

# **WORK** PRO<sup>®</sup> **L I F T E R S**

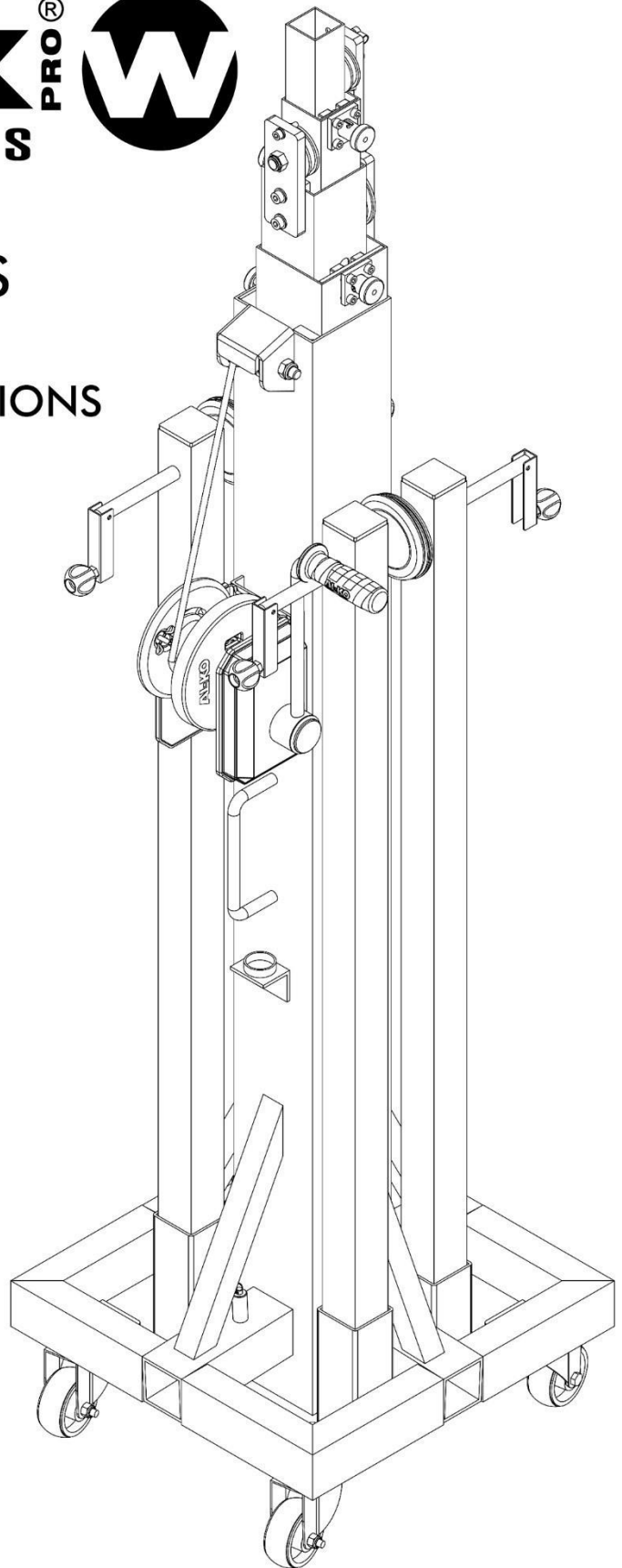


## **LIFTING SYSTEMS**

### **OPERATING INSTRUCTIONS**

#### **FOR MODELS:**

LW 142D /DY  
LW 150D /DY  
LW 155D /DY  
LW 185D /DY  
LW 265D /DY  
LW 290D /DY  
LW 330D





## IMPORTANT

Carefully read and understand all points and aspects of this manual. Lifting loads irresponsibly can cause lethal accidents. Installation of lifting systems and proper use are only responsibility of the user.

It is recommended to attach this manual with the tower system used.

In case of doubt, consult the technical department of Work Lifters.

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## CONTACT

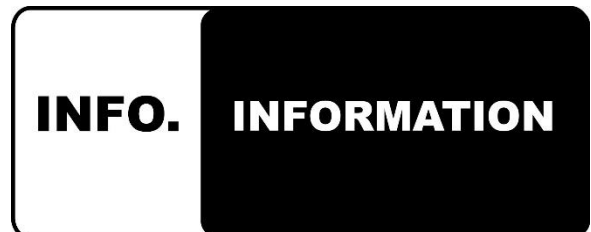
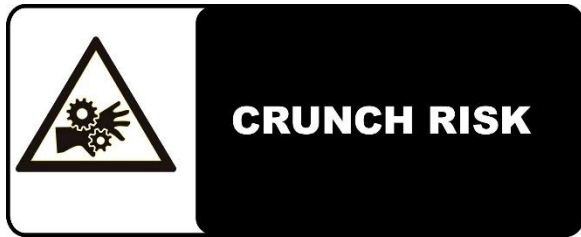
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## WARNING ICONS



### ADDITIONAL DOCUMENTS

Follow this link to download the maintenance user manual for LW-D series.

[LW-D Series MAINTENANCE](#)

Or visit [www.worklifters.com](http://www.worklifters.com)

# RULES AND SAFETY USE

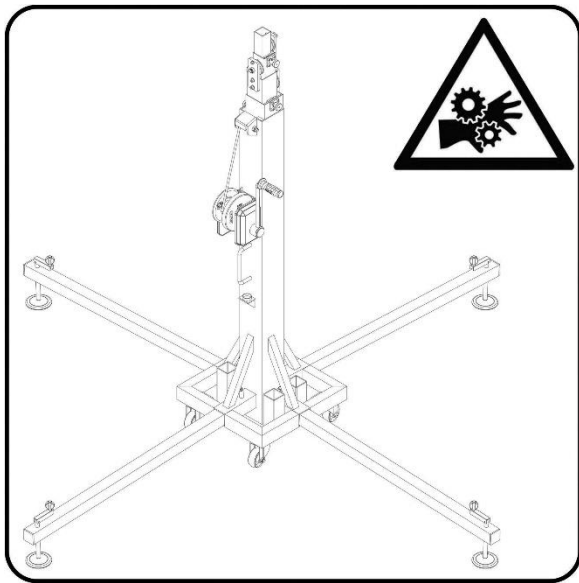


Figure 1

Keep hands and fingers away from moving parts of the tower.

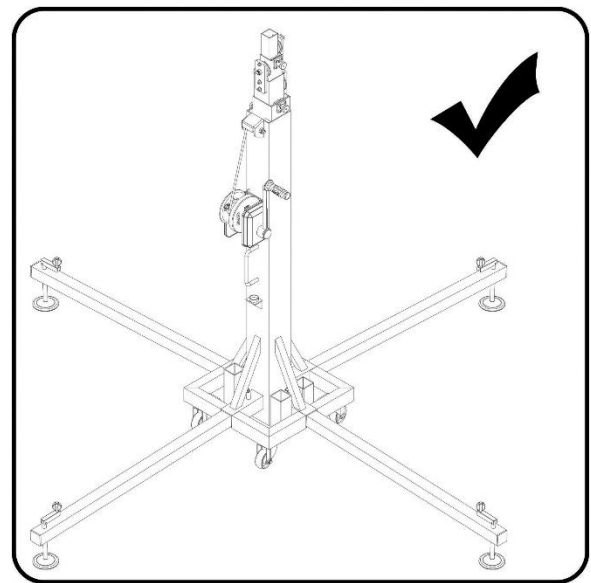


Figure 3

Do not lift the tower without proper leveling. To lift a load, the tower must always be stabilized. The wheels must not touch the ground.

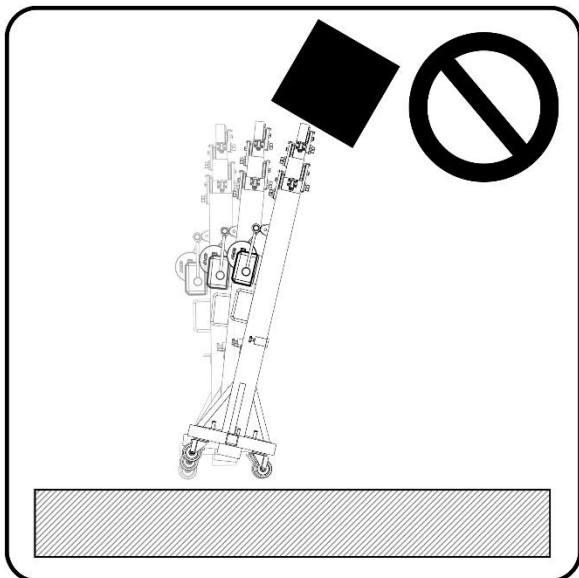


Figure 2

Not charge the tower without the stabilizers legs.

