WORK PRO®
LIFTERS

LINE ARRAY LIFTING TOWERS

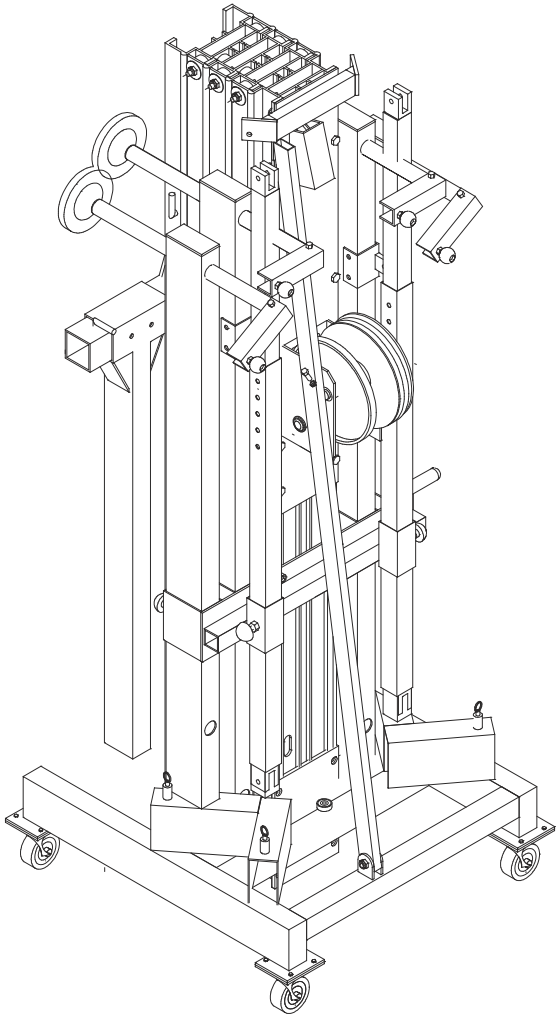
WT 700

USER MANUAL

V. 14

USER MANUAL

W T 7 0 0



Please, read this user manual before use the lifter. It contains import information about security, use and operation.
Take into account the warnings showed in this user manual to get a secure operation.

USER MANUAL WT 700

INTRODUCTION

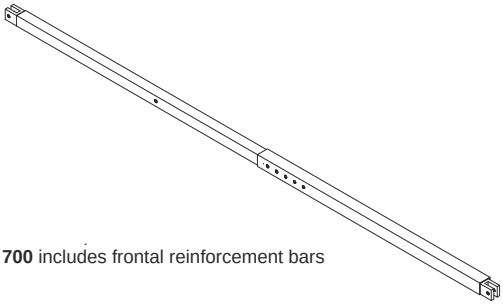
WT 700 is a lifting tower for LINE ARRAY systems composed of different number of extensible aluminium reinforced sections. This profile system can elevated heavy loads at high altitude, making it very suitable for all type of events. The ground reinforcement system has been thoroughly studied, giving the tower legs subjection of great length and stabilizing slopes. The line array bracket system has been strengthened taking into account the force exerted and the thickness of metal walls.

In addition, **WT 700** incorporates two frontal reinforcement bars in order to being able to manage heavy loads with a compact size.

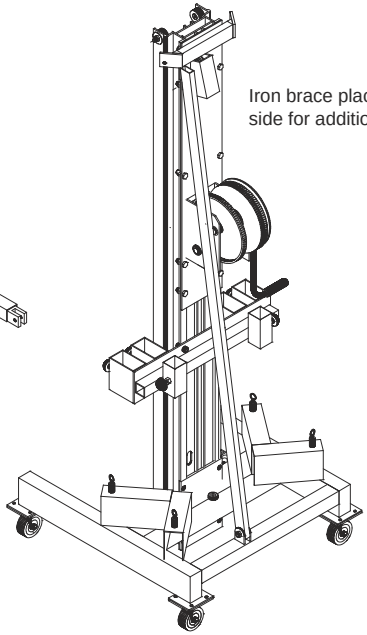
As usual in **WORK** products, all components have been oversized with the goal of achieving a superior security:

- Autoblocking system.
- Bubble level indicator vial.
- 1 iron brace placed in the back side for additional reinforcement.
- 2 reinforcement bars in the front side.
- Strong security cable made of steel under DIN standard.
- Exclusive blocking system with high resistance and able to ensure the whole firmness.

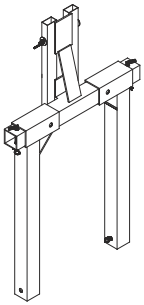
FEATURES

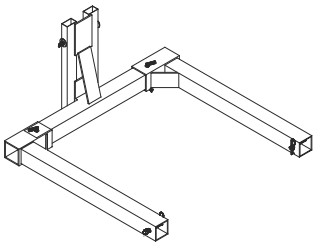


WT 700 includes frontal reinforcement bars

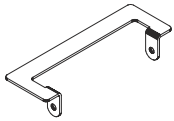


Iron brace placed in the back side for additional reinforcement.





