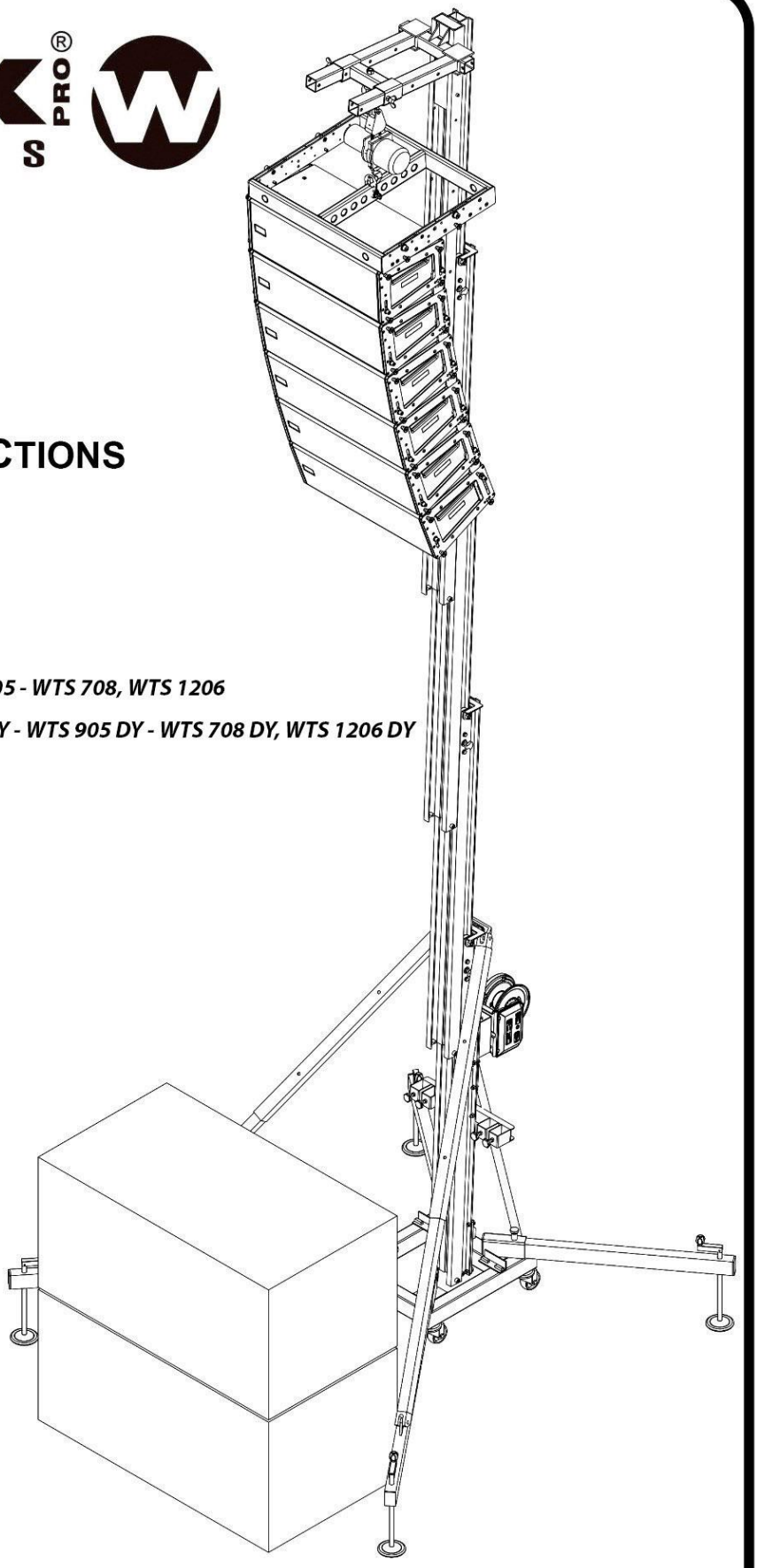
WORK PRO LIFTERS

LIFTING SYSTEMS

OPERATING INSTRUCTIONS



FOR MODELS:

WTS 256 - WTS 375 - WTS 506 - WTS 905 - WTS 708, WTS 1206

WTS 256 DY - WTS 375 DY - WTS 506 DY - WTS 905 DY - WTS 708 DY, WTS 1206 DY

DYNSYS

DYNAMIC OVERLAP

Version 1.1

EN

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.

CONTENT

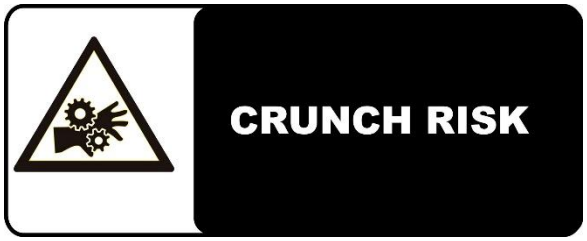
CONTACT

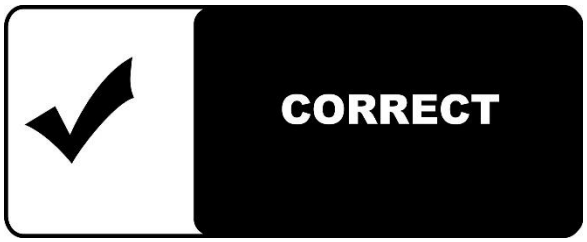
Website: www.worklifters.com

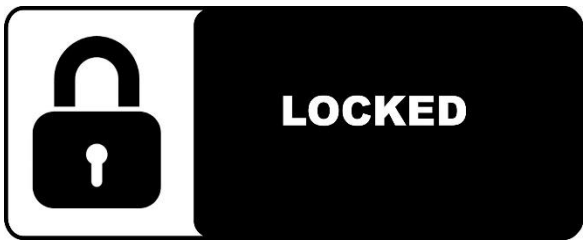
E-mail: support@equipson.es

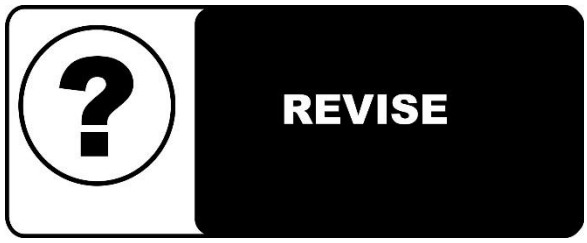
ILLUSTRATION INDEX

WARNING ICONS









ADDITIONAL DOCUMENTS

Follows this link to download the maintenance user manual for WTS series.

WTS_Series_MAINTENANCE

Or visit www.worklifters.com

RULES AND SAFETY USE

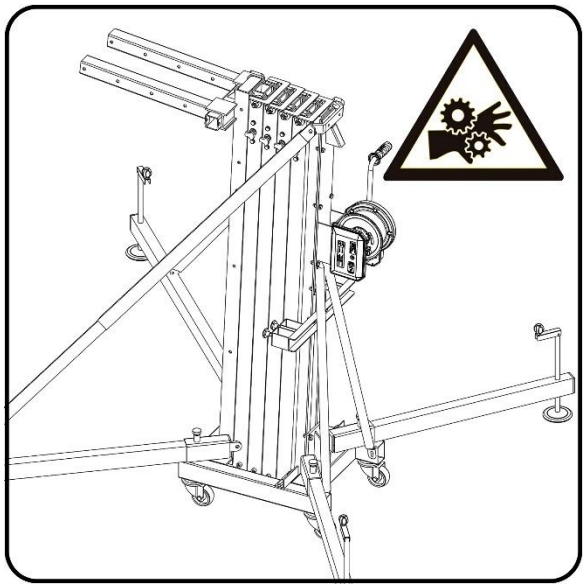


Figure 1

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

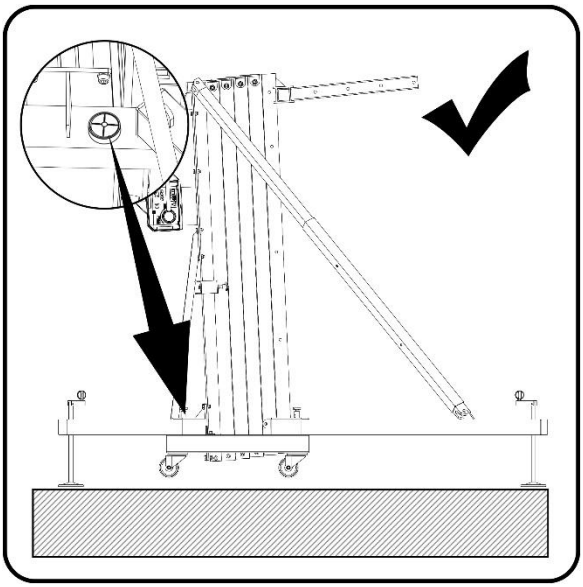


Figure 3

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.

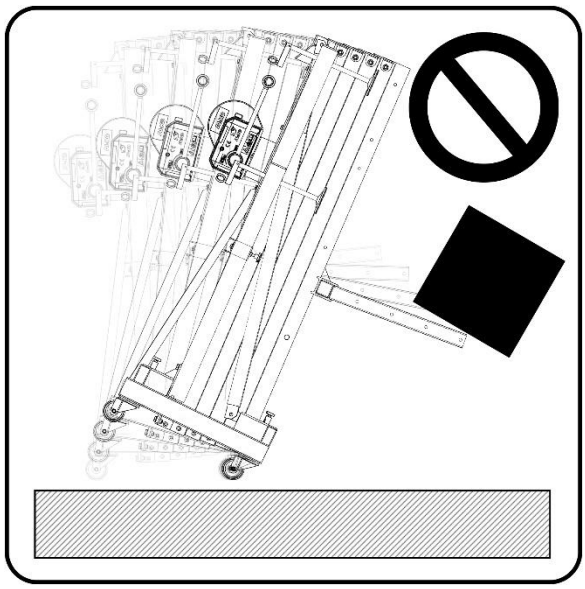


Figure 2

Not charge the tower without the stabilizer legs.

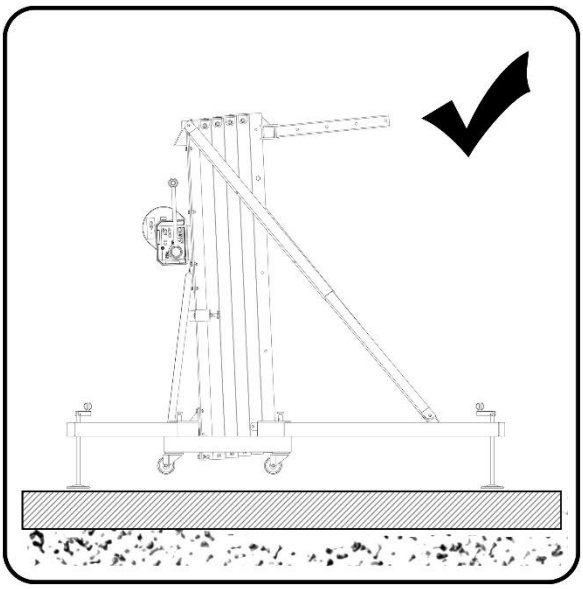


Figure 4

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.

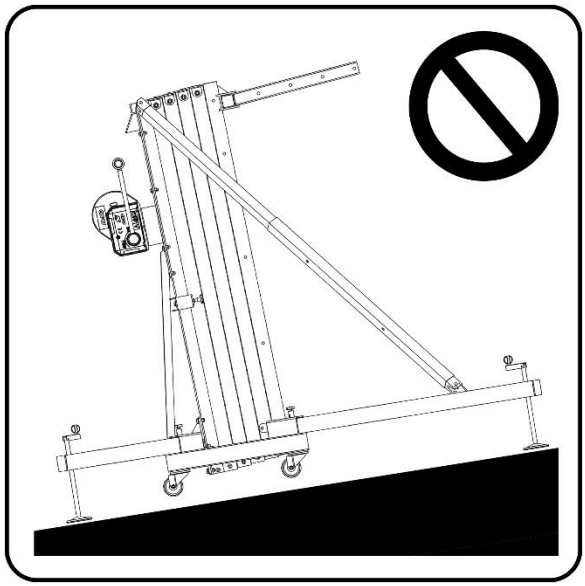


Figure 5

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

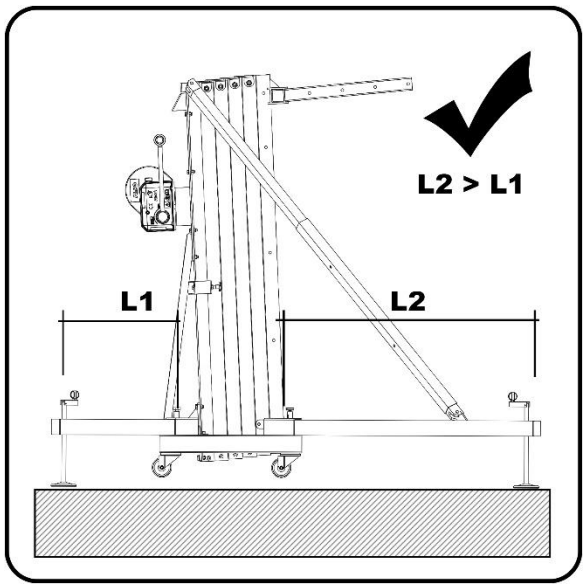


Figure 6

Mount the longest stabilizer legs in the part of the horns. Safety pins must lock the stabilizers.

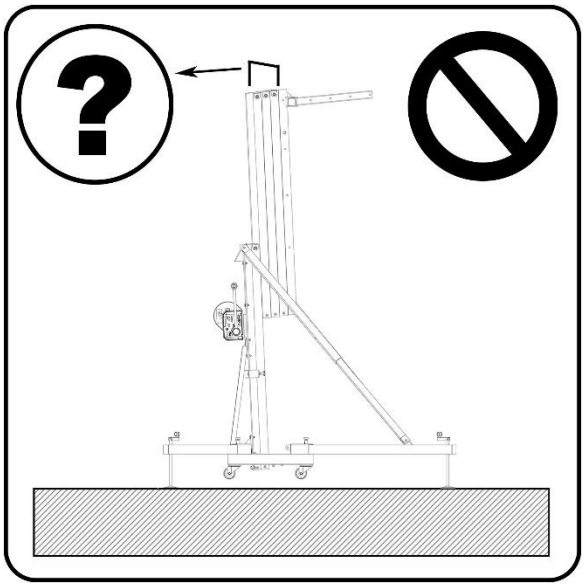


Figure 7

Lift the mast in the correct order.

Lift the mast of the tower starting always with the carriage. The last mast lifted must be the next to the section where the winch is placed.