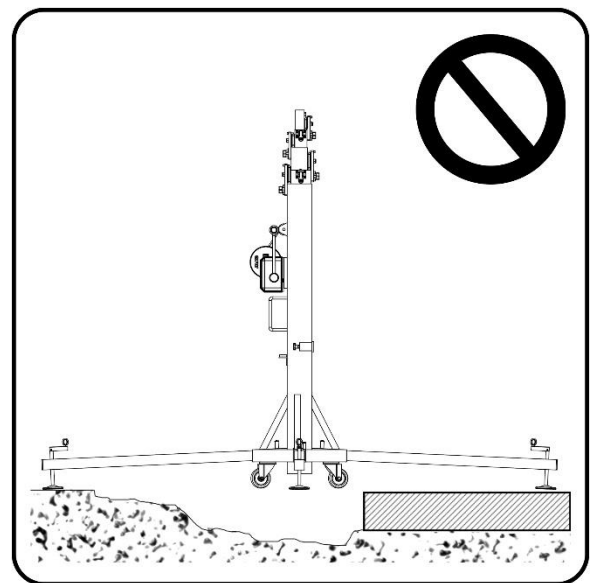


Figure 4

Place the tower on a stable surface.

If the ground has a low degree of compaction (earth, gravel, etc..) consult the section of load data.

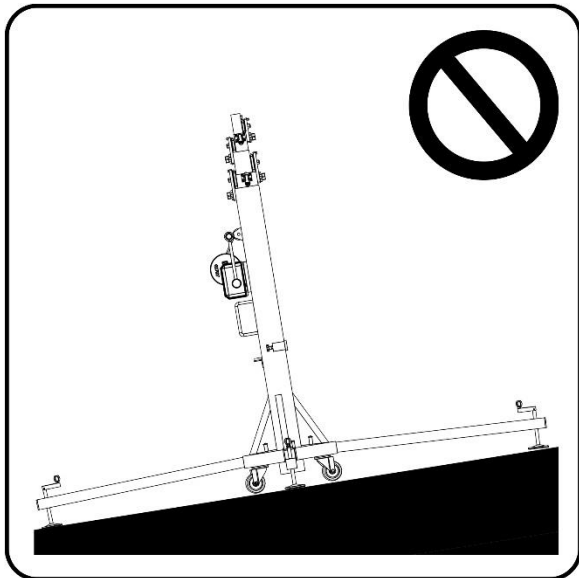


Figure 5

Do not use the tower on inclined surfaces that require pieces to level the tower.

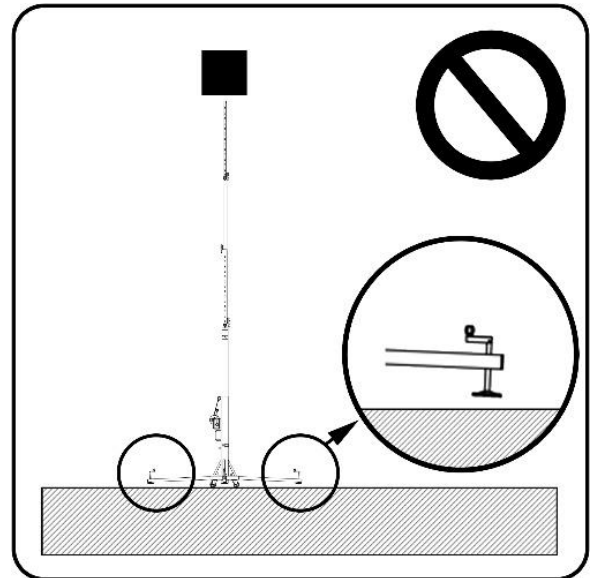


Figure 7

Never move a load without leveling the tower before.



Figure 6

Before placing a load, make sure that the load never exceeds the maximum allowed. Consult the section of load data

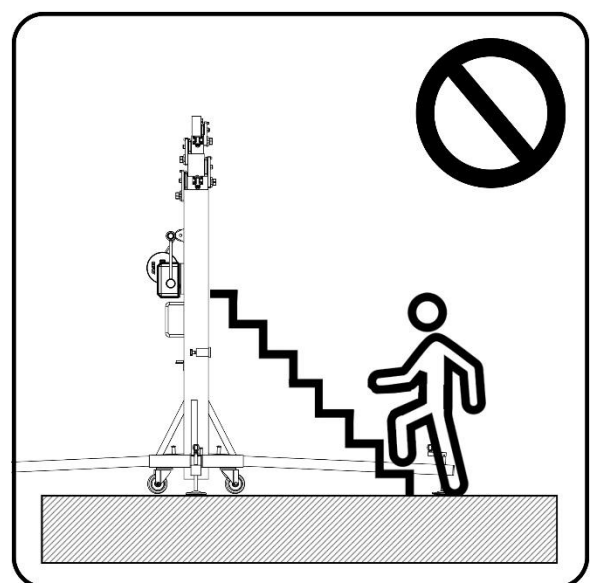


Figure 8

Do not use ladders on the tower or leaning against it.

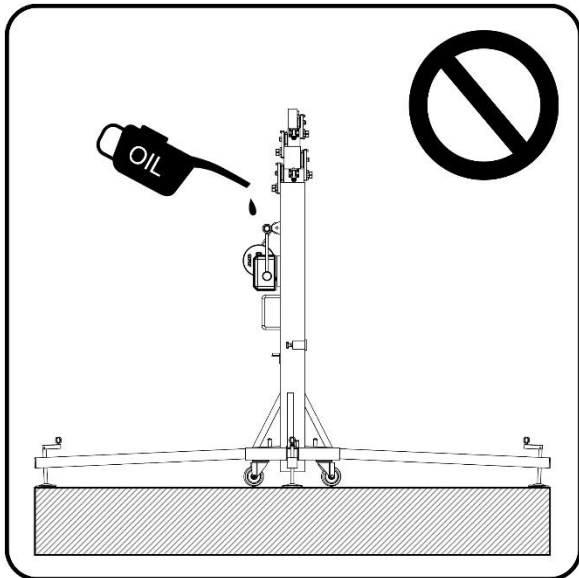


Figure 9

Not grease and lubricate the mechanism of the winch and the pulleys of the masts.

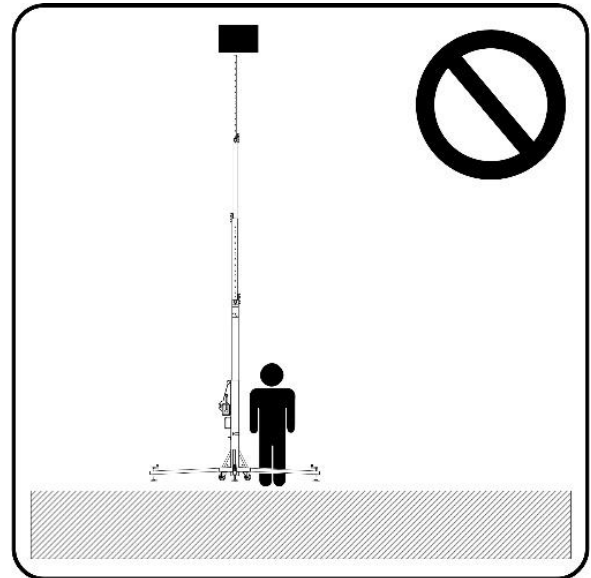


Figure 11

During the rise or descend load process, do not stand under the load. The load must be secured to the tower in order to prevent that it cannot fall down.

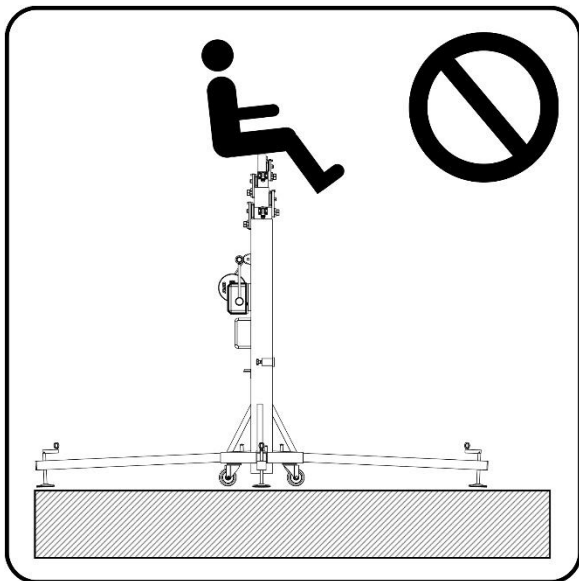


Figure 10

Not allowed to lift people or animals.