Horizontal fork in order to raise the load coupled.



Upper reinforcing piece in each section to avoid deformations with high loads.

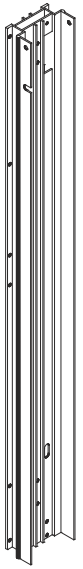
SPECIFICATIONS

	MAX LOAD (KG)	MIN LOAD (KG)	UNFOLDED LIFTER		FOLDED LIFTER		WEIGHT (KG)
			HEIGHT (M)	BASE (M)	HEIGHT (M)	BASE (M)	
	500	30	6,20	2,51 x 2,15	2,00	0,75 x 0,74	247

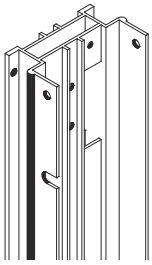
	CABLE						WINCH	
	COMPOS. (GALVANIZED)	Ø (mm)	RESIST. (N / mm2)	LOAD (KN - KP)	WEIGHT/Mt (KG/M)	ROLL.	BOBBING CAPACITY (M.)	REDUCT. RANGE
WT 700	7 x 19+1	7	1770	28.8 - 2930	0,187	CROSSED TO RIGHT	48	3.75 : 1

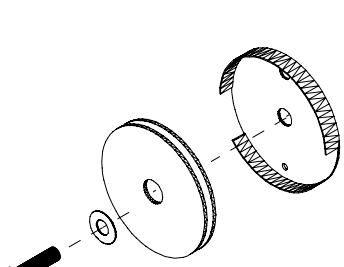
STANDARDS & REGULATIONS
DIN 15020 / VGB 1 / VGB 8

FASTENER SYSTEM



This system uses a profile especially designed to heavy loads. the width of these profiles and the wall thickness, ensure a great firmness of the assembly. They incorporate a lane with fixing holes which houses safety pins. these holes are large enough so that the pins introduced easily and quickly providing a fast deployment of the tower.



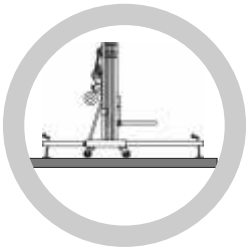


Safety pins have been oversized, both in diameter as the piston as the main safety part. the lock/unlock system is performed exerting a small flip and rotate, allowing this operation so simple and complete security.

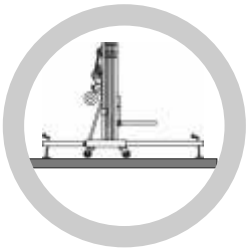
The pulley system (which raised or lowered each profile), is responsible for transmitting the stress generated in the winch and raise each section, for this reason, these pulleys have a proper design to handle the wire, covering the entire system in a compact assembly.

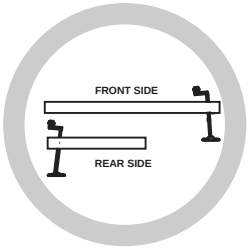
SAFETY RULES

Do not elevate the tower without using the stabilize legs.

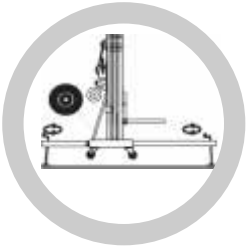


Place the tower over a flat and stable surface.
Do not install it in a place where the use over the stabilize leg would not be enough to reach a perfect balance.

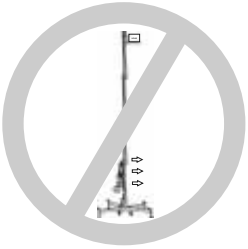




The two largest legs must be placed in the frontal tower side and the shortest ones at both winch sides.



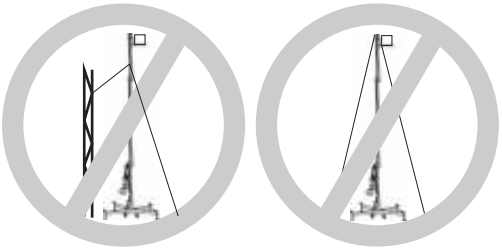
Act individually over the stabilize leg enssuring a perfect balance of the tower. This balance will be showed in the vial.



Do not move the tower or stabilizer legs after the load is elevated

Do not lean elements (like stairs, platforms, scaffoldings, etc.) over the tower which can make pressure over it and to destabilize

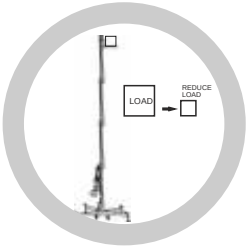
WARNING !!!



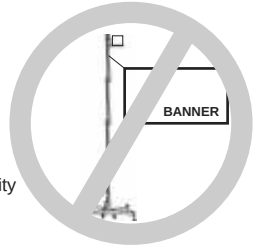
According to the Directive 2006/42/EC, the use of lifters outdoor is forbideen. The installation on this circunstances is under owner responsability.