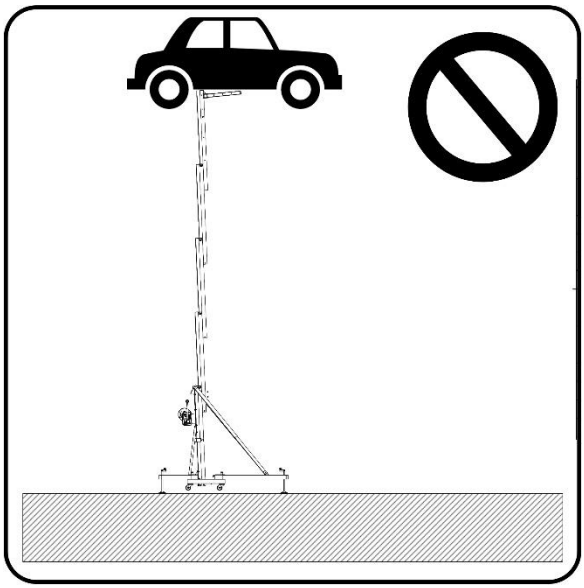


Figure 8

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

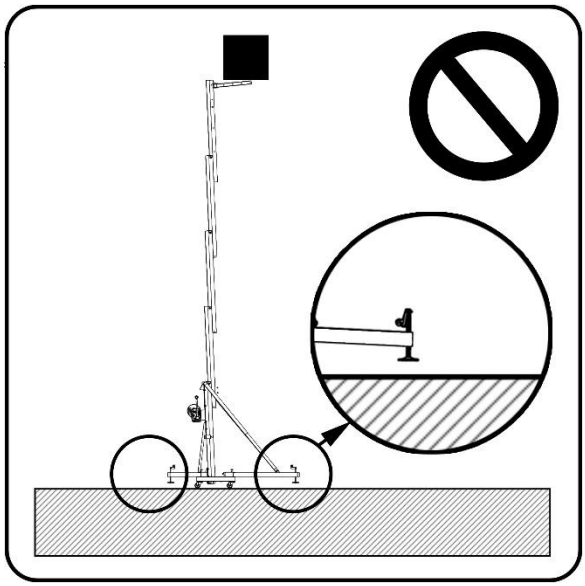


Figure 9

Never move a load without leveling the tower before.

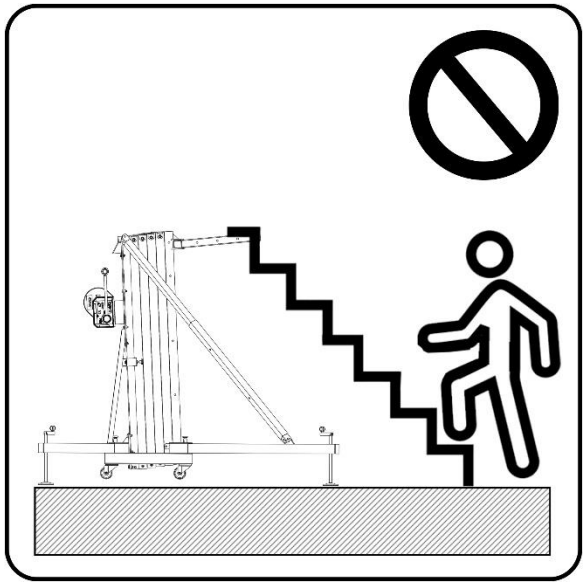


Figure 10

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

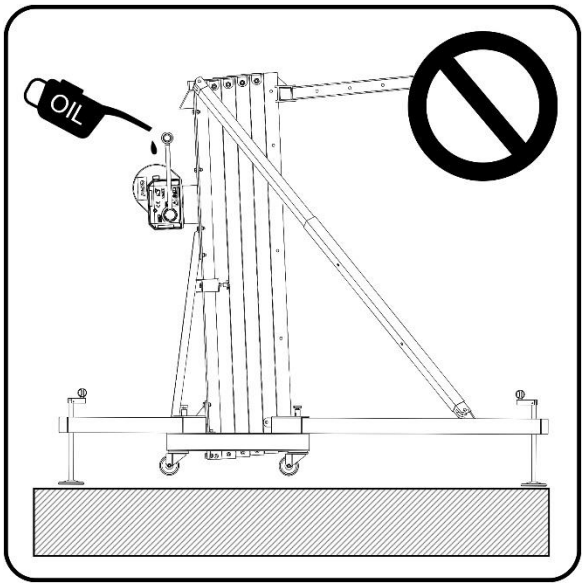


Figure 11

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

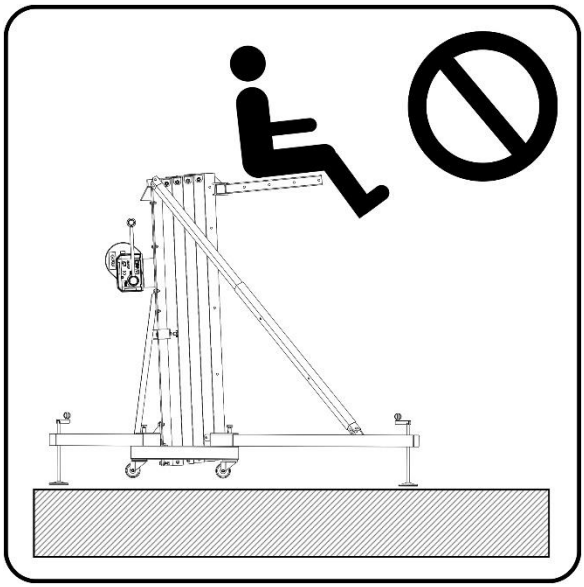


Figure 12

Not allowed to lift people or animals.

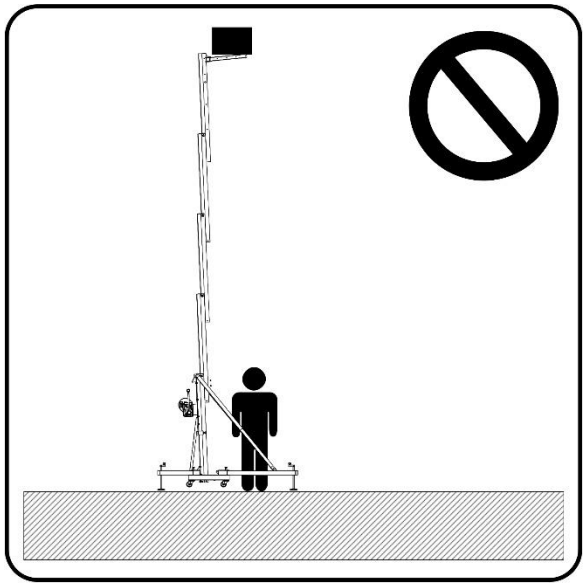


Figure 13

Do not stand under the load. The load must be secured to the tower in order to prevent that it cannot fall down.

Figure 14

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

Figure 15

Not use the tower as welding mass.

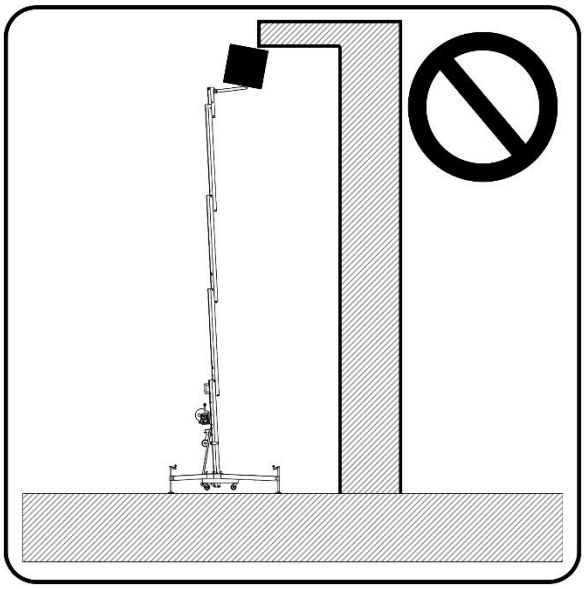


Figure 16

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

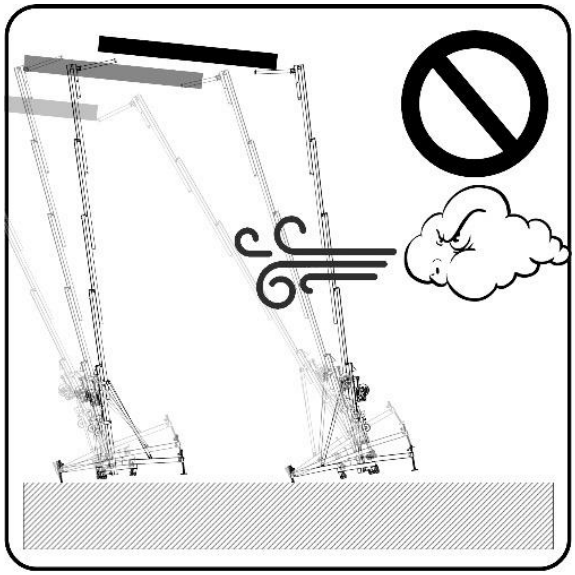


Figure 17

The tower can be used outdoor, **only in structural mode but with the loads corresponding to mechanism mode (for security purposes),** if the wind speed is low and if it doesn't put the installation at risk. The installation is always under the responsibility of the owner.

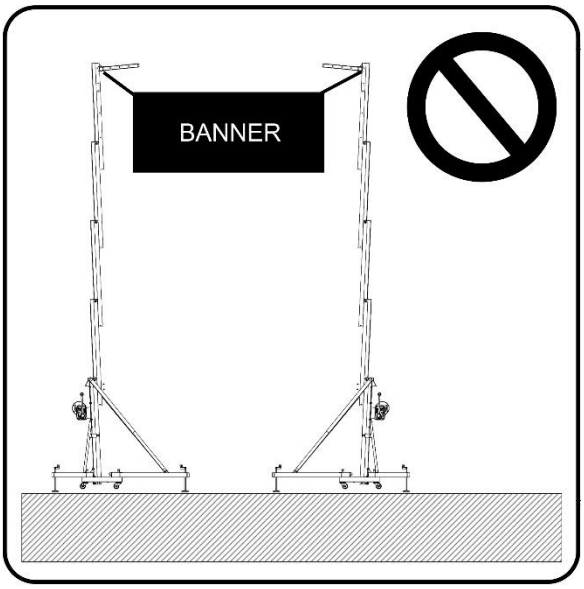


Figure 18

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.

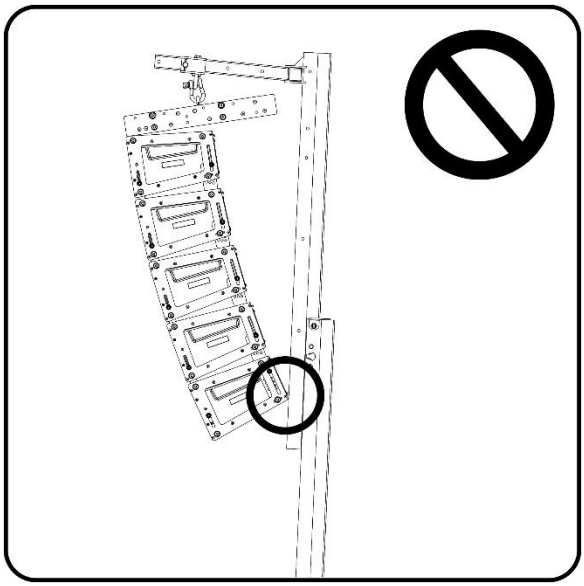


Figure 19

Prevent that the load do not touch the tower

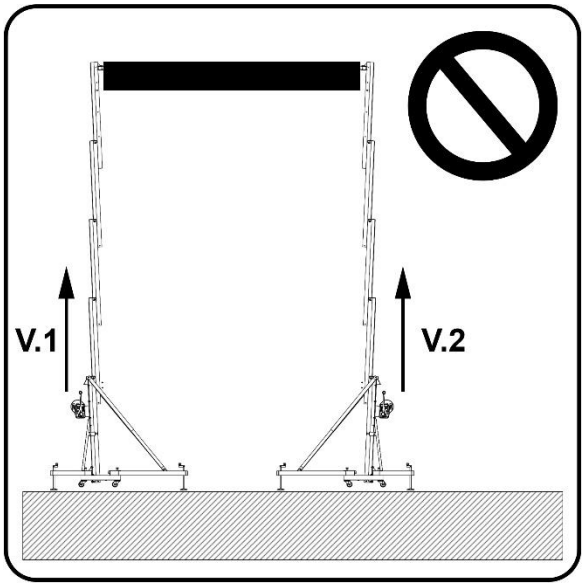


Figure 20

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

V1 ≠ V2 No lift

V1 = V2 Ok

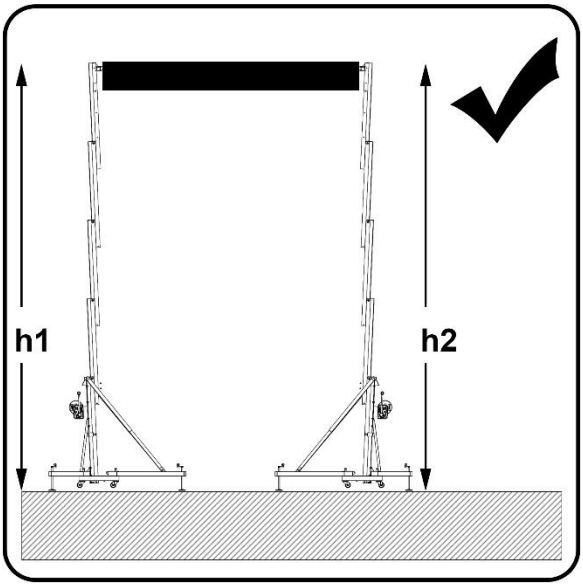


Figure 21

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

Always h1 = h2

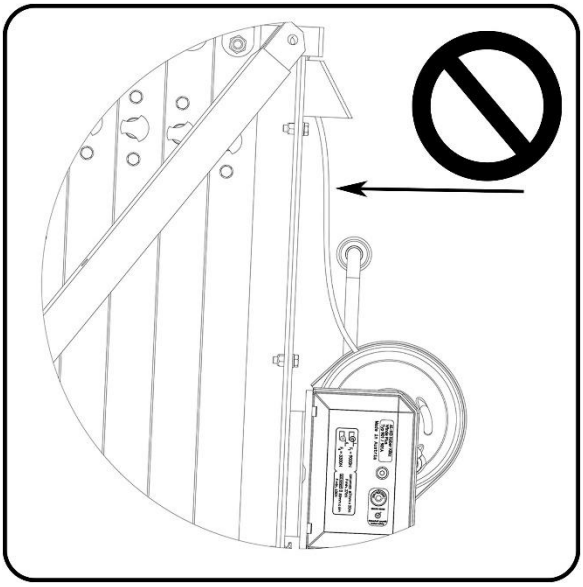


Figure 22

Under no circumstances should the tower be descended if the cable does not have sufficient tense. The cable should **ALWAYS** be tensioned in order to release the safety systems.

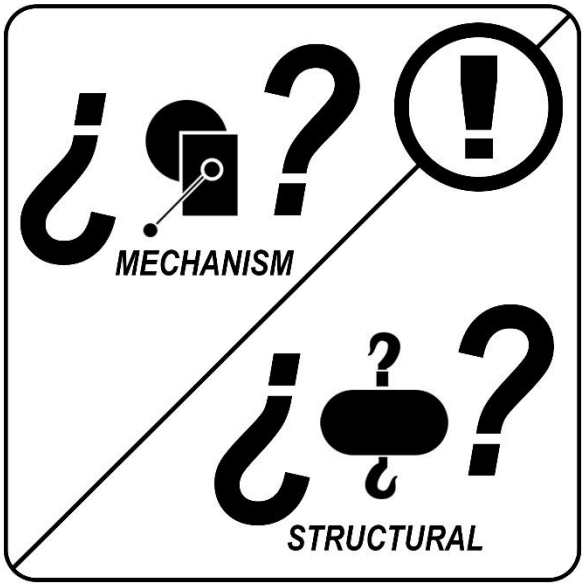


Figure 23

Never use structural loads in mechanism mode. It can result in a dangerous use and can break internal parts of the tower.