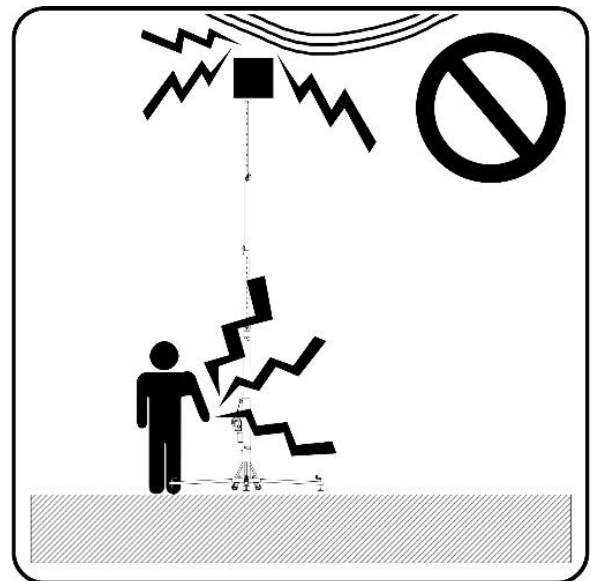


Figure 12

Verify that the tower is beyond the reach of power lines.

The tower is not electrically insulated and can transmit currents of power lines.

On the following table is recommended the average length between the highest part of the structure and the power lines.

Voltage	Min. distance	
	Meters	Feet
Between phases		
0 to 230v	1.5	4.92
230v to 400v	2.8	9.19
400v to 50Kv	3.4	11.15
50Kv to 200Kv	4.9	16.08
200Kv to 350Kv	6.5	21.33
350Kv to 500Kv	8.2	26.90
500Kv to 750Kv	11.3	37.07
750Kv to 1000Kv	14.2	46.59

Figure 13

Not use the tower as welding mass.

If necessary, use the grounding placed on the base.

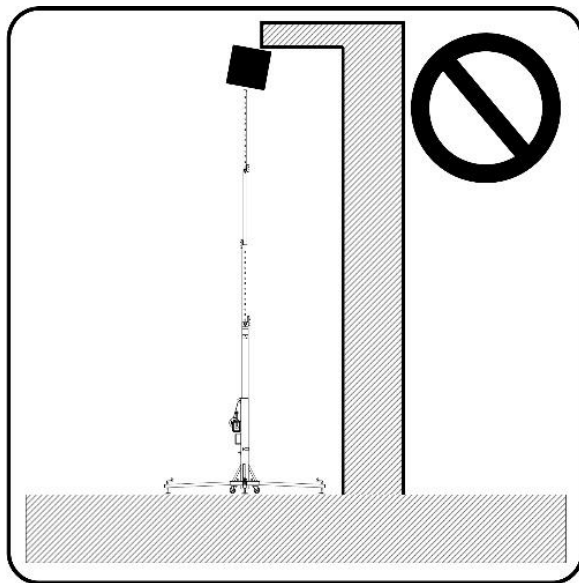


Figure 14

Not lift a load if there is danger of collision. Take at least 1.5 meters on any direction to lift the load safely.

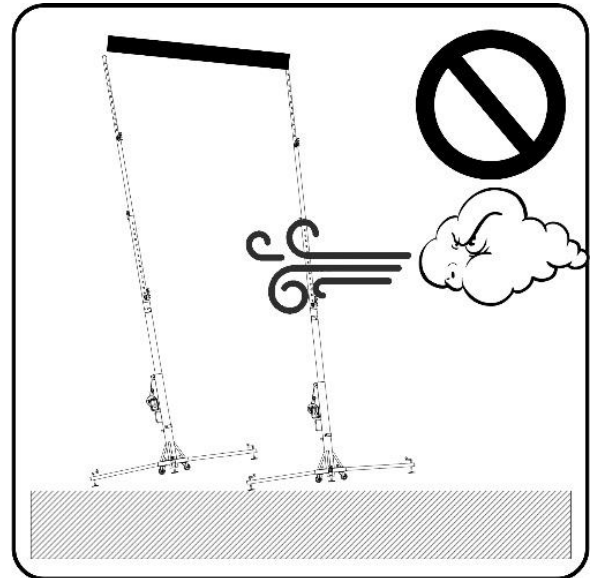


Figure 15

The tower can be used outdoor if the wind speed is low and If it doesn't put the installation in risk. The installation is always under responsibility of the owner.

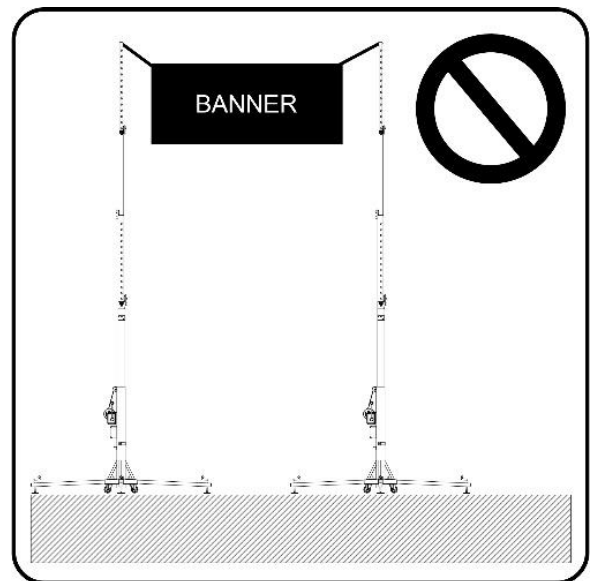


Figure 16

Do not use the tower as a support of banners or another type of decoration with strong wind that can destabilize the tower and make it falls.



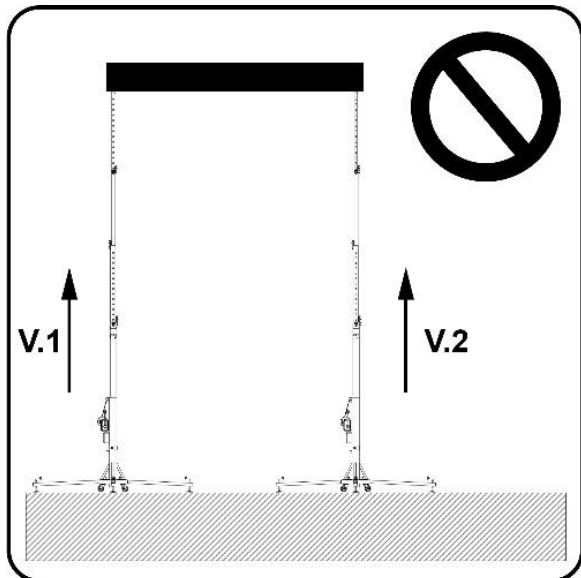


Figure 17

Do not lift structures that require more than one tower at different speeds.

$V1 \neq V2$  No lift

$V1 = V2$  Ok

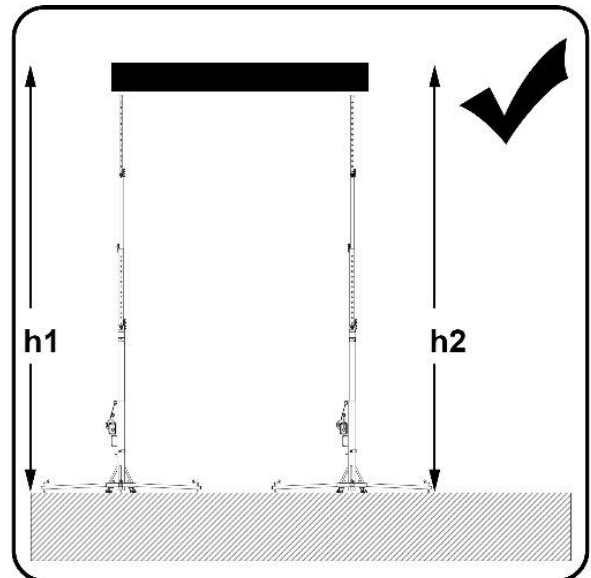


Figure 18

The structure must be levelled correctly. If not, the structure can fall.