In case of install the lifter in outdoor, please, observe the following warnings:

Take into account that the stability in outdoor condition will change. Reduce the load coupled.

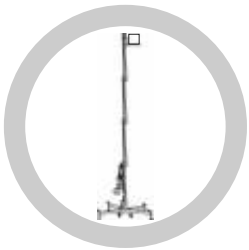


Do not use the tower in heavy wind conditions. Take into account that if the exposed height and surface is maximum, the tower stability is reduced.



Do not use the tower like support for banners or decorates support. With heavy wind, these elements could act as “sail” and to knock over the tower.

DO NOT USE THE LIFTER UNDER THIS CONDITIONS !!!

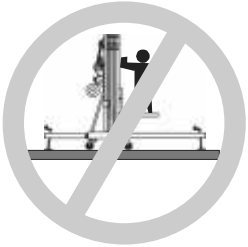


The load must be firmly placed over the support the nearest possible gravity center of the tower, in order to facilitate its balance.

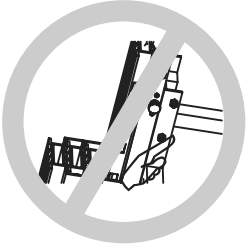
Do not overload the tower beyond the max. weight recommended in the manufacturer specifications.

In the moment you elevate the tower, check that it does not take contact with elements or objects which with the tower could hit or come off.

Be aware specially with the electrical conductions, due to the towers are not electrically isolated, it can represent a serious electric shock danger.



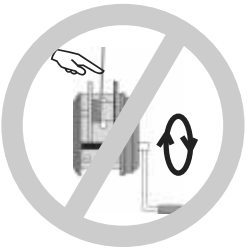
This tower is not designed to elevate persons. Do not use it for a different purpose that it has been designed



Keep the hands and fingers moved away to mobiles elements of the towers like profile unions.

Do not lubricate the brake system of the winch, the mechanism could lose efficiency.

SAFETY RULES



Do not catch the cable during the elevation or folding process.

Avoid the non-desired tower manipulation by non-qualified people.

WARNING !!!

Check before each use the following points:

- **Winch**: Check the good operation turning it in both directions.
- **Cable**: Unroll it checking the cable is not frayed
- **Pin bolts**: Check the block/unblock operation
- **Stabilizers**: Check they are not bent
- Without load, deploy/undeploy the lifter to check the correct operation.

In case of any problem with this checks, **DO NOT USE THE LIFTER** and contact with an authorized technician.

NOT TAKE INTO CONSIDERATION THESE RULES COULD CAUSE THE KNOCK OVER OF THE TOWER OR ITS LOAD, PROVOCATING DAMAGES IN PEOPLE AND PROPERTIES

INSTALLING THE LIFTING TOWER

Place the tower over a flat and stable surface to install the tower, discarding its use over rolling platforms or surfaces which would be able to bear as much its own weight as coupled load.

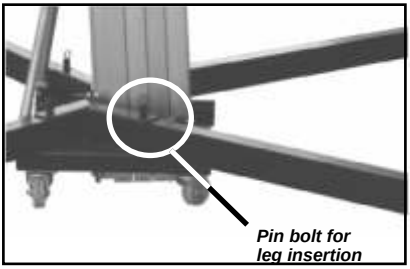
The installation area must be free of debris, stone, etc. that reduce the firmness of the tower at ground.

Moreover the tower must no be placed near elemenst which can obstruct the vertical folding process like balconies, cornices, etc.

Be aware specially with the proximity of electric cables which the tower could take or crimp them. Consider that the tower is not electrically isolated, so, it can be load with electricity and to constituate a serious electric shock risk.

The tower disposes of two sets of legs with different length in order to settle the tower Remove them for the transport support in order to insert them.

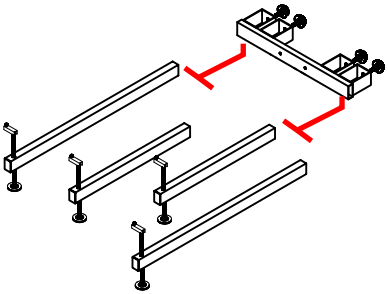
INSTALLING THE LIFTING TOWER

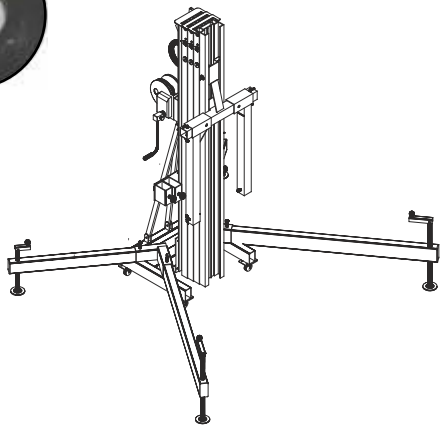


In order to insert the legs, use corresponding pin bolt and insert the leg to correct position triggering the bolt to ensure the set stability.