PARTS IDENTIFICATION

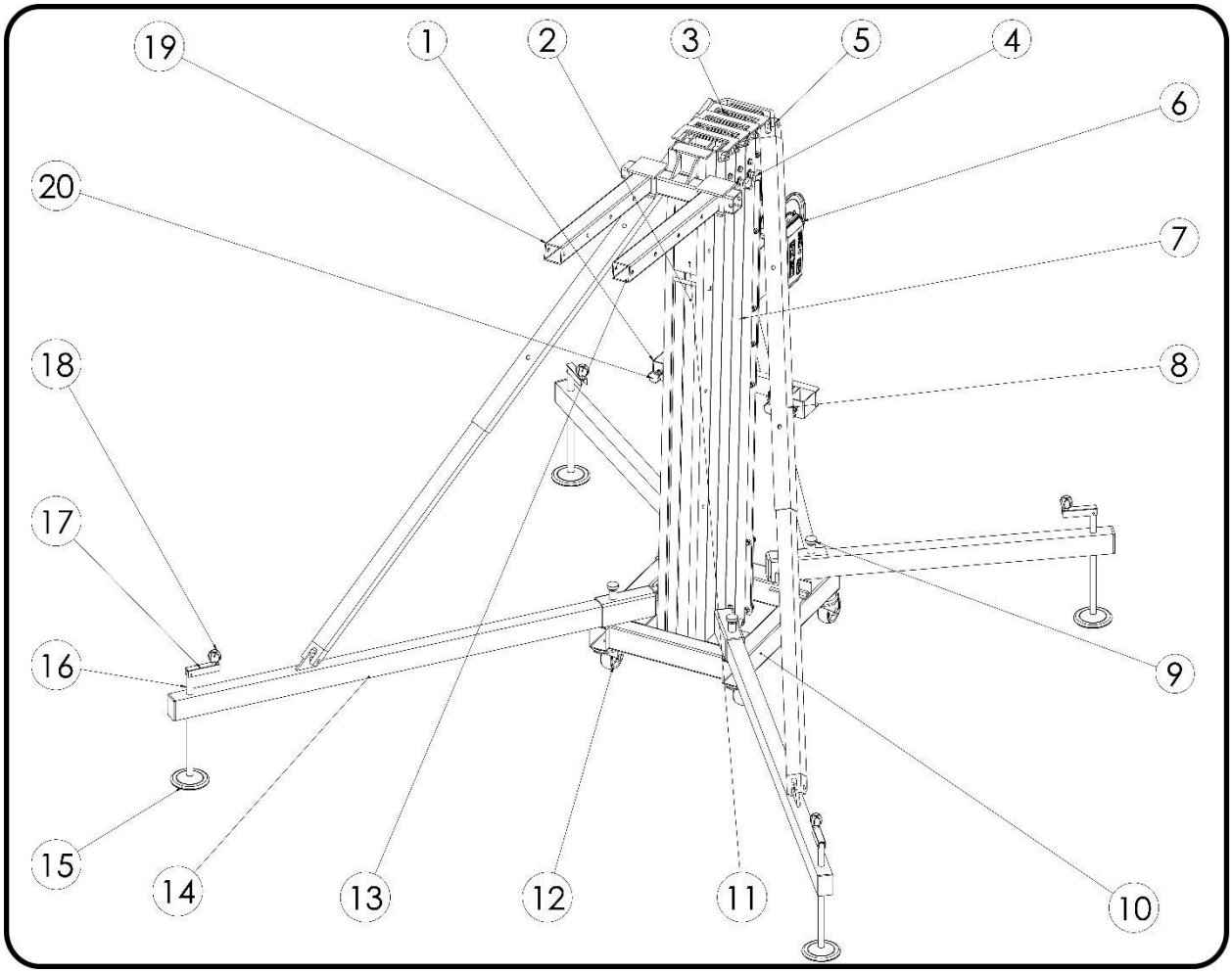


Figure 24.

1	Support stabilizer legs carrier	11	Steel carrier
2	Steel cable	12	Base wheel
3	Top boost reinforcement	13	Pin horn
4	Red knob mast security system	14	Frontal leg
5	Strut reinforcement mast support	15	Steel carrier
6	Winch	16	Leveler screw
7	Tower mast	17	Leveler brace
8	Steel reinforcement strut	18	Leveler knob
9	Red knob base security system	19	Forks
10	Tower base	20	Leg carrier knob

OPERATING MODES

MECHANISM MODE

This mode involves lifting the load with the help of the winch. That is, the load is placed in the tower once leveled and placed with all its masts in transport position. Then, the load is raised by using the included hand winch.

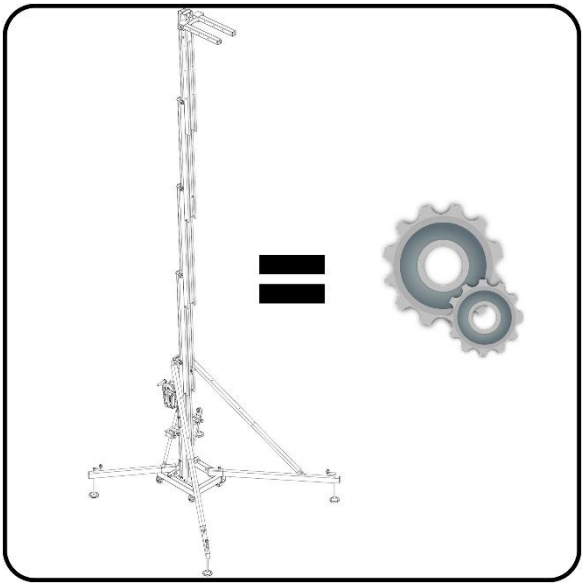


Figure 25

STRUCTURAL MODE

This mode involves lifting the load with the help of a manual or electric hoist. That is, the tower is used as a structure that is all locked to the required working height. Once the tower is raised to this desired height, the load must be raised with the hoist.

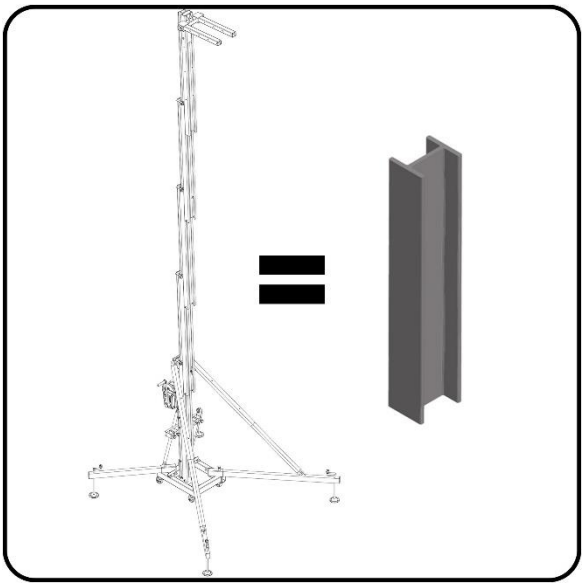


Figure 26

HOW TO USE STEP BY STEP

LINE ARRAY ELEVATION IN MECHANISM MODE

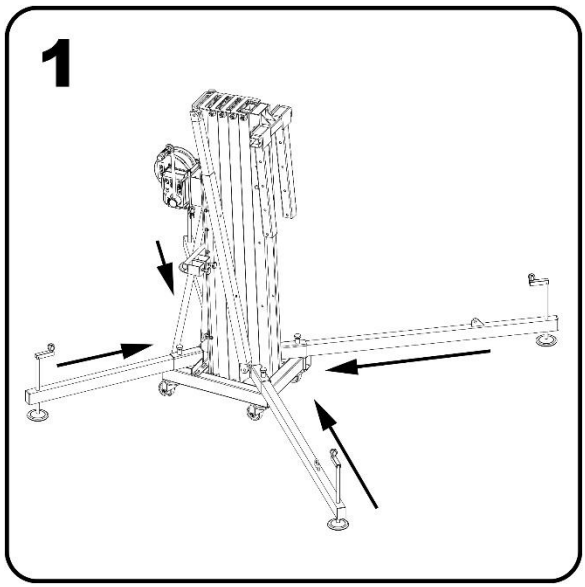


Figure 27

Fix and secure the stabilizer legs to the base.

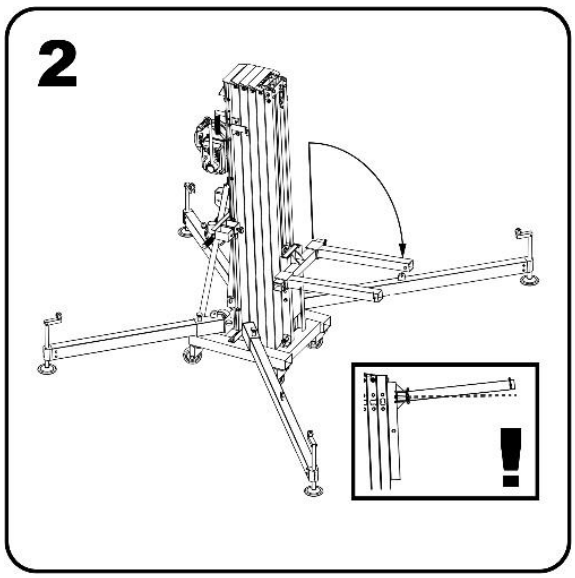


Figure 28

Turn the forks and adjust to the desired width. Ensure it with the pins.

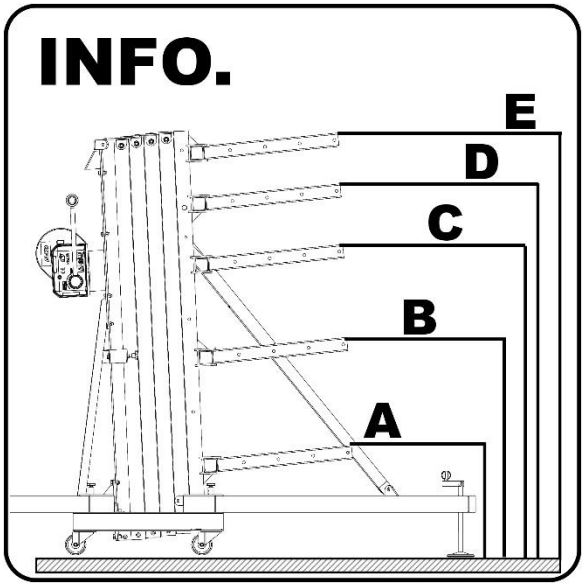


Figure 29

WTS towers have the option of changing the position of the carriage. Therefore, depending on the use, the load can be raised from different heights. The carriage can be rotated to obtain the required height.

WTS	A	B	C	D	E
256	435	695	1105	1315	1505
375	435	695	1105	1315	1505

Dimensions in mm.

Figure 30

WTS	A	B	C	D	E
256	17,13	27,36	43,5	51,77	59,25
375	17,13	27,36	43,5	51,77	59,25

Dimensions in inches.

Figure 31

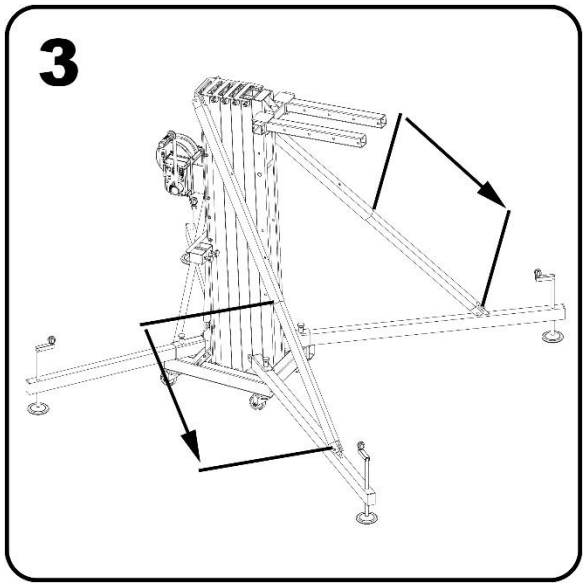


Figure 32

Place the reinforcement bars and fix them with its pins to the frontal legs.

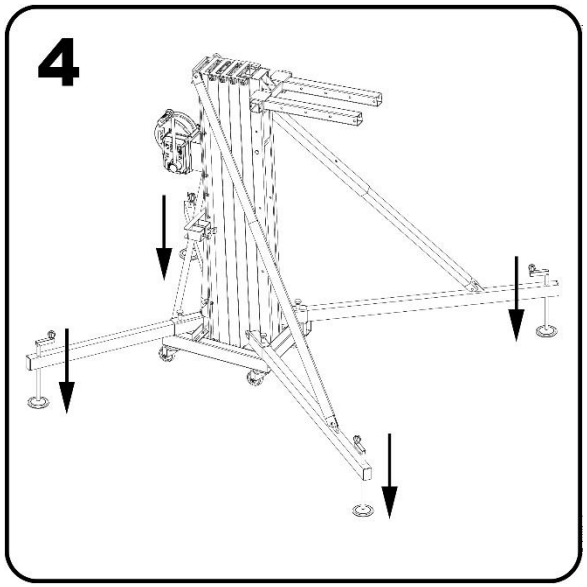


Figure 33

Place the tower in its working position and level until the bubble level is centered. Wheels should not get in contact with the ground.

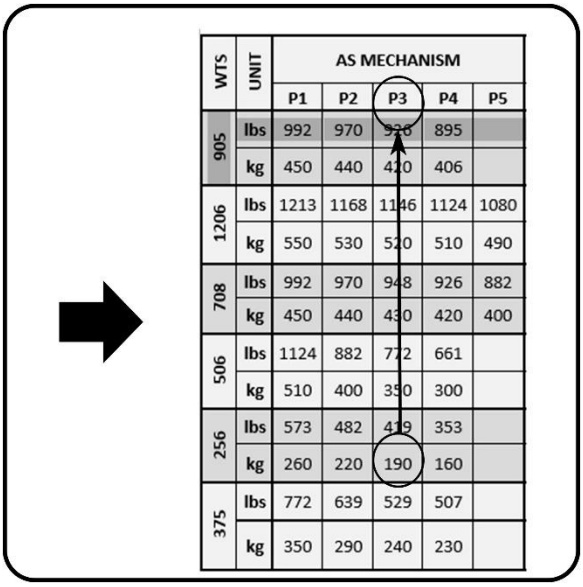
Calculate the load to be lifted with the tower. An example of basic load calculation is attached.

ITEM	WEIGHT (kg)	QUANTITY	TOTAL (kg)
Line array accessory	5,5	1	5,5
Bumper	35	1	35
Loudspeakers	28	4	112
Cables	20	1	20
			172,5

Figure 34

In this example we have obtained a weight of 172,5 kg.

With that load, see what position the load should have on the forks of the tower. Take into account that the inclination of the loudspeakers and the bumper should not lean against any part of the tower.



WTS	UNIT	AS MECHANISM				
		P1	P2	P3	P4	P5
905	lbs	992	970	920	895	
	kg	450	440	420	406	
1206	lbs	1213	1168	1146	1124	1080
	kg	550	530	520	510	490
708	lbs	992	970	948	926	882
	kg	450	440	430	420	400
506	lbs	1124	882	772	661	
	kg	510	400	350	300	
256	lbs	573	482	419	353	
	kg	260	220	190	160	
375	lbs	772	639	529	507	
	kg	350	290	240	230	

Figure 35

Choose the WTS tower model. Check for the value immediately above the load you need. With this value, take the farthest position to which the accessory for flying must be placed. It is recommended that this position is always as close to the carriage as possible.