Always  $h1 = h2$

## PARTS IDENTIFICATION

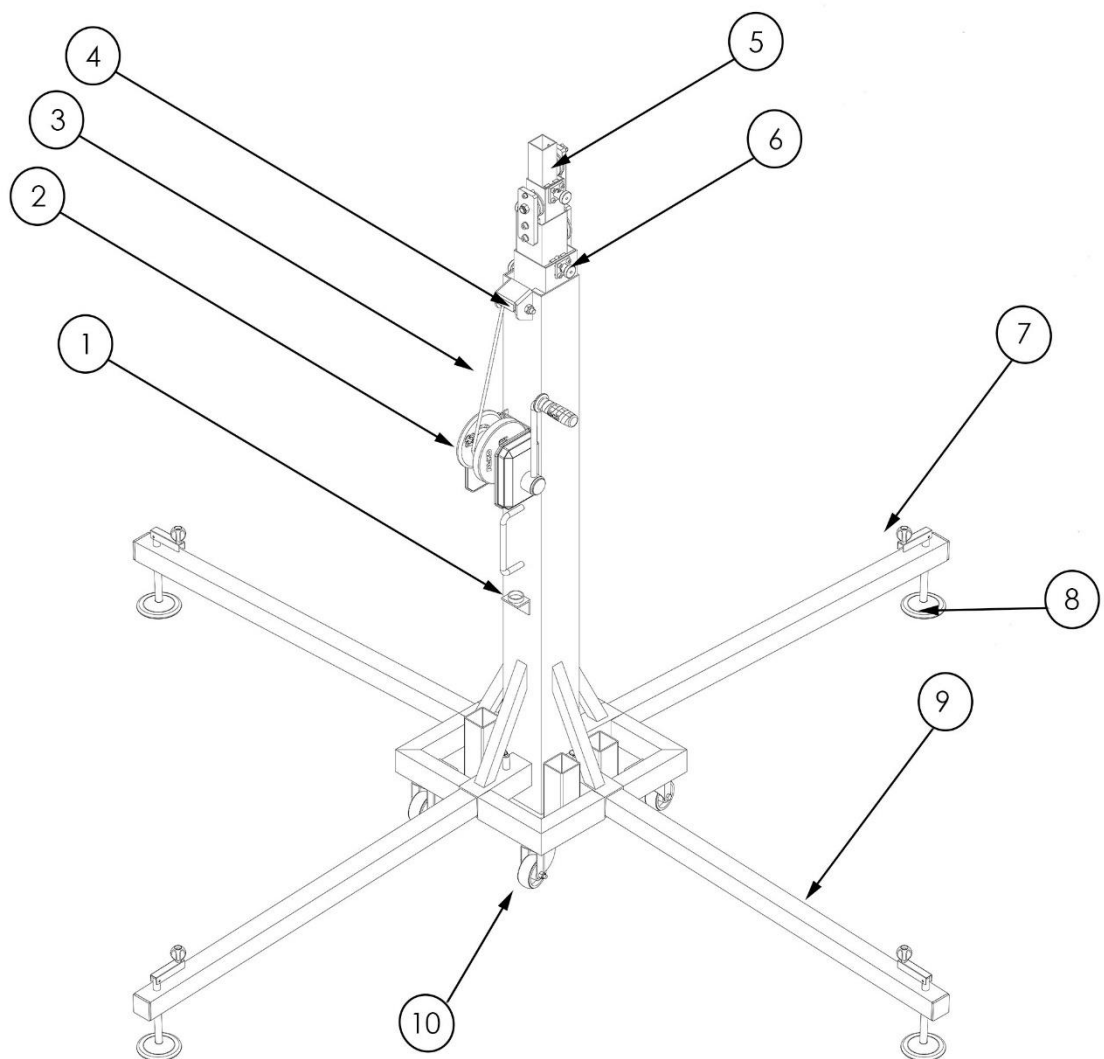


Figure 19

- |   |                   |    |              |
|---|-------------------|----|--------------|
| 1 | Bubble level      | 6  | Lock system  |
| 2 | Winch             | 7  | Level handle |
| 3 | Cable             | 8  | Baseplate    |
| 4 | Wire drive system | 9  | Leg          |
| 5 | Profile           | 10 | Wheel        |

## HOW TO USE. STEP BY STEP

- See Figure 26 in this section to understand the security system function.

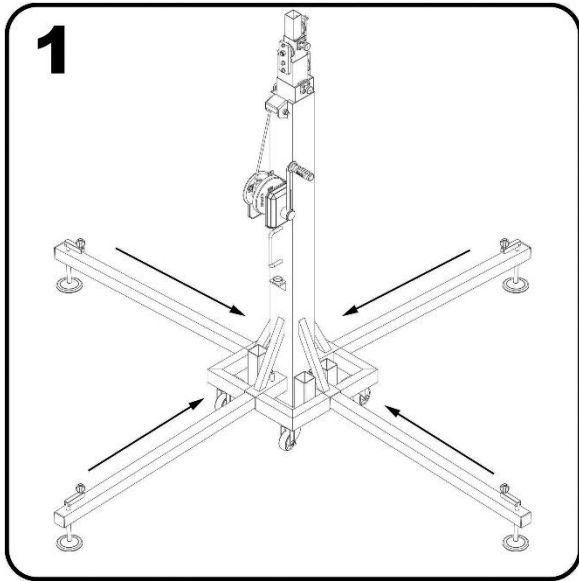


Figure 20

Fix and secure the stabilizers legs to the base.

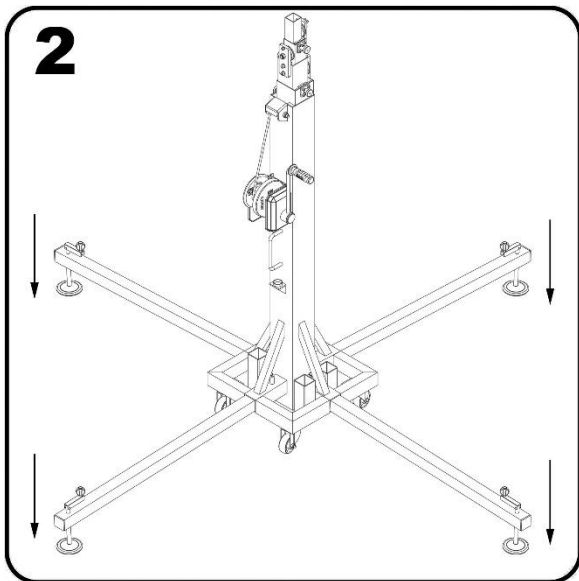


Figure 21

Level the tower. Ensure that the wheels never contact the ground.

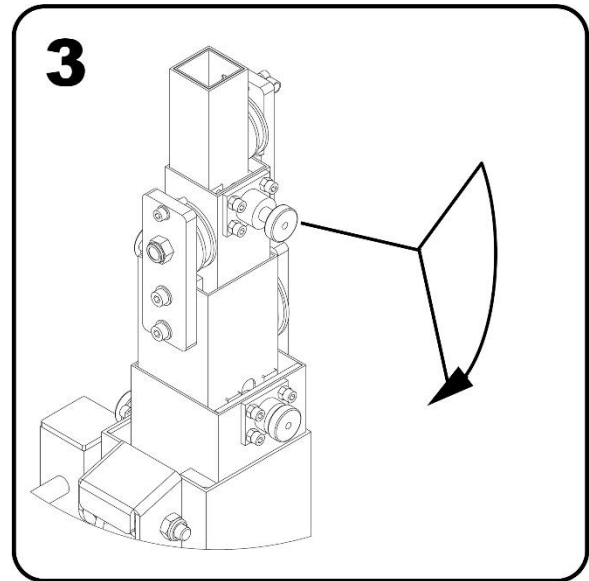


Figure 22

Turn the security of the first profile from horizontal position (blocked) to vertical (opened).

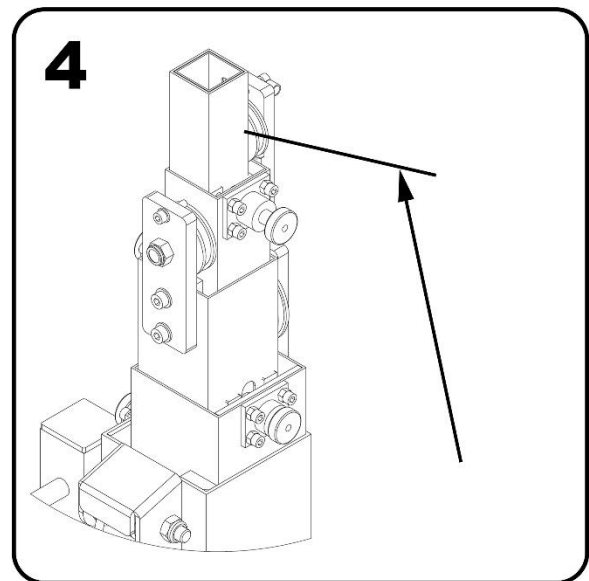


Figure 23

Move the handle of the winch to lift the tower.