Rotate the crank of the stabilizer placed on each legs up to the wheels located in the base do not touch the ground. During this process, control the vial in order to act individually over each stabilizer up to obtain a perfect balance.

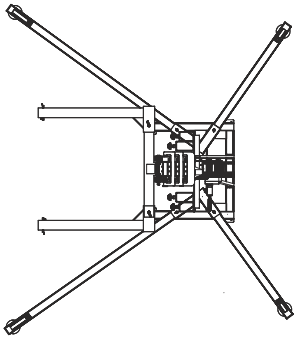
Vial for level control





When you place them, consider that the 2 longest legs must be placed in the frontal side of the tower and the shorter ones in both sides of the winch.

The longest legs placed in the frontal side.



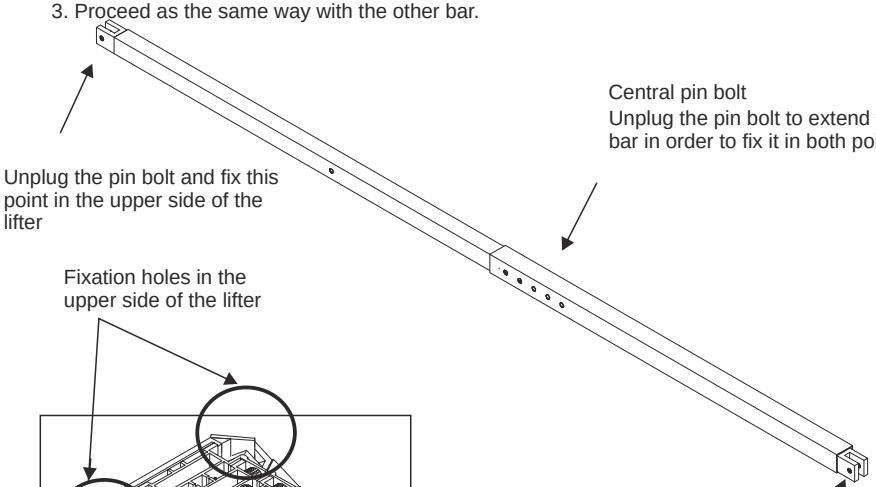
INSTALLING FRONTAL THE REINFORCEMENT BARS

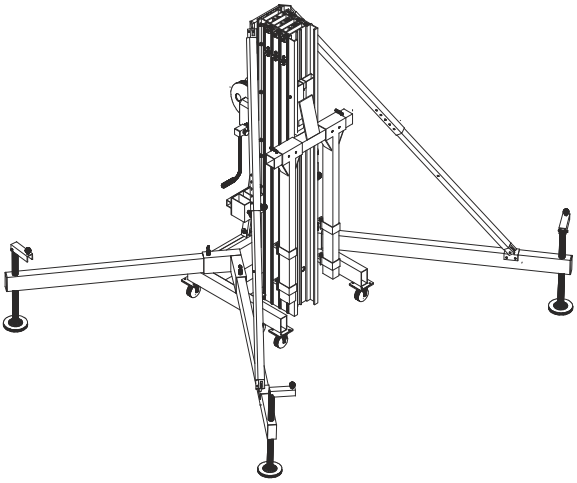
Once inserted the legs, it is necessary to fit the frontal reinforcement bars.

1. Unplug the pin bolts and fix the bar in the hole placed in the upper side of the lifter. Plug the pin bolt again.

2. Now, deploy the bar until the frontal leg fixation point, extending it and fixing the central pint bolt in the apropriate position.

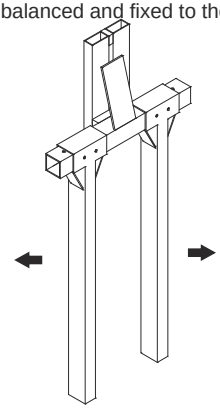
3. Proceed as the same way with the other bar.

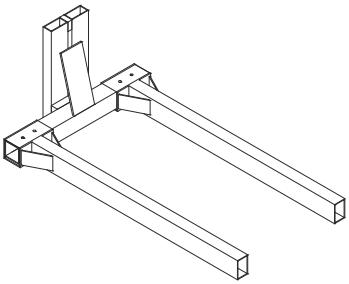




PLACING THE LOAD

Once the tower will be balanced and fixed to the ground, you can proceed to place the load on the incorporate support.