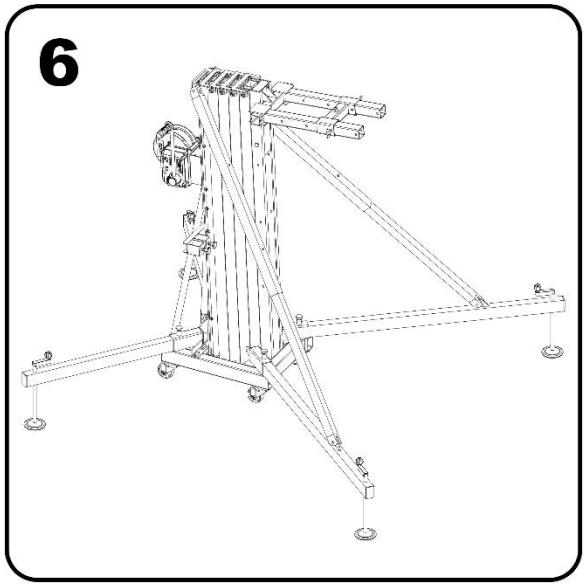


Figure 36

Place the accessory in the calculated position. Block it making sure that the screws are inserted into the hole of the fork position.

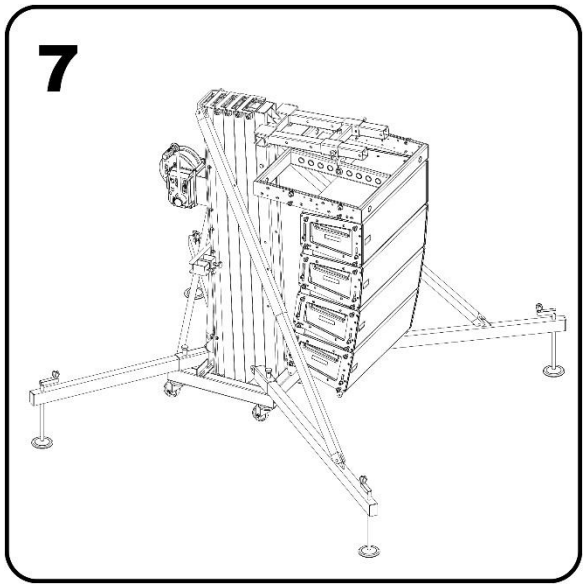


Figure 37

Join the line array equipment to the tower.

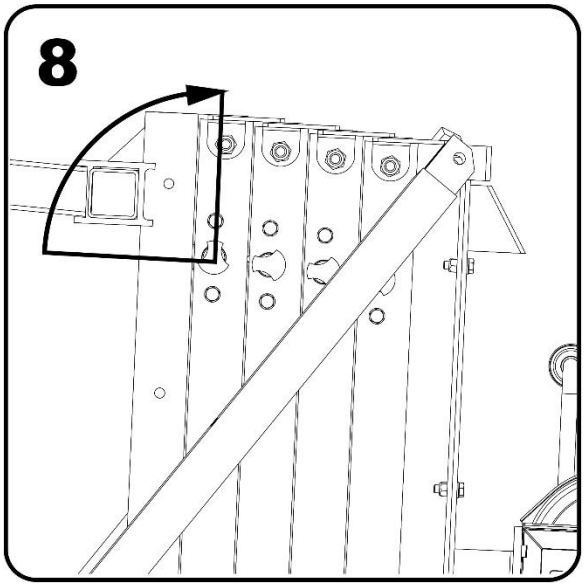


Figure 38

Unlock the mast safety system. Operate the winch handle to raise the load.

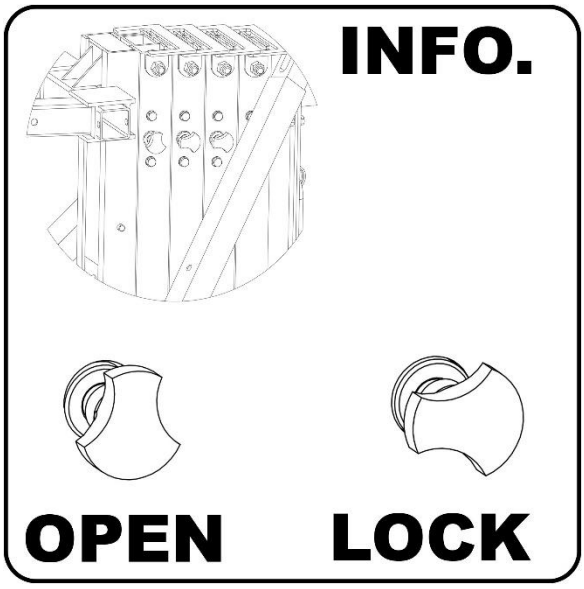


Figure 39

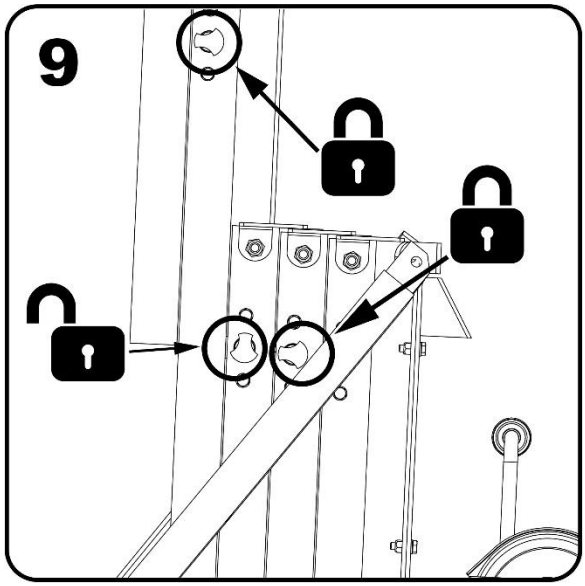


Figure 40

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.

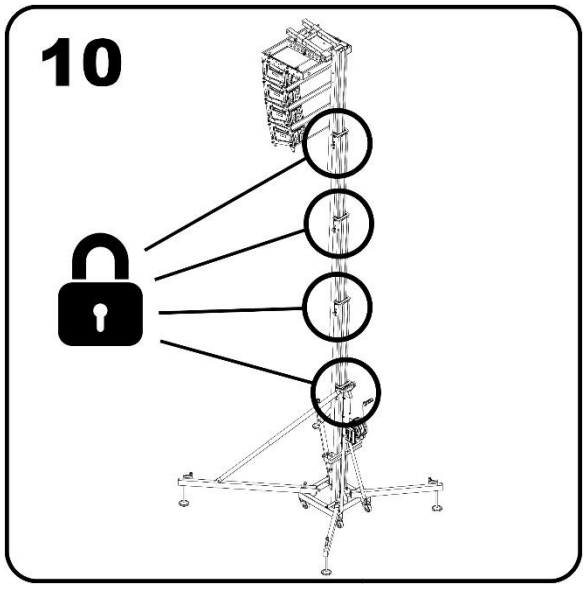


Figure 41

All security systems must be in locked position. Slack the cable of the winch so that the system can stabilize correctly.

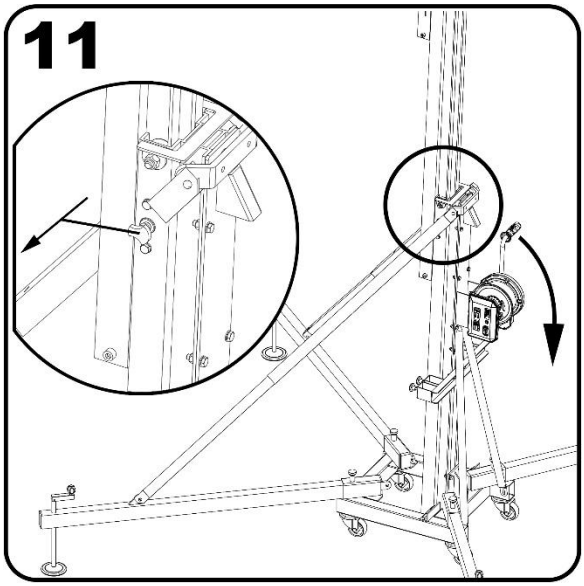


Figure 42

To descend the load: **Tense the cable and unlock the first security system**. Turn the winch while keeping the safety system unlocked with your other hand. If the safety system is not operated with one hand, the tower will lower until it is locked.

WARNING! If the tower is attempted to go down without tension in the cable and any of the safety systems are activated, a dangerous situation will occur because the load will descend very abruptly, being able to destabilize the whole installation and incurring in a serious accident.

Once the load is descended, block all sections and follow steps 4 to 1 (in that order).

LINE ARRAY ELEVATION IN STRUCTURAL MODE

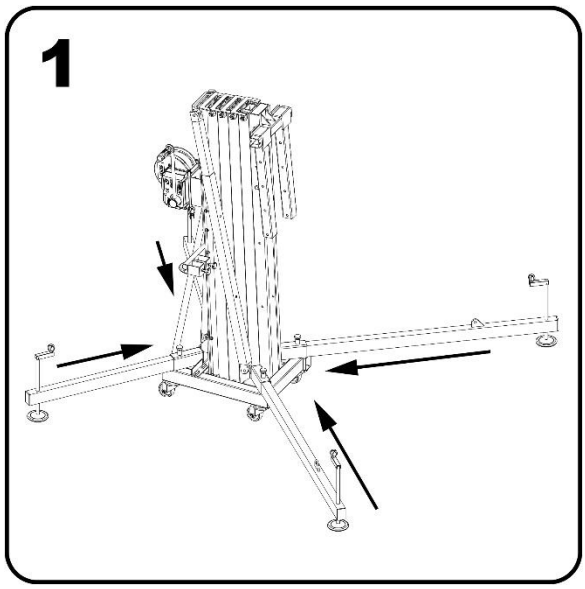


Figure 43

Fix and secure the stabilizer legs to the base.

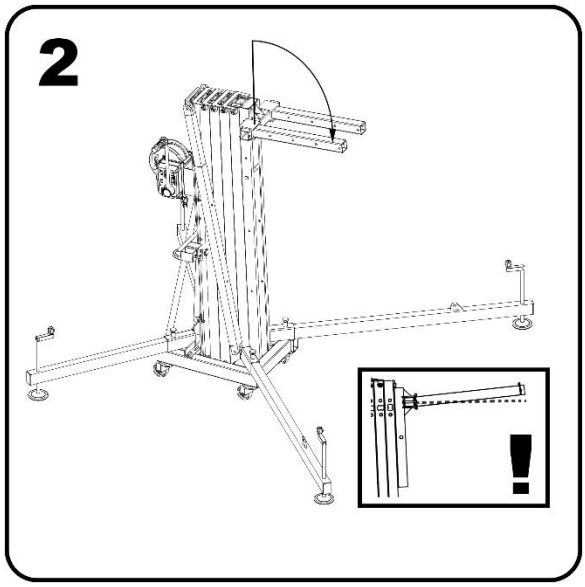


Figure 44

Turn the forks and adjust to the desired width. Ensure it with the pins.

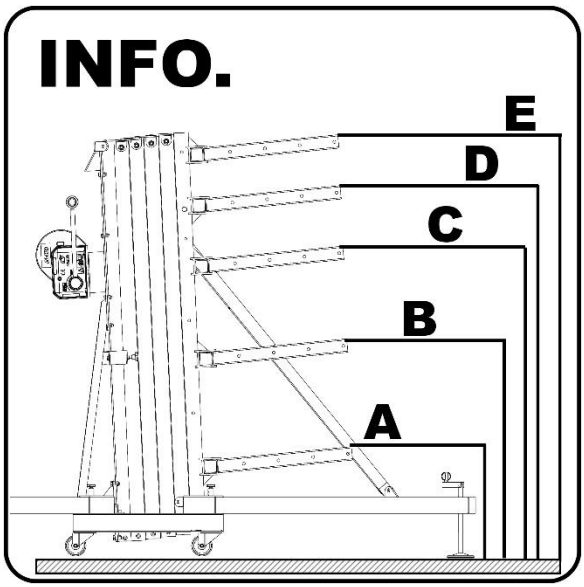


Figure 45

WTS towers have the option of changing the position of the carriage. Therefore, depending on the use, the load can be raised from different heights. The carriage can be rotated to obtain the required height.

WTS	A	B	C	D	E
256	435	695	1105	1315	1505
375	435	695	1105	1315	1505

Dimensions in mm.

Figure 46

WTS	A	B	C	D	E
256	17,13	27,36	43,5	51,77	59,25
375	17,13	27,36	43,5	51,77	59,25

Dimensions in inches.

Figure 47

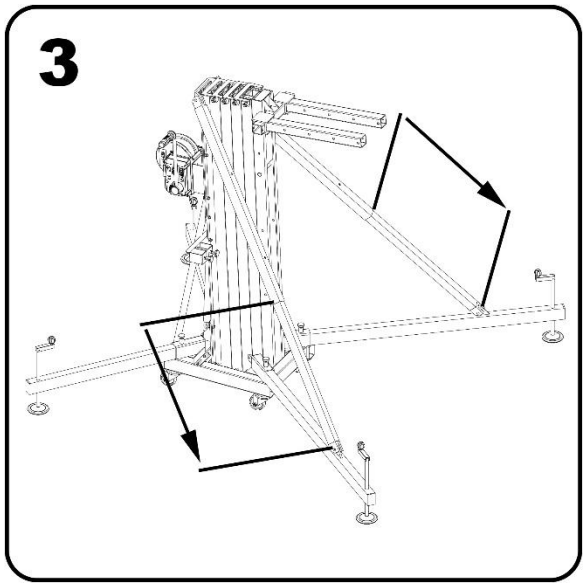


Figure 48

Place the reinforcement bars and fix them with its pins to the frontal legs.

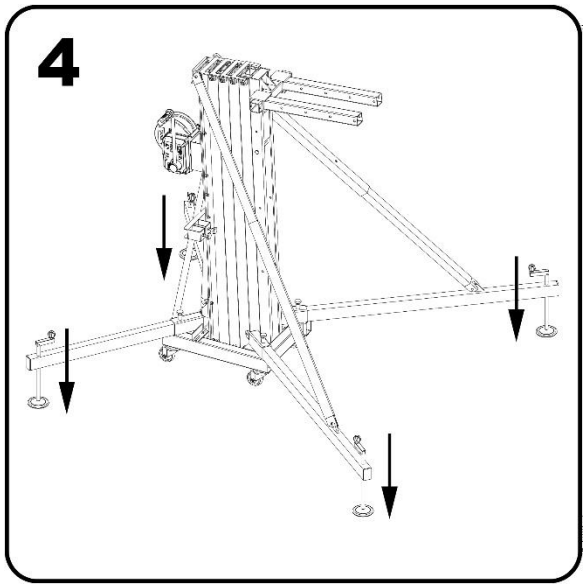


Figure 49

Place the tower in its working position and level until the bubble level is centered. Wheels should not get in contact with the ground

Calculate the load to be lifted with the tower. An example of basic load calculation is attached.

ITEM	WEIGHT (kg)	QUANTITY	TOTAL (kg)
Line array accessory	5,5	1	5,5
Bumper	35	1	35
Loudspeakers	28	6	168
Cables	30	1	30
			238,5

Figure 50

In this example we have obtained a weight of 238,5 kg.

With that load, see what position the load should have on the forks of the tower. Take into account that the inclination of the loudspeakers and the bumper should not lean against any part of the tower.

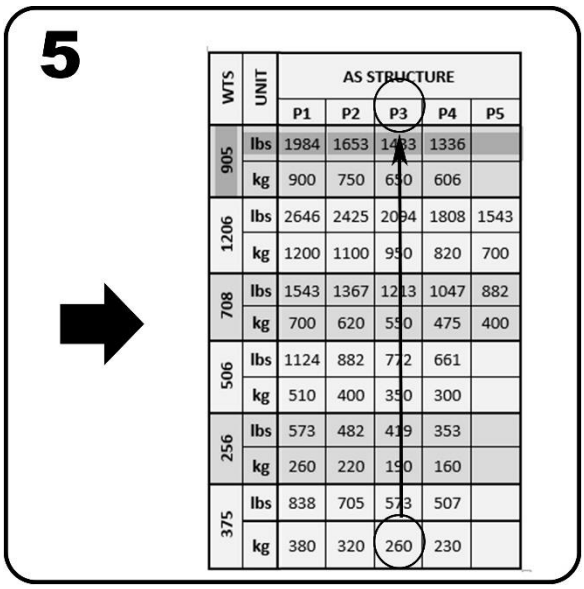


Figure 51

Choose the WTS tower model. Check for the value immediately above the load you need. With this value, take the exact position to which the accessory for flying must be placed.