When the section reaches its limit, lock with the security system and unlock the following security system to lift the next mast. Do the same operation until you reach the required height.

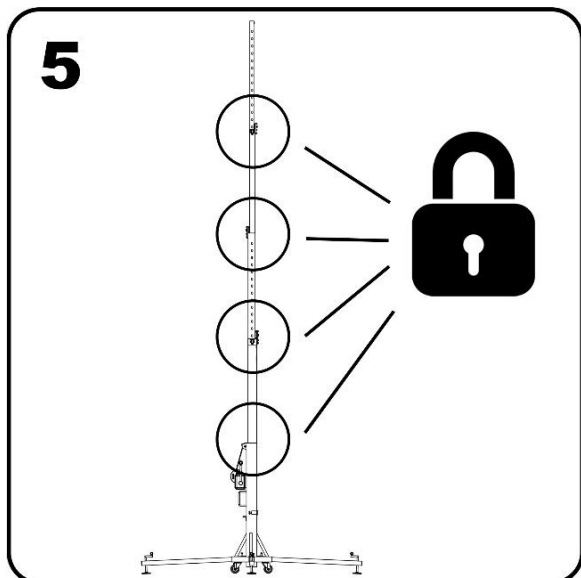


Figure 24

All security systems must be in locked position.

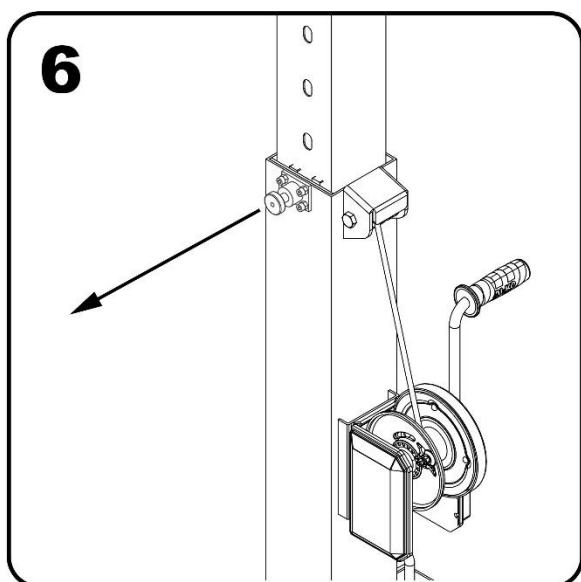


Figure 25

To lower the load: Unlock the first security system. Turn the winch while maintaining the other hand unlocking security system.

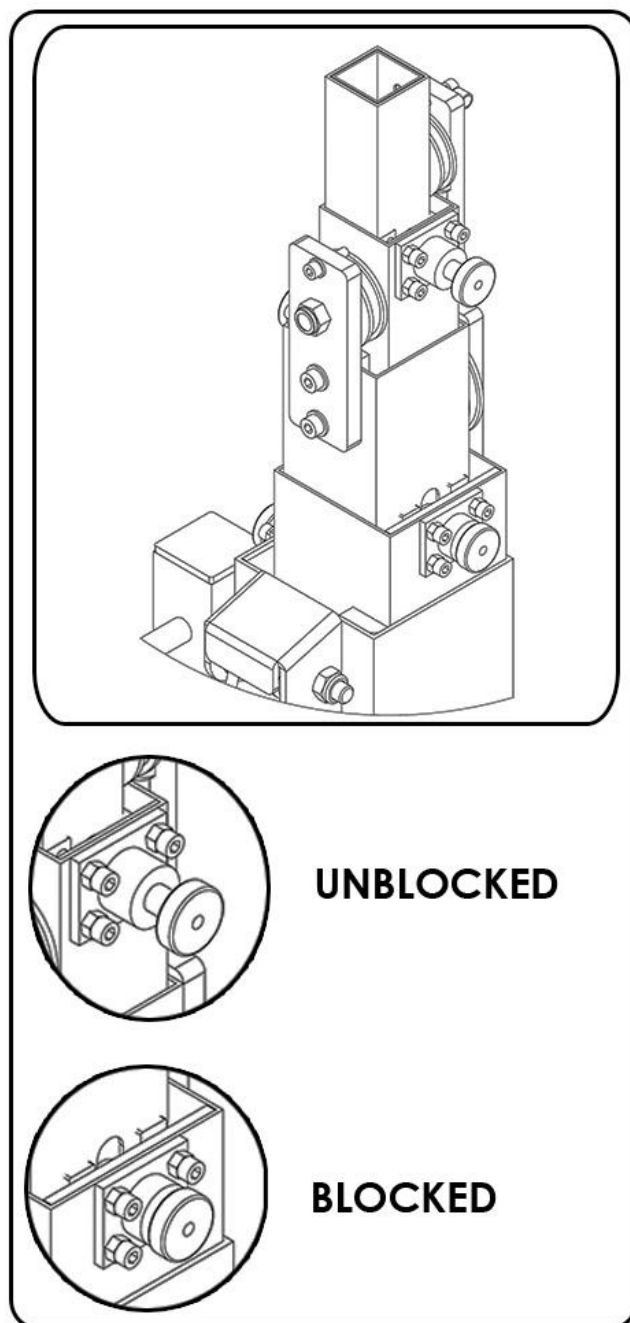


Figure 26

Different positions and purpose of security system:

**BLOCKED:** Once the profile is in the correct position, turn it to block the profile.

**UNBLOCKED:** Unblock the profile to elevate and lower the profile.

# STANDARDS TAKEN INTO ACCOUNT

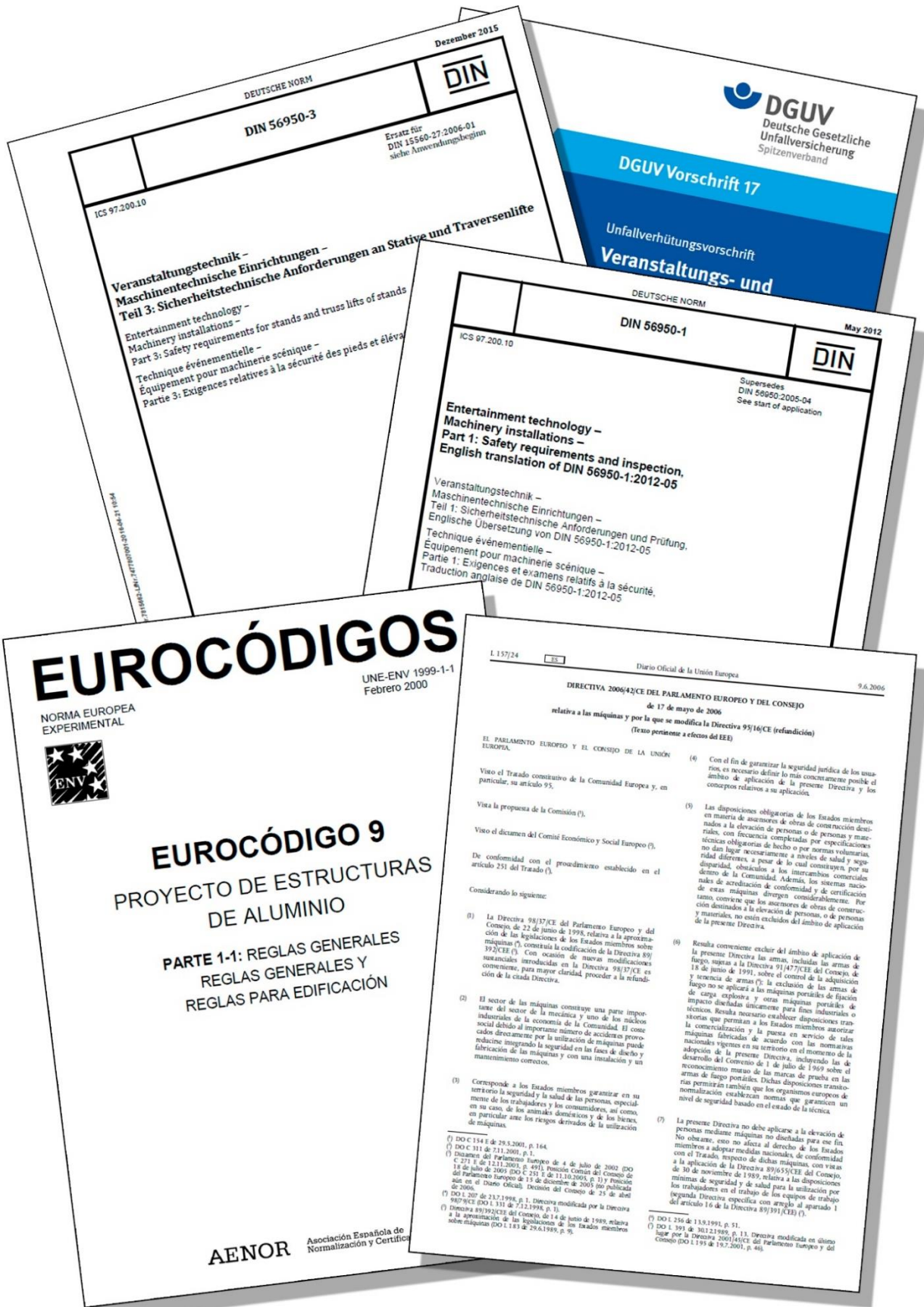


Figure 27

## WIRE DRIVE SYSTEM

**WIRE DRIVE** is a new and important feature. It is responsible for directing the cable across the drum of the winch in such a manner that it prevents undesired and dangerous cable crosses in the drum, making easier the cable roll up/unroll process, and avoiding crashing or fraying that could reduce the useful life of the cable or (in the worst case) its breakage.

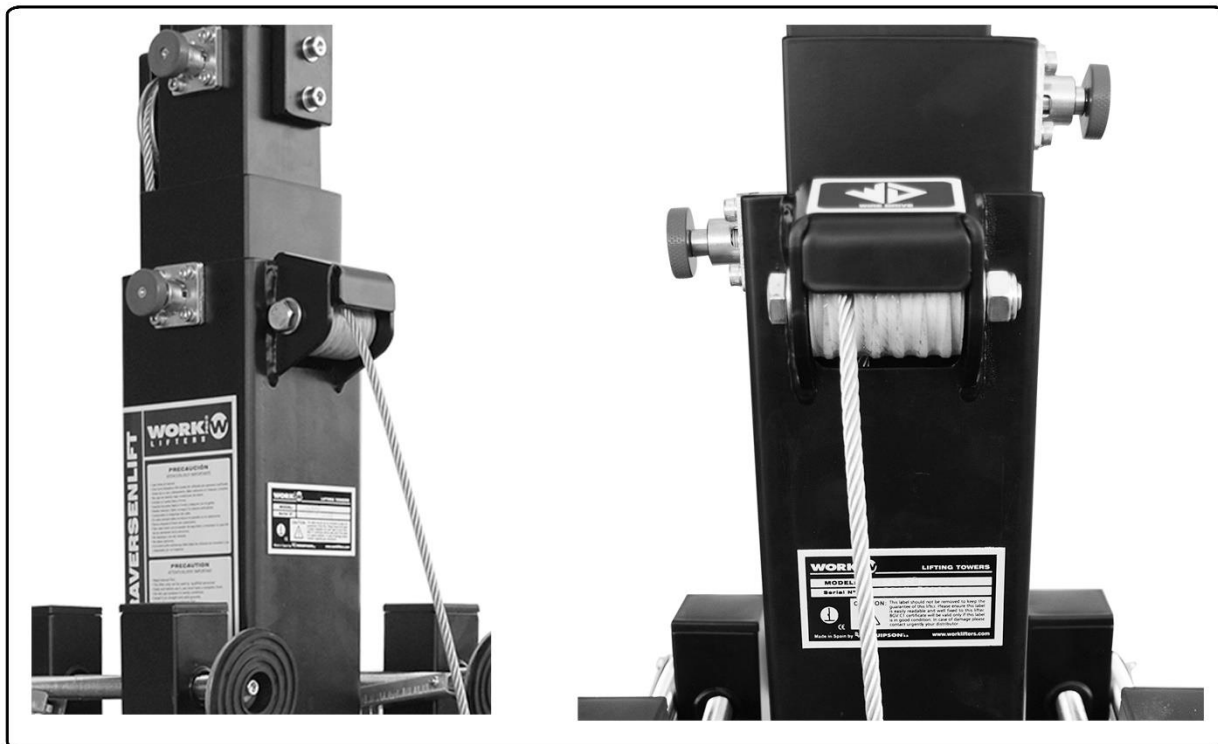


Figure 28

Wire Drive consists of a multidirectional grooved pulley that reduces the wire fleet angle between the winch drum and its entry to the first mast, in order to be compliant with DIN 56950 standard.

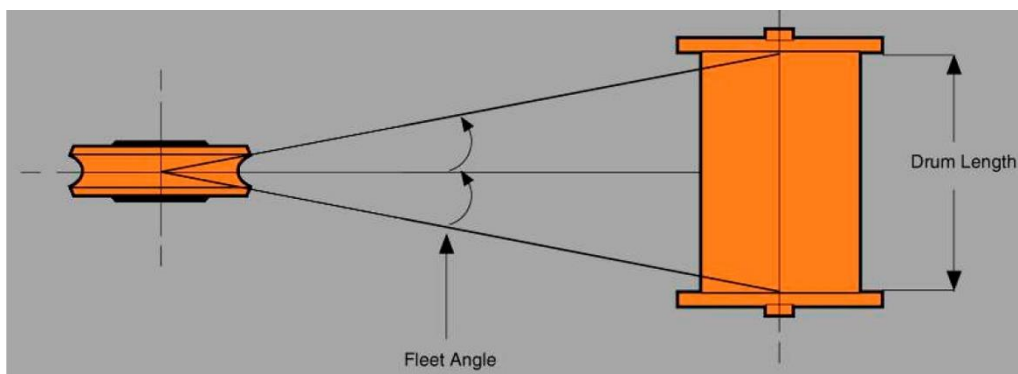


Figure 29

## DYNSYS SYSTEM



The lifters that incorporate the DYNSYS system are named as LW xxx DY:

**LW 142 DY - LW 150 DY – LW 155 DY – LW 185 DY – LW 265 DY – LW 290 DY**

Dynsys system is an optional solution for the control of the maximum load in lifting systems.

Dynsys limits the maximum load of the tower avoiding to raise a higher load to the specified. For more information about maximum load, consult the load chart.

In case of raising a load higher than the maximum, Dynsys detects the increase in load and prevents it from being raised, allowing only the descent of the load.

DYNSYS system works as a preventive maintenance element. In case the tower has some internal damage and forces the system to operate in a forced manner, DYNSYS system will limit its use, preventing that the internal components (cable, pulleys, profiles, etc. ...) may deteriorate further. If this happens, contact the technical department or your nearest distributor.

The system allows the disassembly of the crank, thus allowing the blocking of the tower. In this way it is avoided that personnel outside the installation can manipulate the tower by raising or lowering it. Only the two Allen screws should be removed.

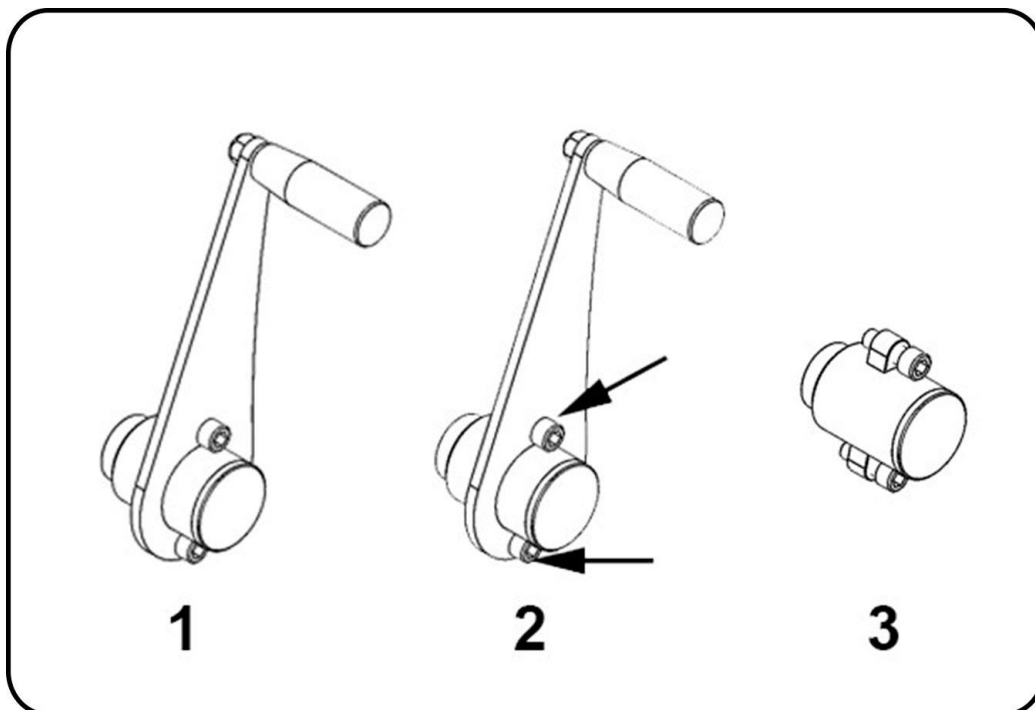


Figure 30

The system has several elements working in a coordinated manner: the most internal profile has a special machining to house the spring and the overload detection.