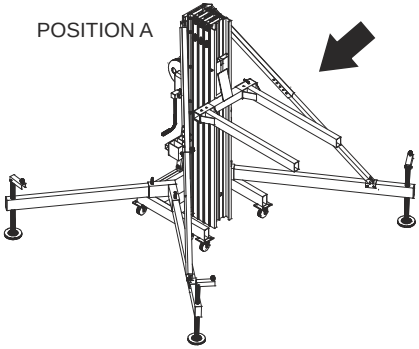




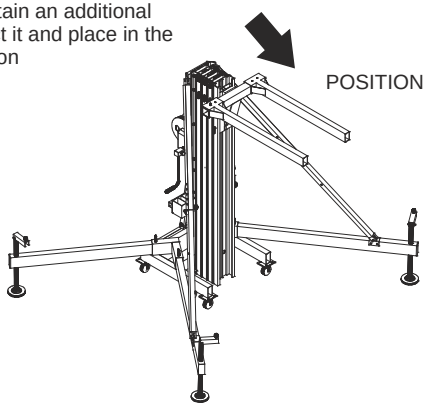
Support in stand position for transport. Extract the pin bolts and place it in horizontal position in order to locate the load.

The fork has 2 positions in order to obtain an additional height. Extract it and place in the desired position

POSITION A

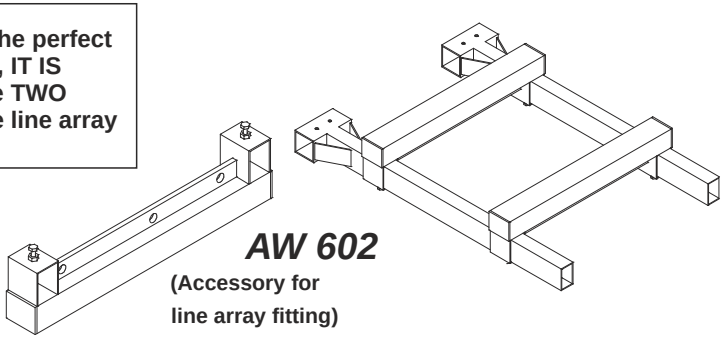


POSITION B



We recommended to place the fork in the default position (POSITION A)

In order to ensure the perfect stability of the load, IT IS NECESSARY to use TWO accesories to fit the line array system.



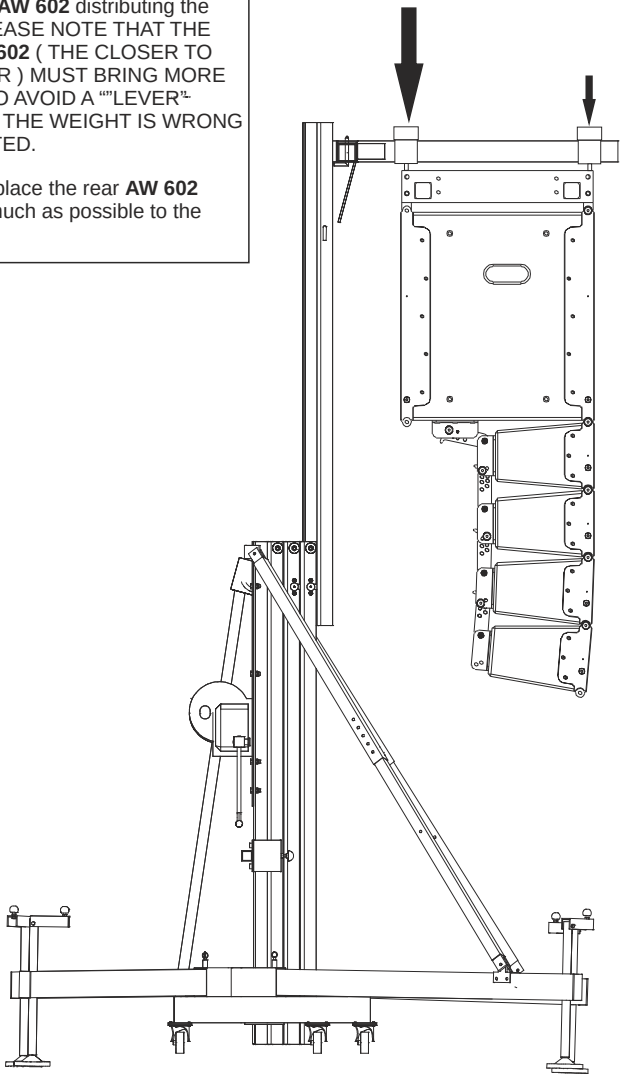
AW 602

(Accessory for line array fitting)

PLACING THE LOAD

Place both **AW 602** distributing the weight. PLEASE NOTE THAT THE REAR **AW 602** (THE CLOSER TO THE LIFTER) MUST BRING MORE WEIGHT TO AVOID A ""LEVER"- EFFECT IF THE WEIGHT IS WRONG DISTRIBUTED.