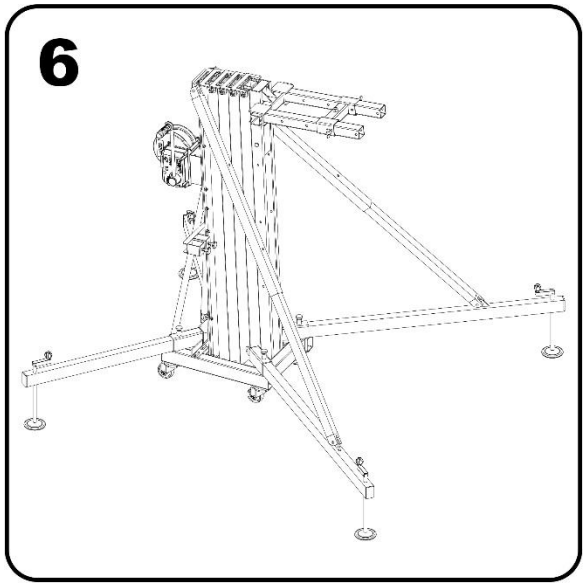


Figure 52

Place the accessory in the calculated position.

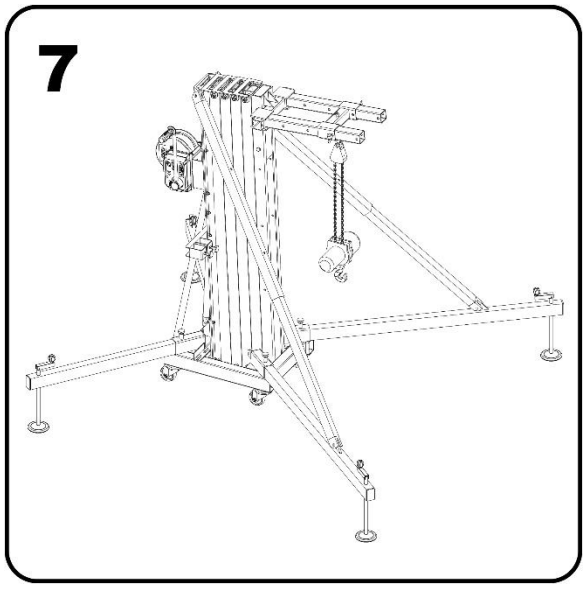


Figure 53

Hung the hoist on the tower support. The hoist must have a path equal to or greater than the maximum height of the tower.

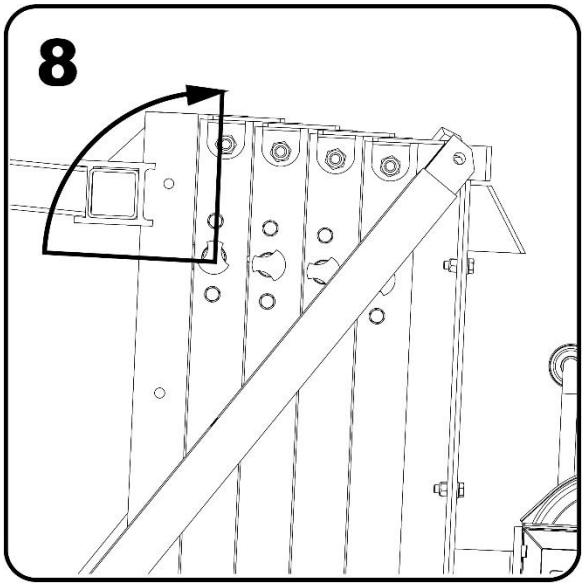


Figure 54

Unlock the mast safety system. Operate the handle of the winch to raise the load.

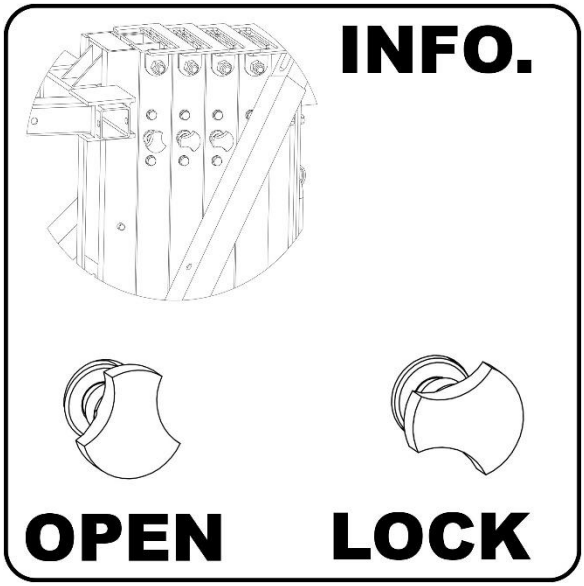


Figure 55

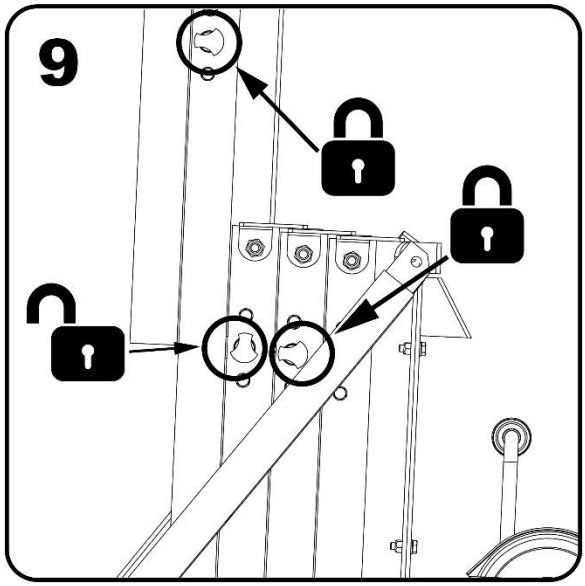


Figure 56

When the section reaches its end of path, lock with the safety system and unlock the next safety system to raise the next mast. Perform the same operation until you reach the required height.

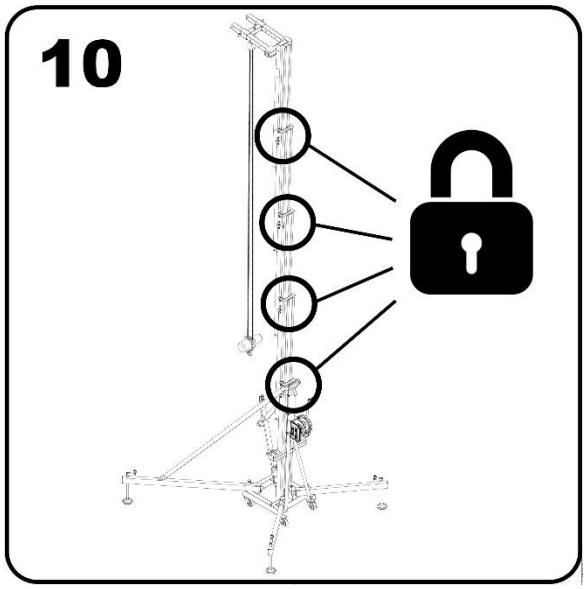


Figure 57

All security systems must be in locked position. Slacken the cable of the winch so that the system can stabilize correctly.

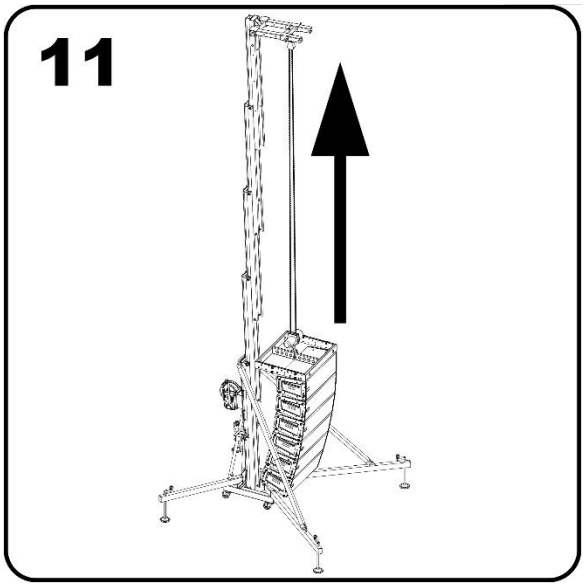


Figure 58

Raise the load with the hoist to the required height.

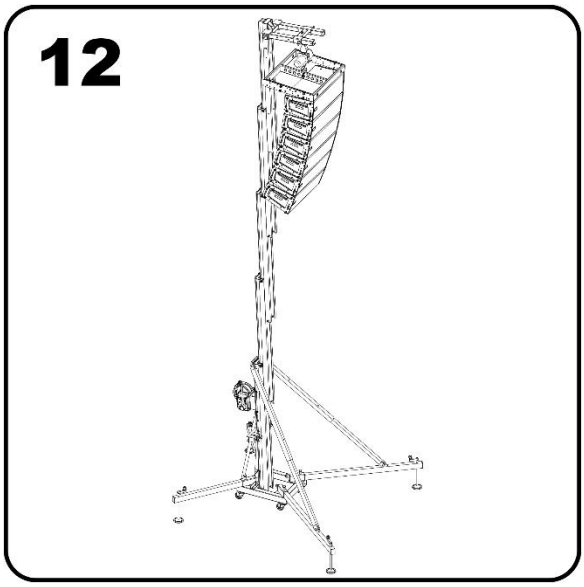


Figure 59

Take into account the space of the hoist. This dimension causes that the maximum height of the tower to be reduced.

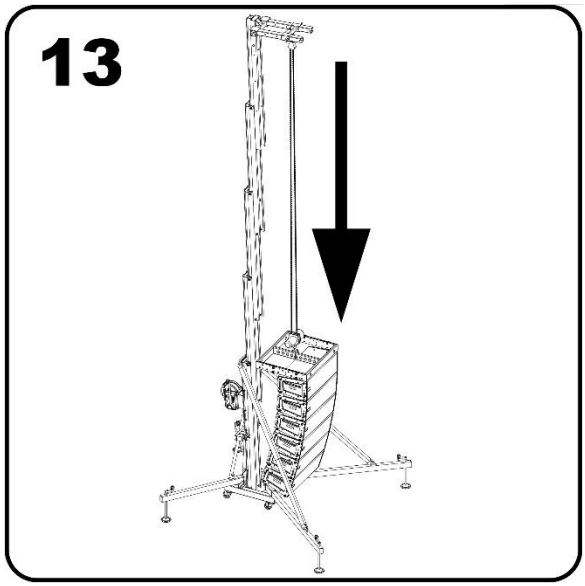


Figure 60

To descend the load: Descend the load with the hoist until it is just above the ground. **The load should never be descended with the tower winch**.

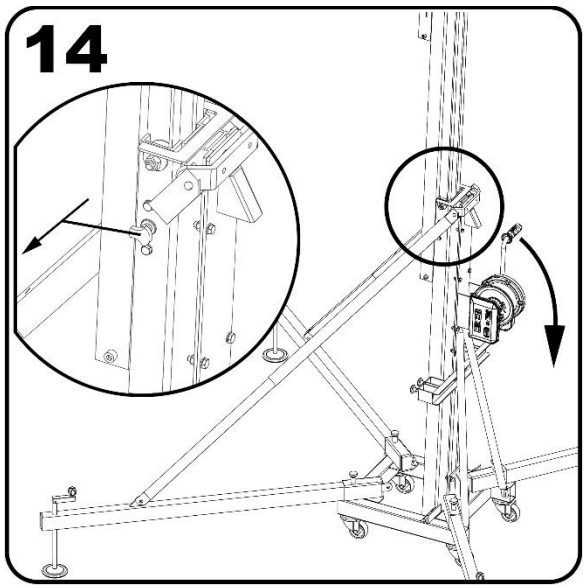


Figure 61

To descend the tower: **Tense the cable and unlock the first security system**. Turn the winch while keeping the safety system unlocked with your other hand. If the safety system is not operated with one hand, the tower will descend until it is locked.

WARNING! If the tower is attempted to go down without tension in the cable and any of the safety systems are activated, a dangerous situation will occur because the load will descend very abruptly, being able to destabilize the whole installation and incurring in a serious accident.

Once the load is descended, block all sections and follow steps 4 to 1 (in that order).

TRUSS SYSTEM ELEVATION IN MECHANISM MODE

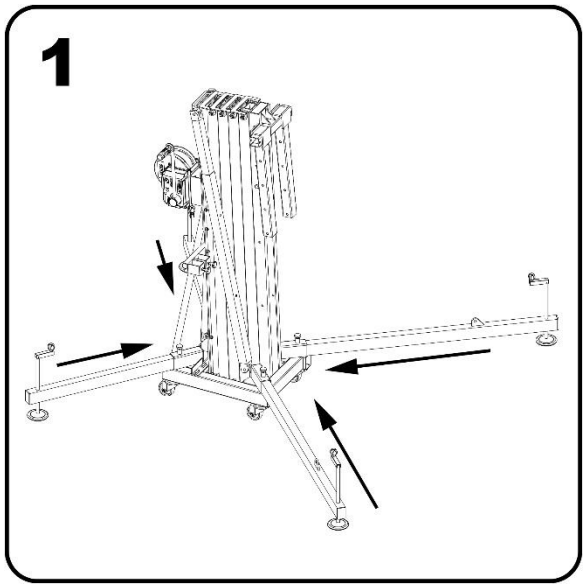


Figure 62

Fix and secure the stabilizer legs to the base.

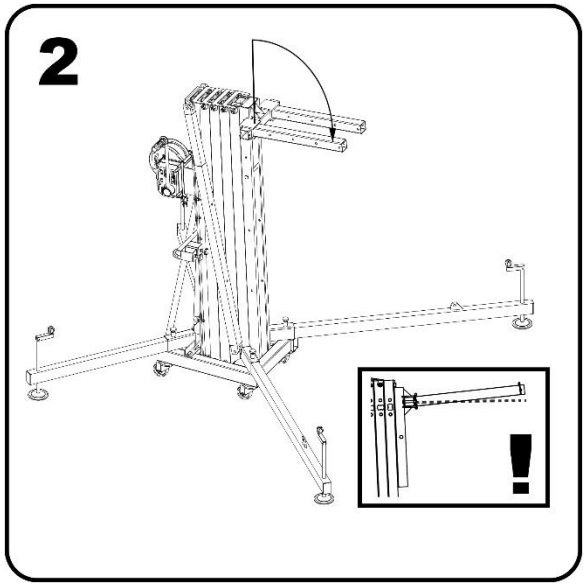


Figure 63

Turn the forks and adjust to the desired width. Ensure it with the pins.