Finally, the original handle of the winch is replaced by a specific one for the **DYNSYS** system.

## OPERATING

### NORMAL OPERATION, WITHOUT OVERLOAD

**IMPORTANT !!! All safety pins must be in BLOCKED position**

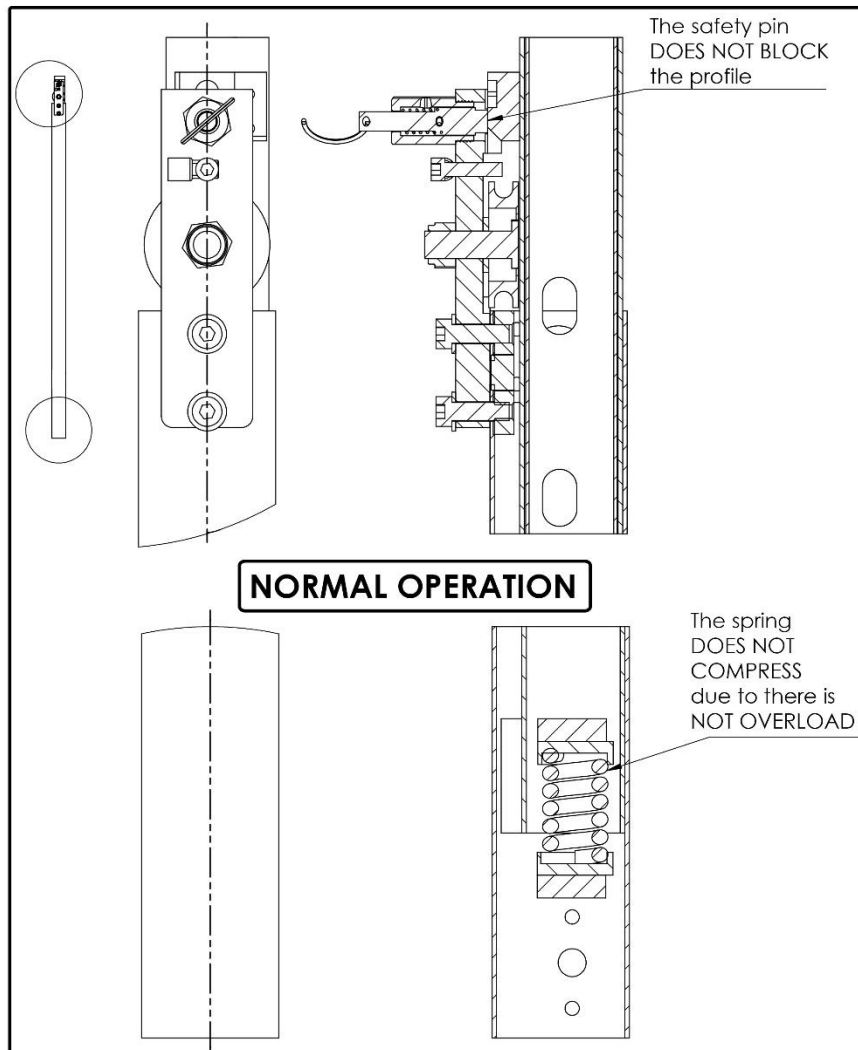


Figure 31

Under these conditions, the tower raises the coupled load and no extra-vertical displacement occurs in the profiles system. The inner spring (fixed in the backside of the most inner profile) does not compress and the safety pin does not act. The winch handle allows the user to raise or lower the load with ease.



## OPERATION WITH OVERLOAD

### IMPORTANT !!! All safety pins must be in **BLOCKED** position

In the event that the tower has to raise a load higher than the one marked in features, the tower would enter overload mode. Under these conditions, the following occurs:

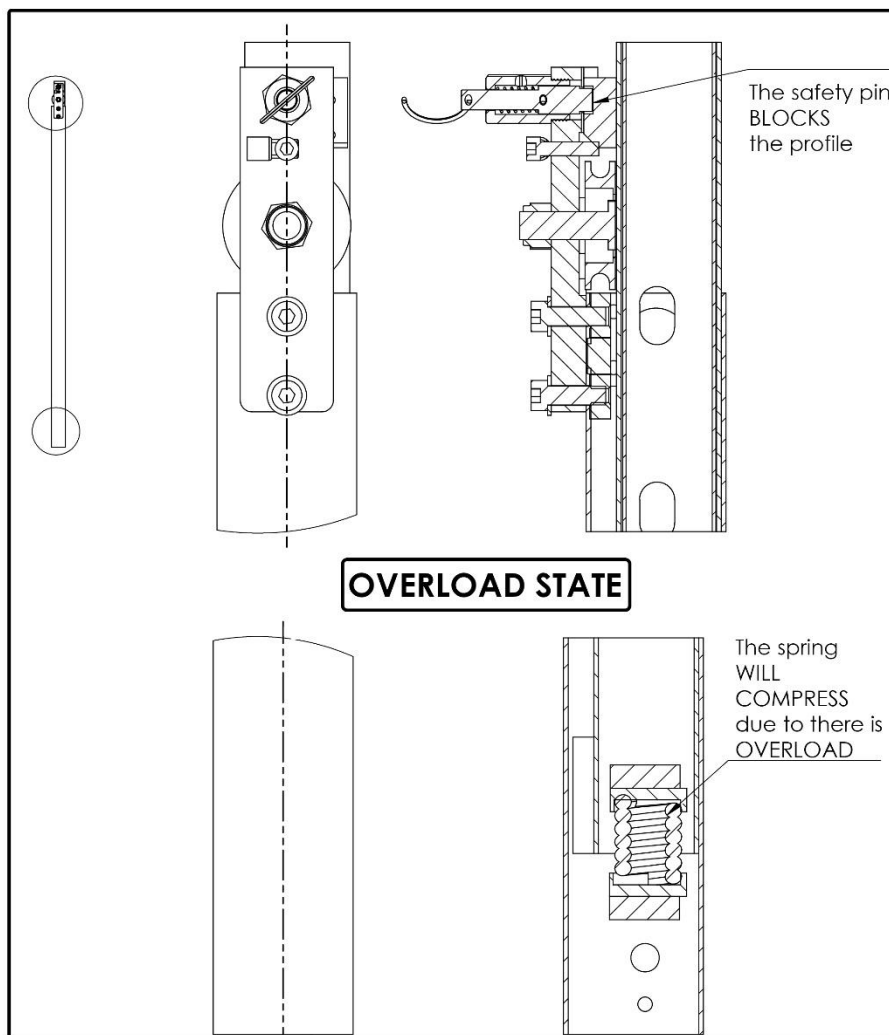


Figure 32

- There is a more pronounced vertical displacement in the profiles system.
- The most internal profile presses the spring and it shrinks due to this additional pressure.
- The safety pin is released from its resting position and entered in the hole found in the profile, blocking the tower and preventing any attempt to raise the load.
- In the same way, the own characteristics of the exclusive **DYNSYS** handle prevents to force the winch.

To get out of this state of overload, it is necessary to lower the load and adjust it to the weight supported by the tower.

To do this, pull the safety pin to release it and, keeping it, turn the hand winch handle to lower the load. Throughout this process, the spring will be relaxed by reducing the pressure exerted on it and the most inner profile will go back to the initial position. At the end of the descent of the load, you can release the safety pin that will remain in its resting position.

## TRANSPORT

To the transport of the towers:

- Verify that the stabilizers legs are securely fixed to the tower in the transport and they cannot be released.
- Check that all sections are locked.

With forklift

To transport the towers with a machine type forklift the AW 100 accessory is necessary. Follow the instructions of the machine operator transport manual. Take into account the height of what is transported. Avoid sudden turns and braking.

