apparatus without the consent of the manufacturer.

In relation to the Cable, it is prohibited to:

- Use the coupling to secure or sling loads.
- Use the end of the cable coming out of the Apparatus for any use which subjects it to stress.
- Use it when there are signs of impairment.
- Use a cable other than the ALBA cable supplied with the Apparatus.
- Uses where the cable rubs against the surface (other than pulleys and other components specifically designed for the purpose) and edges when in use.

8 GUARANTEE

- Our equipment is guaranteed for 12 months (8-hour working days) against all manufacturing material defects, and all parts acknowledged as defective by our Technical Department will be replaced free of charge and delivered at no cost.
- In the event the Lifting Apparatus is submitted to our Plant for a service after having been used for some time, the purchaser will be liable for all freight costs.
- When the repair, service or replacement of parts is conducted on the premises at which the Lifting Apparatus is installed, the corresponding expenses (travel and labour costs in relation to assemblers, electricians, etc.) will be borne by the purchaser.
- This guarantee does not cover breakages arising from natural wear and tear, incorrect handling, overloading, defective installation and placement or the poor conservation of the Lifting Apparatus.
- The guarantee for all components and materials not manufactured by us, such as bearings, motors, electrical or pneumatic material, etc., will be limited to that granted by our suppliers.
- The guarantee will cease to apply as of the time at which the Lifting Apparatus is submitted for repair or intervention by a third party without our prior authorisation, or in the event the agreed upon terms of payment are not complied with.
- Under no circumstances whatsoever will this Plant be obliged to pay indemnity for loss or damage.

9 “CE” DECLARATION