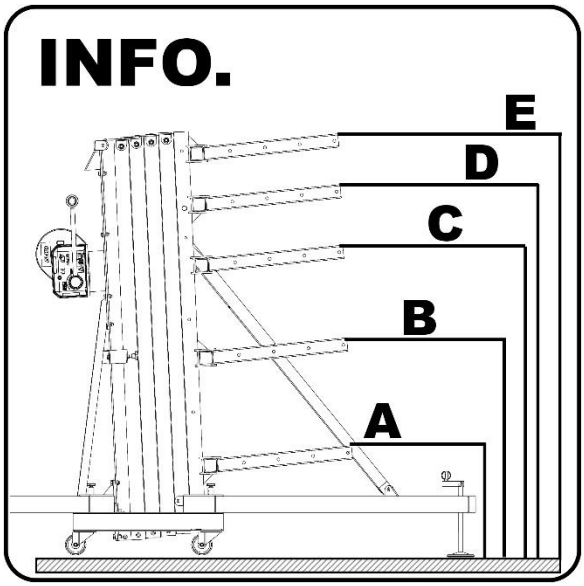


Figure 64

WTS towers have the option to change the position of the carriage. Therefore, depending on the use, the load can be raised from different heights. The carriage can be rotated to obtain the required height.

WTS	A	B	C	D	E
256	435	695	1105	1315	1505
375	435	695	1105	1315	1505

Dimensions in mm.

Figure 65

WTS	A	B	C	D	E
256	17,13	27,36	43,5	51,77	59,25
375	17,13	27,36	43,5	51,77	59,25

Dimensions in inches.

Figure 66

In case of using the tower in its positions A and B: Raise the load until reaching the position C and then follow steps from 3 onwards.

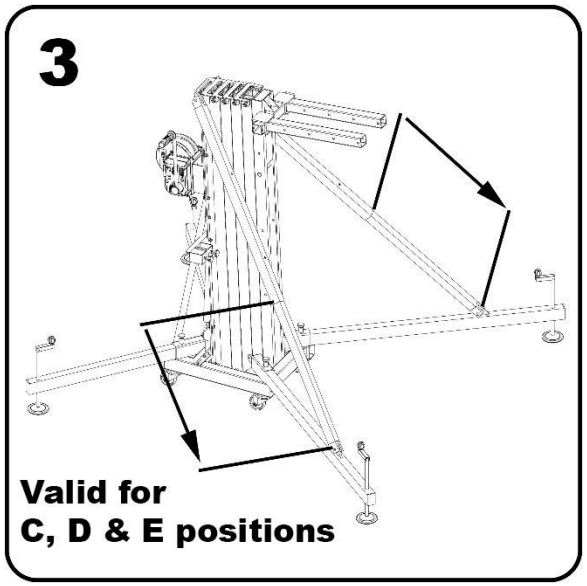


Figure 67

Place the reinforcement bars and fix them with its pins to frontal legs.

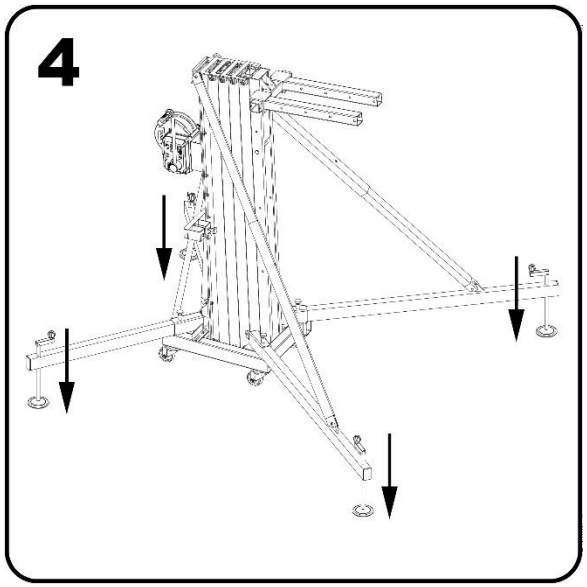


Figure 68

Place the tower in its working position and level until the bubble level is centered. Wheels should not get in contact with the ground

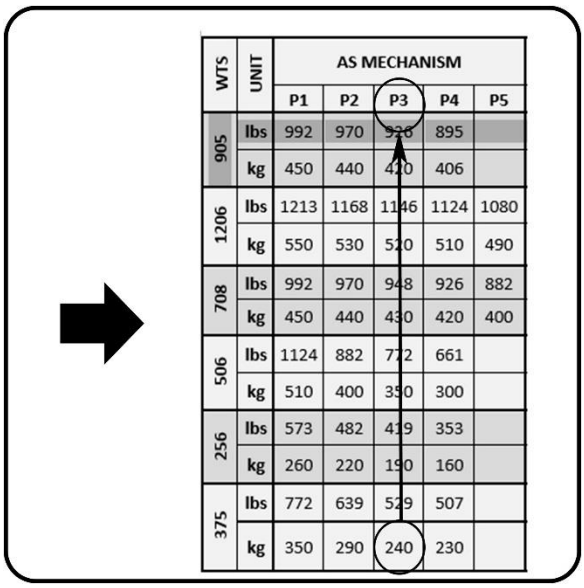
Calculate the load to be lifted with the tower. An example of basic load calculation is attached.

ITEM	WEIGHT (kg)	QUANTITY	TOTAL (kg)
Truss accessory	0,75	2	1,5
Complete truss system	53,3	0,5	26,65
Loads	368	0,5	184
Cables	38	0,5	19
			231,15

Figure 69

In this example we have a weight of 231,15 kg.

With that load, check what position the load should have on the tower fork. Take into account that the truss is supported by two points of the fork. To find out which is the largest load, take the farthest position from the base of the fork.



WTS	UNIT	AS MECHANISM				
		P1	P2	P3	P4	P5
905	lbs	992	970	926	895	
	kg	450	440	420	406	
1206	lbs	1213	1168	1146	1124	1080
	kg	550	530	520	510	490
708	lbs	992	970	948	926	882
	kg	450	440	430	420	400
506	lbs	1124	882	772	661	
	kg	510	400	350	300	
256	lbs	573	482	419	353	
	kg	260	220	190	160	
375	lbs	772	639	529	507	
	kg	350	290	240	230	

Figure 70

Choose the WTS tower model. Check for the value immediately above the load you need. With this value, take the exact position to which the accessory for fixing the truss must be placed.

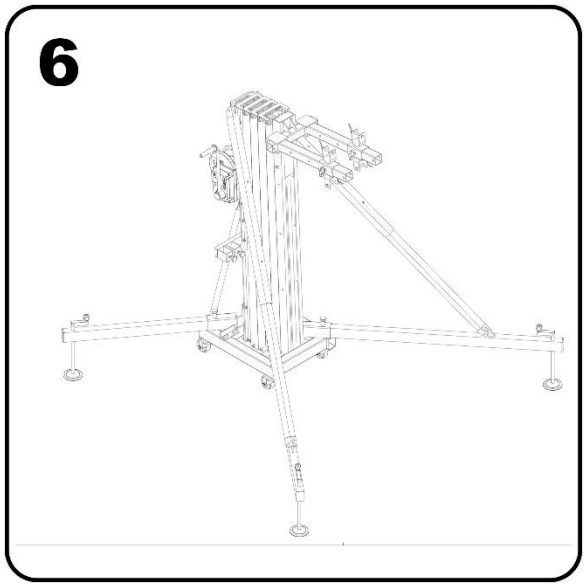


Figure 71

Place the accessory in the calculated position.

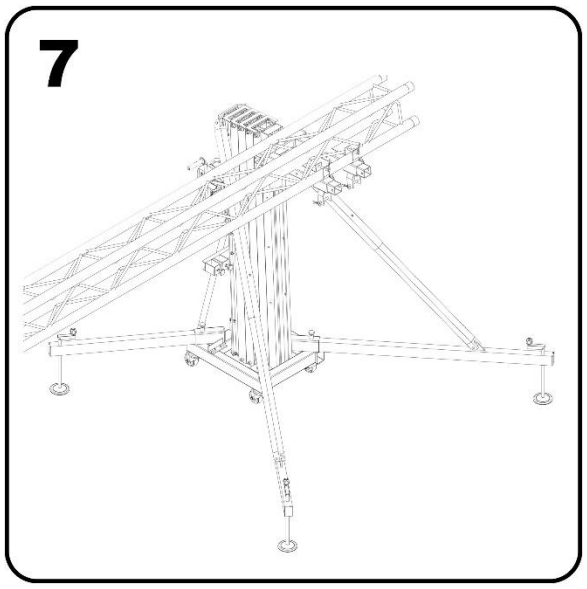


Figure 72

Join the truss system to the tower.

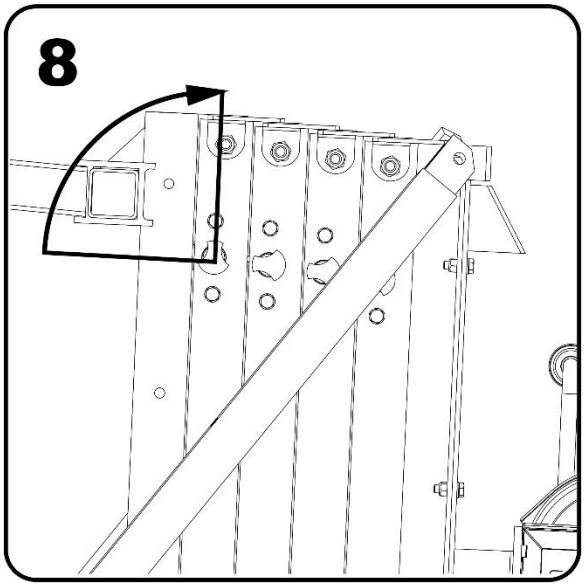


Figure 73

Unlock the mast safety system. Operate the winch handle to raise the load.

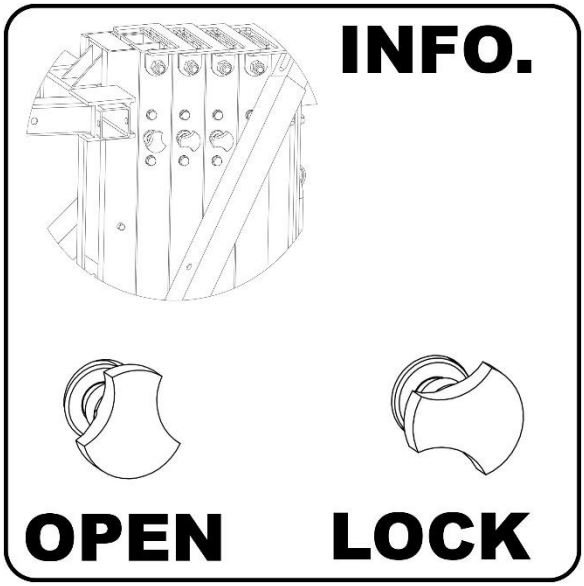


Figure 74

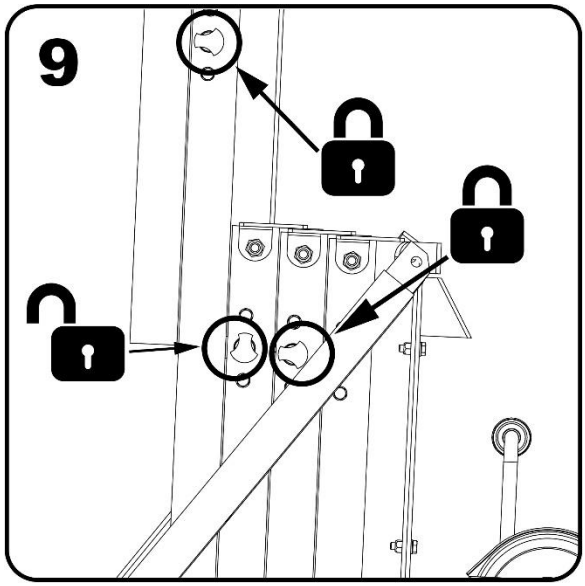


Figure 75

When the section reaches its end of path, lock with the safety system and unlock the next safety system to raise the next mast. Perform the same operation until you reach the required height.

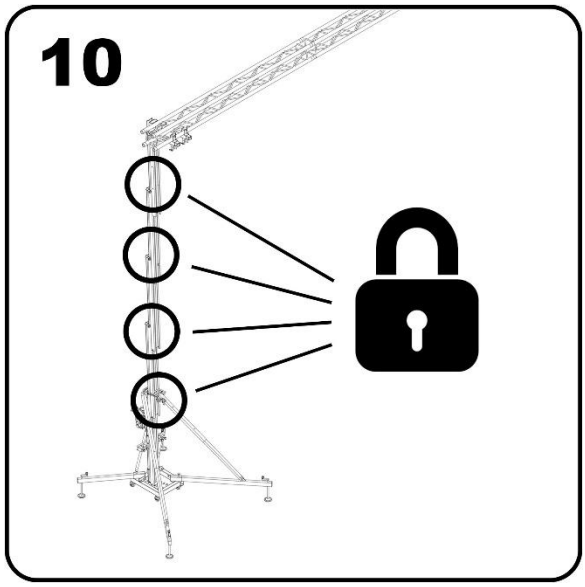


Figure 76

All safety systems must be in their locked position. Slack the cable from the winch so that the system is seated.

WARNING! The rate of rise and descend should be similar. If the structure rises or descends faster at one end, a destabilization of the entire facility can occur, causing a serious accident.

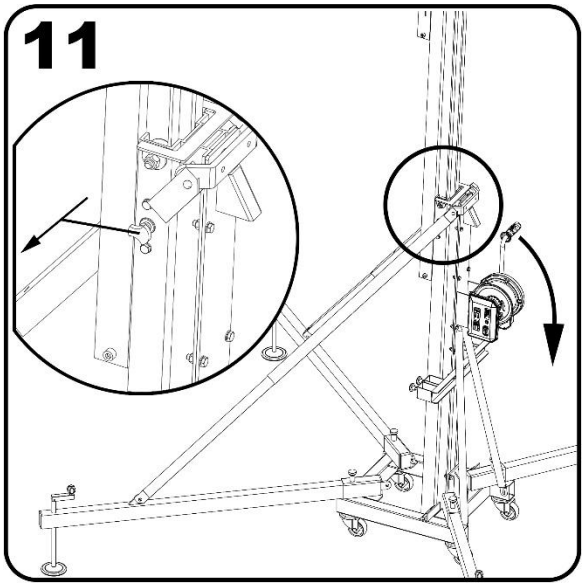


Figure 77

To descend the load: **Tense the cable and unlock the first security system**. Turn the winch while keeping the safety system unlocked with your other hand. If the safety system is not operated with one hand, the tower will descend until it is locked.

WARNING! If the tower is attempted to go down without tension in the cable and any of the safety systems are activated, a dangerous situation will occur because the load will descend very abruptly, being able to destabilize the whole installation and incurring in a serious accident.

Once the load is descended, block all sections and follow steps 4 to 1.

TRUSS SYSTEM ELEVATION IN STRUCTURAL MODE

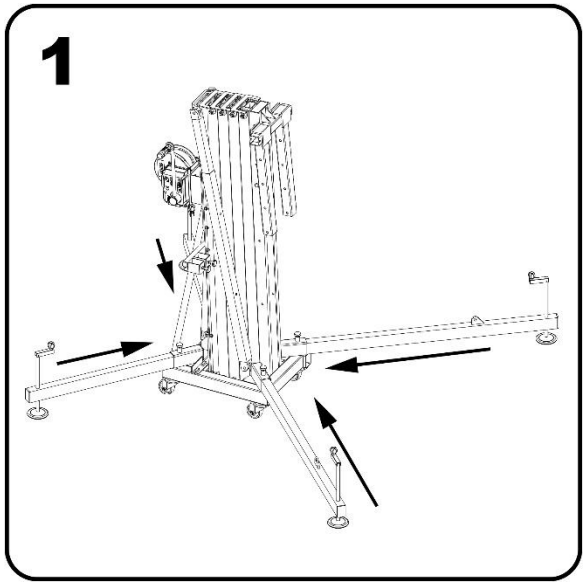


Figure 78

Fix and secure the stabilizer legs to the base.