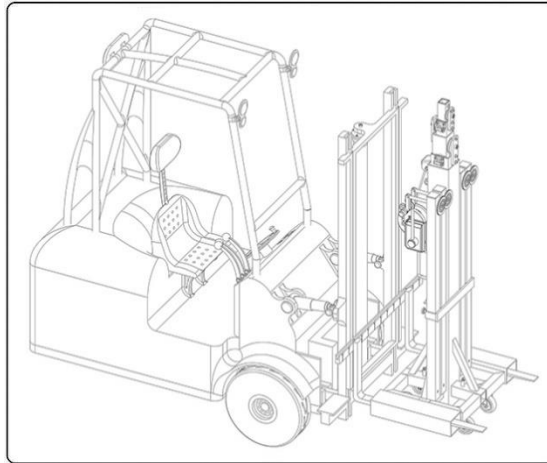


Figure 33

*Detail of transport with forklift.*

With truck or container.

To transport the tower by truck or container always tie the tower by two points. Use ratchets not less than 250 kg of force.

Place ratchets so that the tower cannot move by inertia in curves or sudden braking.

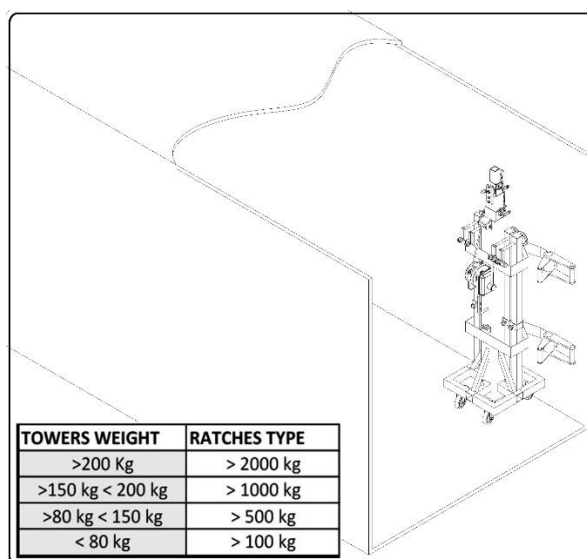


Figure 34

*Detail tower place and shape holding.*

## DGUV V17/18 REGULATION. Explanation

**DGUV V17/18** is a norm that regulates the stage and production elements in the entertainment industry. Lifting equipment and rigging are part of this norm and cover structures and other technical elements.

Adopt **DGUV V17/18** is totally voluntary (except in Germany) but its adoption is required by insurance companies and indeed is becoming a norm in the industry

The application of this norm on lifter towers is vital because, in theaters, stages, etc., are used to move loads above artists, technical staff, etc... and in some cases, above viewers, representing a potential risk of fall.

### **NORM DGUV V17/18. Fields of application**

This standard is oriented in two ways:

On the one hand, lifting towers adopt designs and materials in order to achieve a high degree of safety in quantities such as supported load, equilibrium, resistance to friction, etc.

Thus, the lifter towers **EQUIPSON DGUV V17/18** certified have passed strict controls during design, choice of materials or load checks and effort.

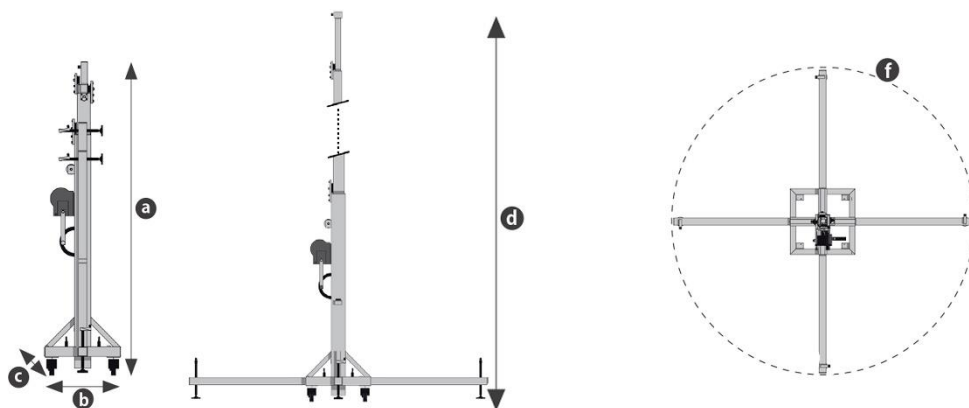
On the other hand, in order to achieve optimal performance with these units, it is recommended, and a responsible use of the unit, (meeting basic norms such as obey the maximum load or balance), periodic maintenance which it must be carried out by expert technicians, checking the condition of the steel cable and winch, the functioning of the security pins and the folding/unfolding of all sections.

All the above tests are only mandatory in those countries with specific regulations on the matter, applied through regulations or laws. As manufacturers, we recommend passing all tests in order to prevent damage and ensure proper operation of lift systems.

## SPECIFICATIONS

Model		LW142D	LW150D	LW155D	LW185D	LW265D	LW290D	LW330D
		LW142DY	LW150DY	LW155DY	LW185DY	LW265DY	LW290DY	LW330DY
Minimum Height (m)	<b>a</b>	1,59	1.9	1,72	1,72	1,80	1,84	1,29
(ft)		5,22	6,23	5,64	5,64	5,91	6,04	4,23
Base Folded Width (mm)	<b>b</b>	360	360	360	460	460	460	140
(ft)		1,18	1,18	1,18	1,51	1,51	1,51	0,46
Base Folded Length (mm)	<b>c</b>	360	360	360	460	460	460	140
(ft)		1,18	1,18	1,18	1,51	1,51	1,51	0,46
Maximum Height (m)	<b>d</b>	4,05	5	5,3	5,3	6,5	6,6	3,3
(ft)		13,29	16,40	17,39	17,39	21,33	21,65	10,83
Unfolded diameter (m)	<b>f</b>	1,88	2,06	2,06	2,06	2,52	2,58	1,64
(ft)		6,17	6,76	6,76	6,76	8,27	8,46	5,38
Minimum load capacity (Kg)		25	25	25	25	25	25	25
(Lb)		55,12	55,12	55,12	55,12	55,12	55,12	55,12
Max. load (Kg)		100	100	150	210	220	290	100
(Lb)		220,46	220,46	330,69	462,97	485,02	639,34	220,46
Net weight (Kg)		28,8	32,8	43,4	73,2	93,4	136,8	21
(Lb)		63,49	72,31	95,68	161,38	205,91	301,59	46,3
Winch (Kg)		450	450	350	500	500	900	450
(Lb)		992,08	992,08	771,62	1102,31	1102,31	1984,16	992,08
Noise emissions (dB)		70	70	70	72	72	75	68

Figure 35





## DECLARATION OF CONFORMITY

The tower lifters described complies with all the specific requirements of Directive 2006/42 / EC of the European Parliament and of the Council of 17 May 2006 on the Machinery Directive.

The tower lifters described meet all the specific requirements in DGUV V17/18

**Manufacturer:** EQUIPSON, S.A.

**Person responsible of the technical data:**

José Vila Ortiz

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46460 – Silla – Valencia (Spain)

**Description:**

Top load lifter

LW 142D /DY  
LW 150D /DY  
LW 155D /DY  
LW 185D /DY  
LW 265D /DY  
LW 290D /DY  
LW 330D

**MAX. LOAD:** 100 kg  
**MAX. LOAD:** 100 kg  
**MAX. LOAD:** 150 kg  
**MAX. LOAD:** 210 kg  
**MAX. LOAD:** 220 kg  
**MAX. LOAD:** 290 kg  
**MAX. LOAD:** 100 kg



A handwritten signature in blue ink, appearing to read "J. Vila Ortiz".

José Vila Ortiz, December 2017

# DGUV MARK

NUMERO DE SERIE:	SERIAL NUMBER:	LAUFENDE NUMMER:

Primer test en fábrica	First test in factory.	Erstprüfung im Werk.
Fecha/Date/Datum	Testado por/Tested by/Prüfer	

Examen a los cuatro años.	Four years test	UVV Prüfung (alle 4Jahre)
Fecha/Date/Datum	Testado por/Tested by/Prüfer	

Examen anual a partir  
del cuarto año.

Annual test after the fourth  
year.

UVV Jährlicher Test nach  
dem vierten Jahr.

Fecha/Date/Datum	Testado por/Tested by/Prüfer
Fecha/Date/Datum	Testado por/Tested by/Prüfer
Fecha/Date/Datum	Testado por/Tested by/Prüfer
Fecha/Date/Datum	Testado por/Tested by/Prüfer



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