Therefore, place the rear **AW 602** closed as much as possible to the lifter

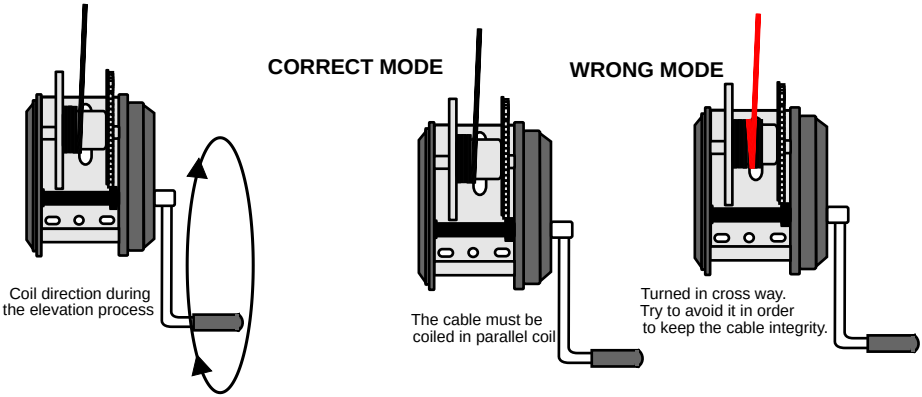


WINCH OPERATION

During the tower elevation process, pay attention to the cable rolling.
This cable must the coiled in parallel turns around the winch cylinder NEVER MUST BE PRODUCED CABLE CROSSES IN DIFFERENT DIRECTIONS.

In this way, that cable can be dangered or got worn, causing, at the end, the break of the cable.

If any spiral is rolled in this way, turn the winch in opposite sense up to release of wrong turn. Then, proceed to coil again in an appropriated way



SPECIAL CARE

OVERLOAD

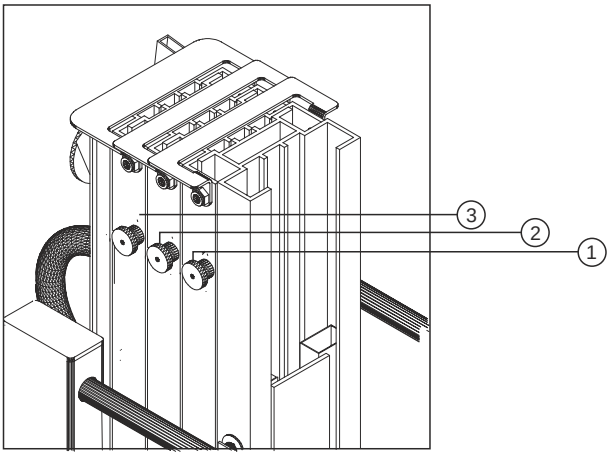
In order to avoid overload the lifter, causing the falling of the load or, even, the own lifter. Please, take into account the following warnings:

- In the sticker placed in the lifter, is indicated the **MAXIMUM LOAD** allowed. Please, do not exceed this limit.

- In this user manual is showed the same information.

- In overload conditions, the lifter does not operate normally, the profiles does not deploy. Take into account that in this circunstance an authorized technician must be necessary to folded the lifter.

LIFTING PROCESS



SAFETY PIN BOLT

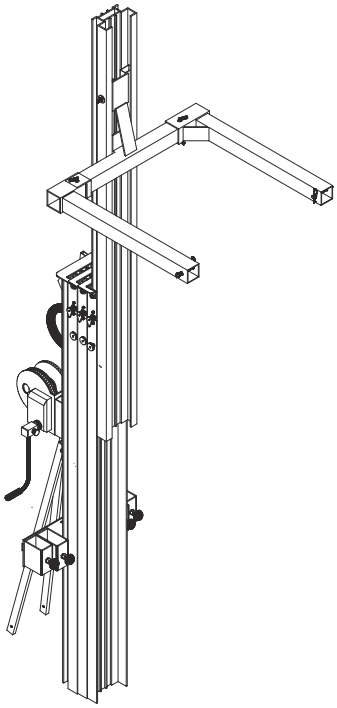
Blocked

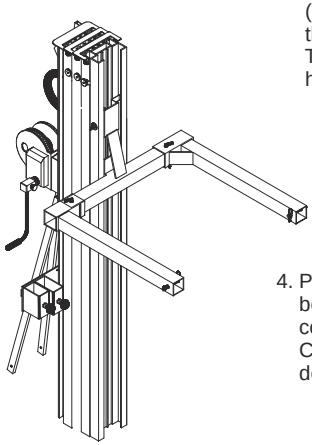
Unblocked

1. When the lifter is in the required position, secured with the legs and frontal reinforcement bars and atthaced with the frontal support for the load, is time to raise the load coupled.

2. Unblock the pint bolt marked as 1 and keep it in this position.

3. Turn the winch clockwise, the profile that incorporates the support with the load, begin to rise.
   Be careful controlling the load on each moment to avoid oscillations.
   When you consider that the profile is in the correct position, block the pin (marked 1) again and continue turning the winch.
   The pin will be inserted into the next hole of the lane.