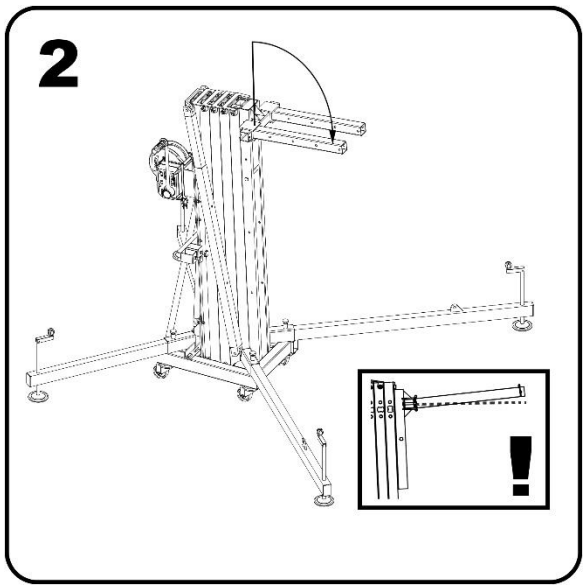


Figure 79

Turn the forks and adjust to the desired width. Ensure it with the pins.

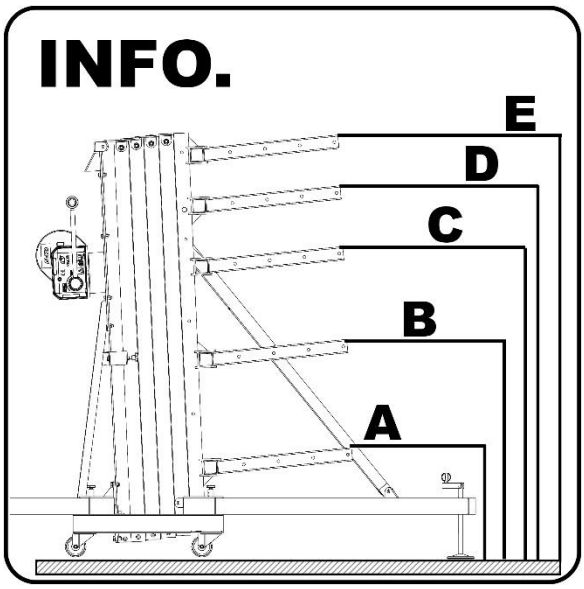


Figure 80

WTS towers have the option to change the position of the carriage. Therefore, depending on the use, the load can be raised from different heights. The carriage can be rotated to obtain the required height.

WTS	A	B	C	D	E
256	435	695	1105	1315	1505
375	435	695	1105	1315	1505

Dimensions in mm.

Figure 81

WTS	A	B	C	D	E
256	17,13	27,36	43,5	51,77	59,25
375	17,13	27,36	43,5	51,77	59,25

Dimensions in inches.

Figure 82

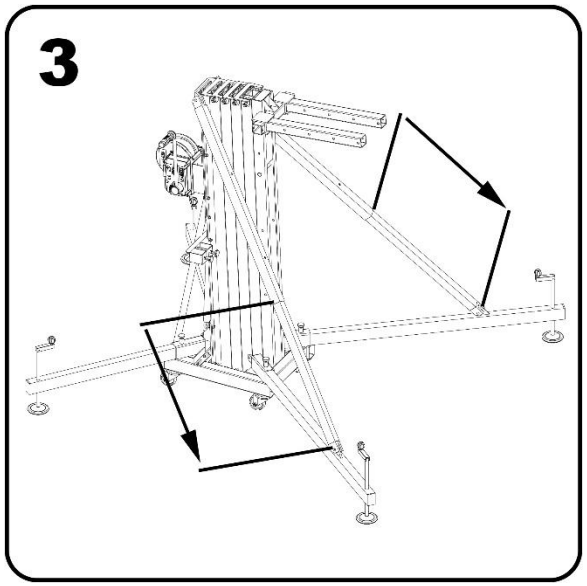


Figure 83

Place the reinforcement bars and fix them with its pins to the frontal legs.

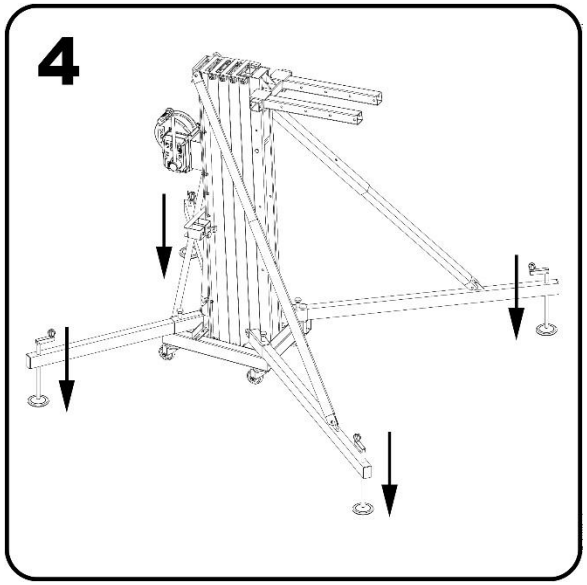


Figure 84

Place the tower in its working position and level until the bubble level is centered. Wheels should not get in contact with the ground.

Calculate the load to be lifted with the tower. An example of basic load calculation is attached.

ITEM	WEIGHT (kg)	QUANTITY	TOTAL (kg)
Truss accessory	0,75	2	1,5
Complete truss system	53,3	0,5	26,65
Loads	368	0,5	184
Cables	38	0,5	19
			231,15

Figure 85

In this example we have a weight of 231.15 kg.

With that load, see what position the load should have on the tower fork. Take in account that the truss is supported by two points of the fork. To find out which is the largest load, take the position farthest from the base of the fork.

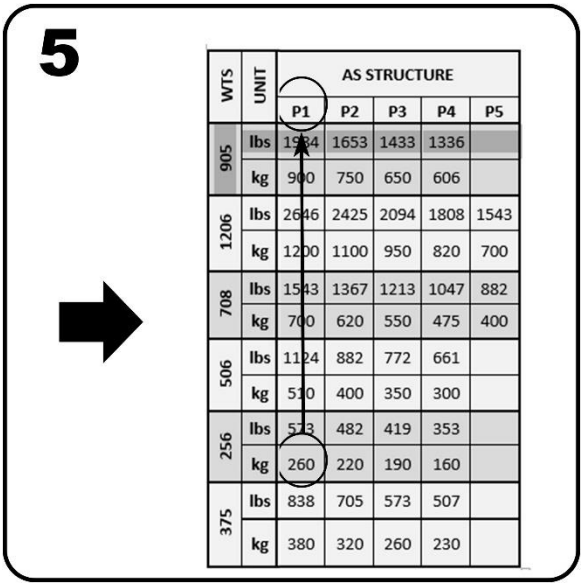


Figure 86

Choose the WTS tower model. Check for the value immediately above the load you need. With this value, take the exact position to which the accessory for fixing the truss must be placed.

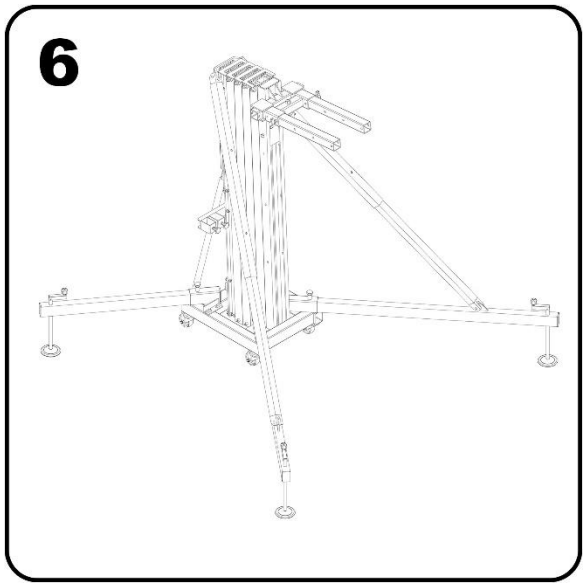


Figure 87

Place the accessory in the calculated position.

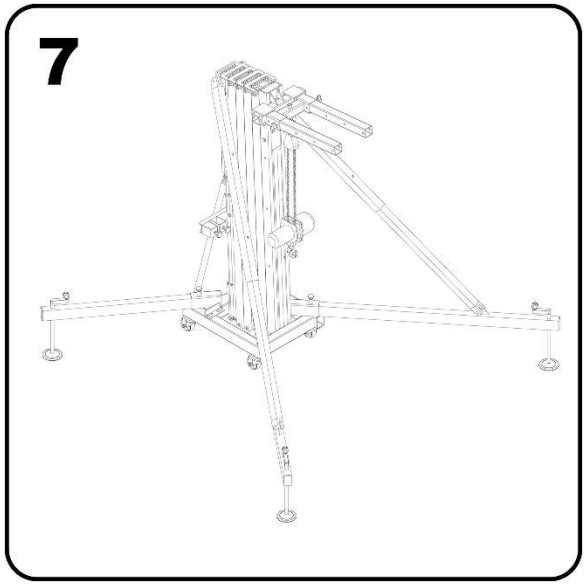


Figure 88

Join the truss system to the tower.

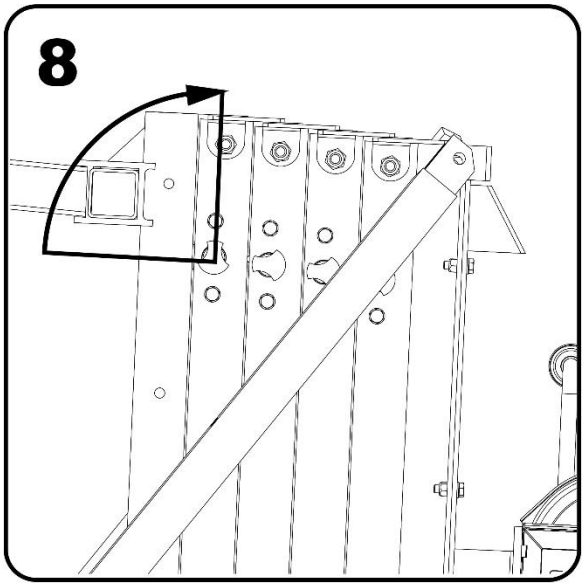


Figure 89

Unlock the mast safety system. Operate the winch handle to raise the load.

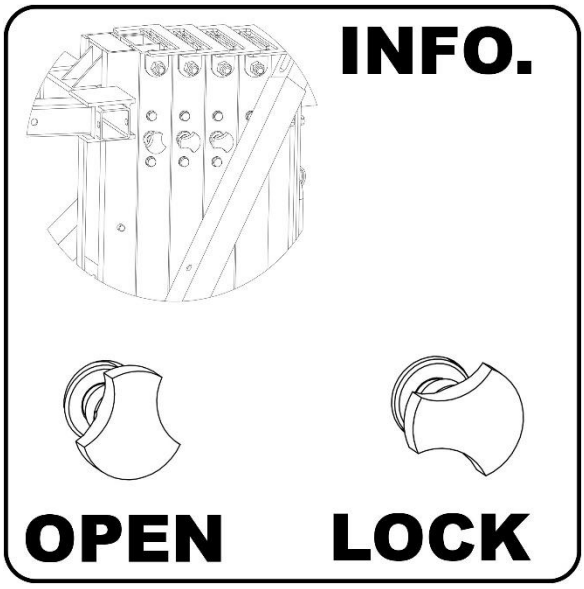


Figure 90

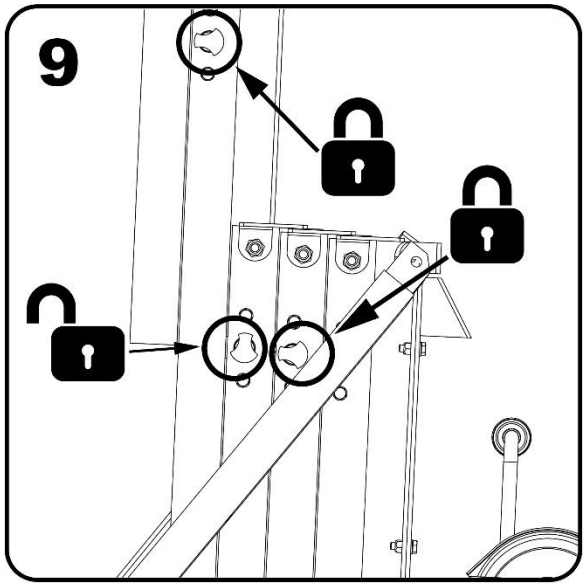


Figure 91

When the section reaches its end of path, lock with the safety system and unlock the next safety system to raise the next mast. Perform the same operation until you reach the required height.

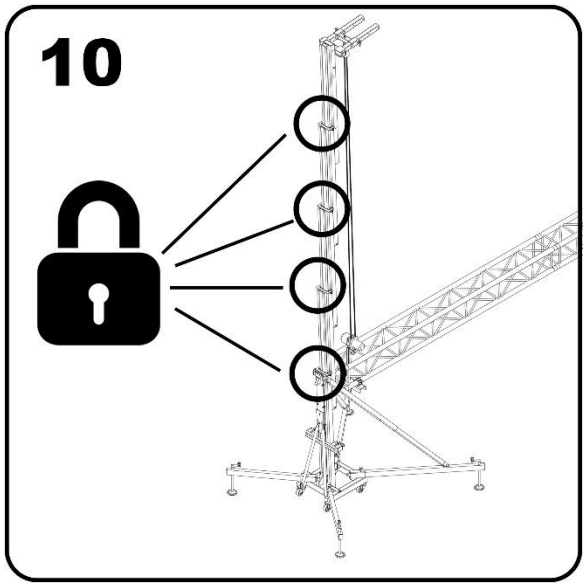


Figure 92

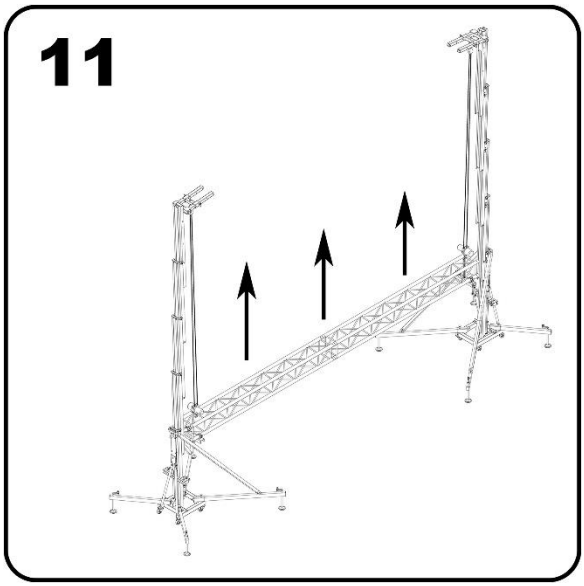


Figure 93

All safety systems must be in their locked position. Slack the cable from the winch so that the system is seated.

WARNING! The rate of rise and descend should be similar. If the structure rises or descend faster at one end, a destabilization of the entire facility can occur, causing a serious accident.