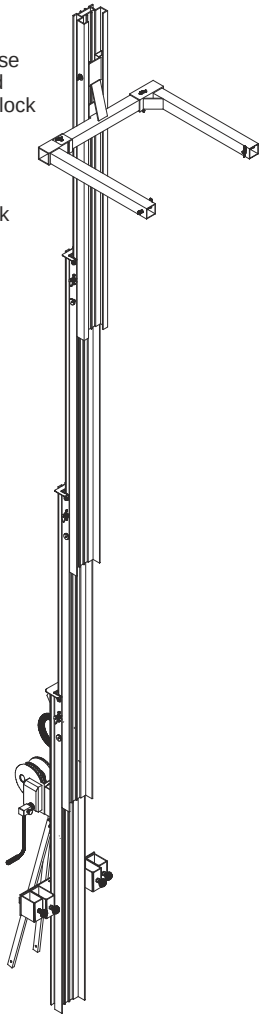


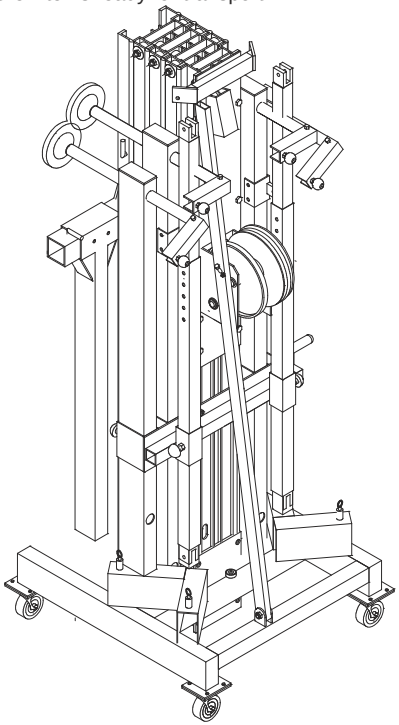


4. Proceed in the same way with the pin bolt marked as 2 in order to elevate the corresponding profile.
   Continue with the 3rd pin bolt until deploy the lifter completely.

DESCENT/FOLDING PROCESS

1. For the lifter descent/folding process, proceed in reverse way. Extract the pin bolt corresponding to the profile closed the winch without unblocking it and use the other hand to turn the winch in counterclockwise sense, carefully to avoid oscillations. Once the section reach the rest position, release the pin. It will block in the next fixation position. In case of problem during the folding process, releasing it, due to it is blocked, the pin bolt will be fixed in the next fixation position, blocking the profile.
2. Now we have to descend the next profile. Perform the same operation,unblock the pin for the associated profile.Once fully down the profile, block again the pin
3. Finally, proceed with the first profile unblocking the pin and rotating the winch until the complete folding of the section. Re- block the pin
4. Remove the load of the horizontal support.
5. Place the horizontal support arms in the transport position.
6. Block ALL pins.
7. Remove frontal bars and insert them into their accommodation.
8. Remove front and rear legs and insert them into their accommodation.
9. Now the lifter is ready for transport.





SAFETY OF MACHINERY (RISK ASSESSMENT)

Nº	TYPE OF HAZARD	HAZARD DETECTED	SOLUTION	OBSERVATION
1	MECHANICAL HAZARDS	Overload	Warning label and reference in the user manual for the maximum load allowed	
2			Safety pins block sections	
3			Automatic brake winch	
4			Oversized steel cable	
5			Rear bar that allows their balance	See figure 1
6			Front legs longer than the rear	See figure 2
7			1º tilt in the opposite direction to the placement of the load	See figure 3
8			Tower elements are designed with a safety factor of 1.5 to 1 according to rules of machine directive	
9			Upper reinforcement piece on each section	See figure 4
10			Longitudinally reinforced profile design	See figure 5
11			Reinforcing bars in the front	See figure 6
12		Cable break	Safety pins block sections	
13		Pin bolt break	Safety wire keeps the tension of the set	
14		Break pin bolt and wire	IPS system blocks the sections	
15		Is the pin bolt blocked?	The corresponding pin bolt is in the locked position (plunger compressed)	See figure 7
16			The red colour of the pin bolt stands	
17	ERGONOMIC HAZARDS	Risk of tripping over the legs	Warning labels on each leg	See figure 8
18		Risk of injury with moving parts	Pulley covered, no access during lifting / lowering process	
19		Risk of injury with sharp edges	Profiles with rounded edges	
20		Unwanted handling	Winch with removable handle	See figure 9
21		Misplacement of the load	Warning label and reference in the user manual for the correct placement of the load	

SAFETY OF MACHINERY (RISK ASSESSMENT)

Nº	TYPE OF HAZARD	HAZARD DETECTED	SOLUTION	OBSERVATION
22	HAZARDS ASSOCIATED WITH ENVIRONMENT IN WHICH THE LIFTER IS USED	Balance	Rear bar that allows their balance	See figure 1
23			Stabilizers on each leg for adjustment	See figure 2
24			1º tilt in the opposite direction to the placement of the load	See figure 3
25			Anti-slip rubber on each stabilizer	See figure 10
26			Bubble level to correct the slope by the stabilizers	See figure 11
27		Outdoor use	Warning in the user manual. According to the Directive 2006/42/EC, the use of lifters outdoor is forbideen. The installation on this circunstances is under owner responsability.	
28				

FIGURE 1

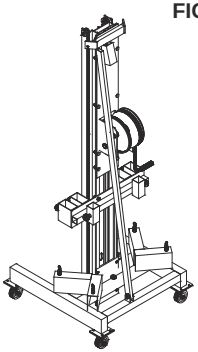


FIGURE 2

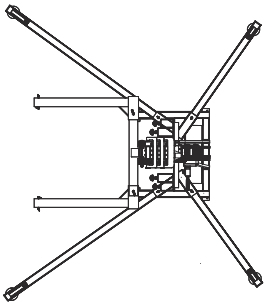


FIGURE 3

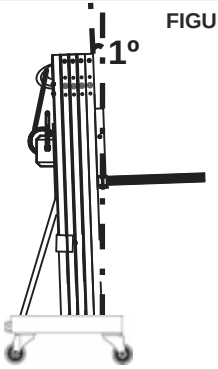


FIGURE 4

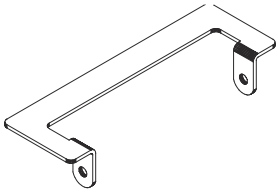


FIGURE 5

FIGURE 6

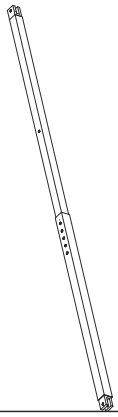
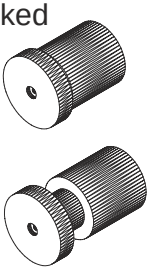


FIGURE 7

Blocked



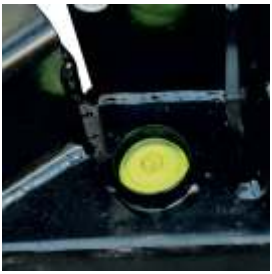
Unblocked

FIGURE 8

FIGURE 9

FIGURE 10

FIGURE 11



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TEST CERTIFICATE

The described Truss-Lifts meets all the requirements specified in the Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC.

Applicant	:	**EQUIPSON, S.A**
Address	:	Avda. El Saler, 14 Pol. Industrial L´Alteró 46460 SILLA - Valencia (Spain)
Representative	:	**EQUIPSON, S.A**
Address	:	Avda. El Saler, 14 Pol. Industrial L´Alteró 46460 SILLA - Valencia (Spain)
Description	:	Lift for Line Array Systems **WORK®** WT 150 **WORK®** WT 500 **WORK®** WT 550 **WORK®** WT 700

Juan José Vila
(Product Manager)
February 12, 2014

CE

The test report was carried out from the submitted type-samples of a product in conformity with the specification of the respective standards. The certificate holder has the right to fix the CE-mark on the product complying with the inspection samples.

BGV C1 REGULATION, Explanation

BGV C1 is a regulation for Staging and Production Facilities for the Entertainment Industry. Lifting and rigging equipment is just part of this standard and cover structures and other technical matters.
Adopting
BGV C1 is entirely voluntary (except in Germany) but its adoption is generally required by insurance companies and therefore it has effectively become an industry standard.
The application of this standard over lifting towers is vital due to in theatres, stages, etc. are used to move loads over performers and, in some cases, above spectators, representing a potential falling risk.

BGV C1 REGULATION, Application fields

This standard is orientated in two ways:
By one side, the lifting towers adopt designs and materials in order to achieve a high security degree in magnitudes like load supported, balance, friction resistance, etc.
So a **WORK**® lifting tower **BGV C1** certified ensures the customer that has passed strict test during its design, materials choice or load and effort verifications.
By other side, in order to achieve an optimum operation with these units, is recommended as much a responsible use of the unit, complying basic rules like maximum load accepted or tower balance as maintenance periodic, which must be carried by expert technicians, checking the good state of the steel cable and winch, operation of the safety bolts and folding/unfolding of the entire profile system.

BGV C1, TESTS & CHECKS

MODEL | SERIAL NUMBER

INITIAL CHECK (First year) | Checked by

Date | Signature

Tested elements and conclusions

FOUR YEARS TEST | Checked by

Date | Signature

Tested elements and conclusions

ANNUAL TEST (passing the fourth year)

Checked by

Date

Signature

Tested elements and conclusions

ANNUAL TEST (passing the fourth year)

Checked by

Date

Signature

Tested elements and conclusions

ANNUAL TEST (passing the fourth year)

Checked by

Date

Signature

Tested elements and conclusions

MAKE COPIES OF THIS PAGE IN ORDER TO FULFILL THE TEST INFORMATION DURING THE FOLLOWING YEARS

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