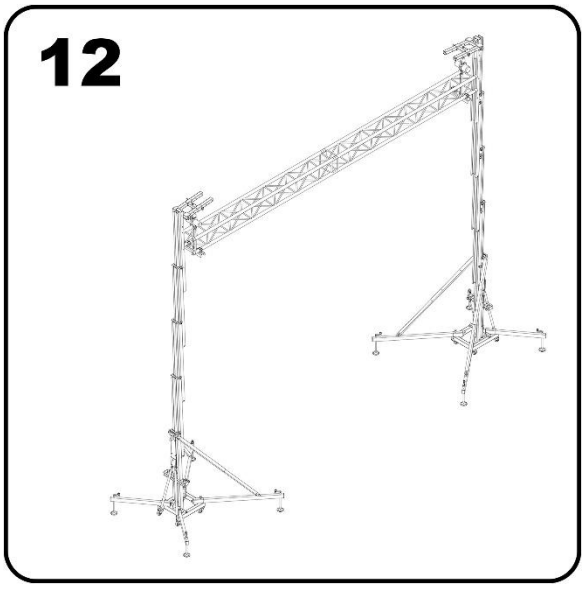


Figure 94

To descend the load: **Tense the cable and unlock the first security system**. Turn the winch while keeping the safety system unlocked with your other hand. If the safety system is not operated

with one hand, the tower will descend until it is locked.

Once the load is descended, block all sections and follow steps 4 to 1 (in that order).

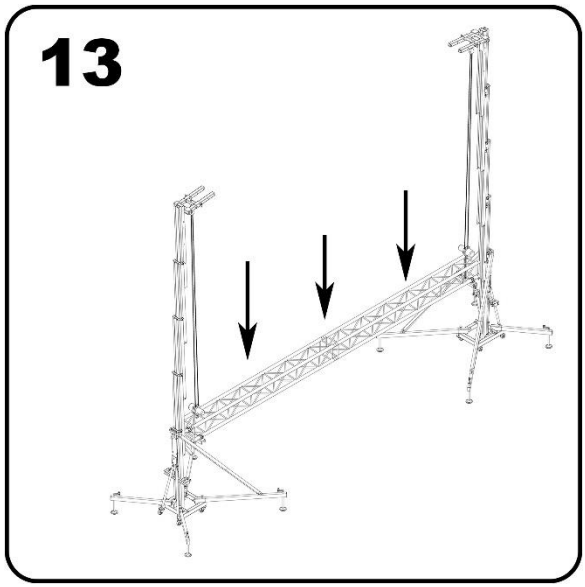


Figure 95

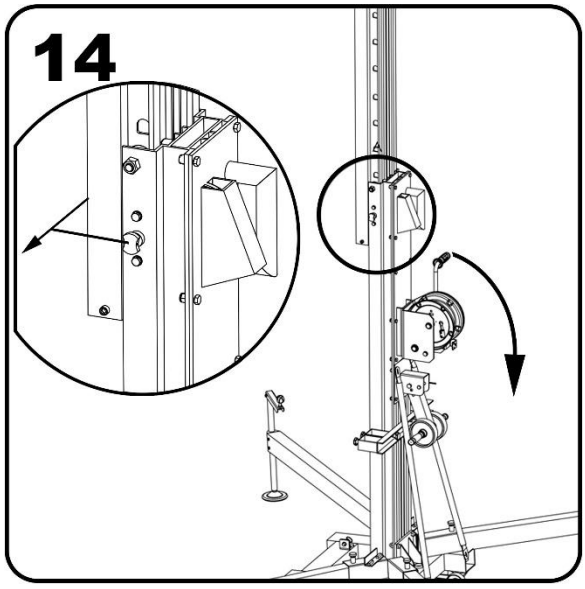


Figure 96

WARNING! If the tower is attempted to go down without tension in the cable and any of the safety systems are activated, a dangerous situation will occur because the load will descend very abruptly, being able to destabilize the whole installation and incurring in a serious accident.

USING THE TOWER IN STRUCTURAL MODE (WIND CONDITION)

The towers used in the structural mode form a column type system that can withstand higher loads than the mechanism mode.
In order to be able to use the towers outdoors and subjected to bursts of wind, you should contact an engineer in the area or our technical department to study the case

In outdoor use many factors must be taken into account, the most important are:
- Wind gusts
- Total exposed area
- Working height
- Angle of the braces
- Weights and distance to the tower
- Rigging of all joints
- Etc …

As an operating guide, the towers involved in this manual can be used outdoors as long as they are in structural mode and the maximum loads are those of the mechanism mode.

This is because the loads transmitted by the winds are transmitted vertically from the tower to the ground, adding an overload that depends on several factors. This overload is added to the maximum load of the tower.

If it is not calculated in each specific case of use, it is possible to take as base the data contained in the load chart (figure 105) operating the tower as mechanism for security purposes.

STANDARDS TAKEN INTO ACCOUNT

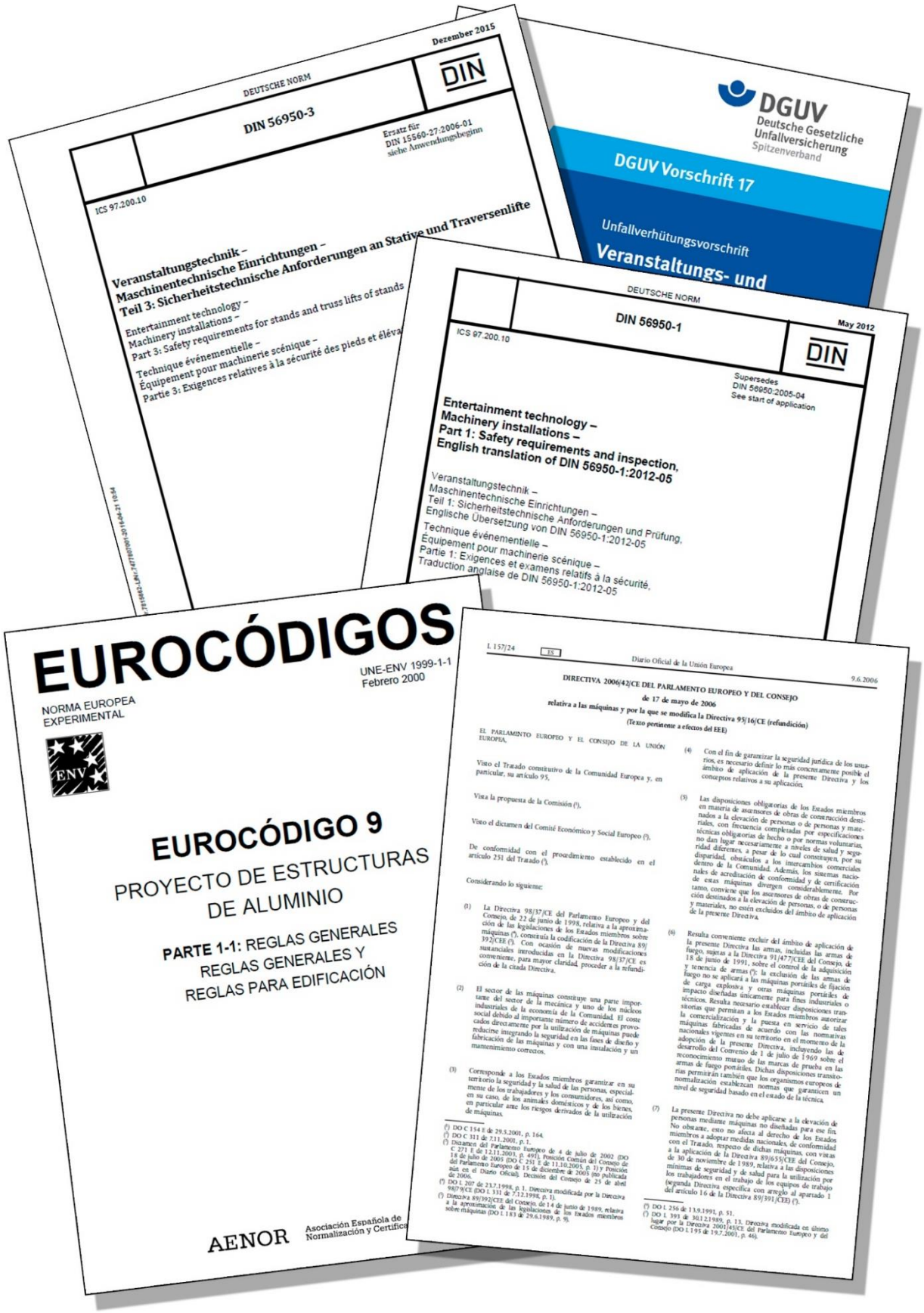


Figure 97

PLACING THE LOAD

1. Determine the position where the load will be placed and consult the tower capacity. Never exceed it.
2. The “X” distance between the load is taken from the carriage to the end of the horns.
3. When possible, place the load as close to the carriage as possible. This prolongs the life of the tower.

TOWER	X in P1 (mm / inch)	X in P2 (mm / inch)	X in P3 (mm / inch)	X in P4 (mm / inch)	X in P5 (mm / inch)
WTS 1206/DY	85	270	450	635	820
WTS 905/DY **WTS 708/DY**	3.34	10.63	17.72	25	32.33
WTS 506/DY	100	260	425	580	
	3.93	10.23	16.73	22.83	
WTS 375/DY	95	225	355	485	
WTS 256/DY	3.74	8.85	13.97	19.1	

Figure 98

Detail of the position of all points of load.

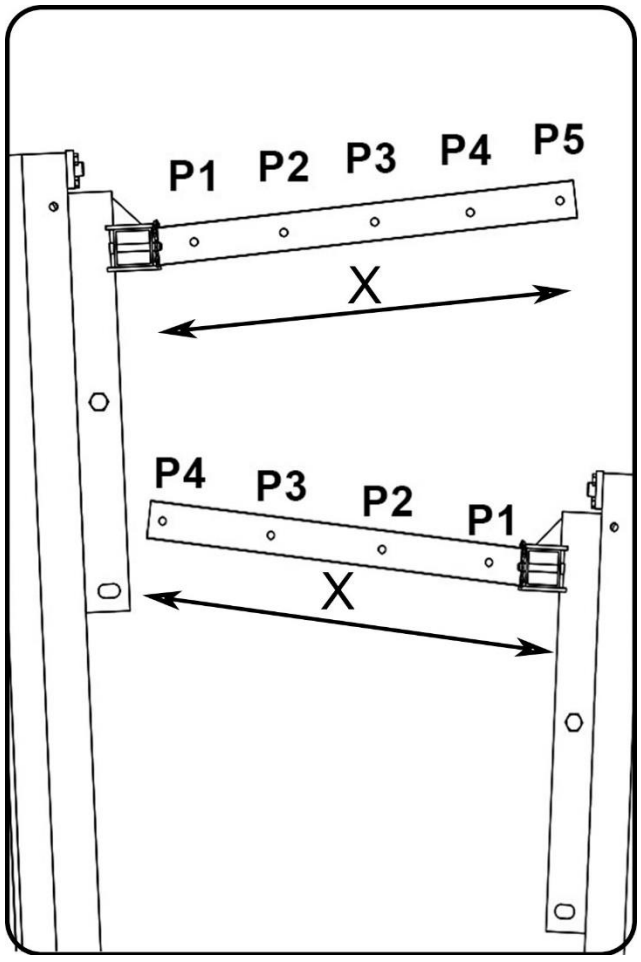


Figure 99

Detail of load positions.

LOAD CHART

The maximum loads supported by each tower model, for its maximum working height, can be consulted below:

USING THE TOWER AS MECHANISM.

The tower behaves like a machine when lifting a load making use of the winch as a lifting element. In this case all the parts of the tower behave like a mechanism that uses pulleys, cables and guides to be able to execute the elevation of a load at a certain height.

USING THE TOWER AS STRUCTURE.

The tower behaves like a structure when all the sections are blocked in such a way that the cable is without tension. In this case the locking system together with the profiles, base and legs act as a support column from which loads can be hung using some support elements such as manual or electric hoists.

WTS	UNIT	AS MECHANISM					AS STRUCTURE				
		P1	P2	P3	P4	P5	P1	P2	P3	P4	P5
905	lbs	992	970	926	895		1984	1653	1433	1336	
	kg	450	440	420	406		900	750	650	606	
1206	lbs	1213	1168	1146	1124	1080	2646	2425	2094	1808	1543
	kg	550	530	520	510	490	1200	1100	950	820	700
708	lbs	992	970	948	926	882	1543	1367	1213	1047	882
	kg	450	440	430	420	400	700	620	550	475	400
506	lbs	1124	882	772	661		1124	882	772	661	
	kg	510	400	350	300		510	400	350	300	
256	lbs	551	482	419	353		573	482	419	353	
	kg	250	220	190	160		260	220	190	160	
375	lbs	772	639	529	507		838	705	573	507	
	kg	350	290	240	230		380	320	260	230	

Figure 100

GROUND COMPACTION DEGREE

Surfaces such as hard ground or gravel can vary in strength depending on the relative humidity. This relative humidity varies throughout the day, so the resistance of the ground to absorb the stress of the tower loaded also varies. Positioning a tower in these conditions can result in the ground falling under the tower supports, being able to cause a serious accident.

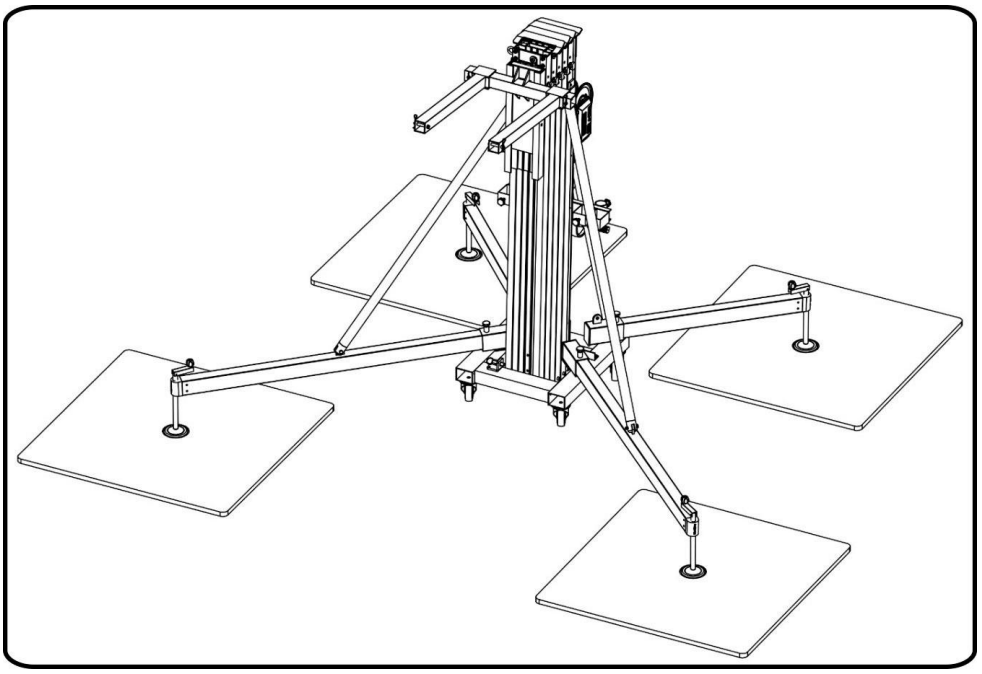


Figure 101

Detail of plates place. Support must be centered with respect to the plate.

To avoid this, it is advisable to put bases in the support, to facilitate uniform distribution on the ground, expanding the contact surface of each support. The following table lists the minimum area of these surfaces.

WTS TOWER MODEL	Side length of the plate in meters, and kg/m² that can support the ground.		
	150 kg/m²	**250 kg/m²**	**350 kg/m²**
WTS 905/DY	1,4	1	0,9
WTS 1206/DY	1,5	1,2	1
WTS 708/DY	1,3	1	0,8
WTS 506/DY	1,1	0,8	0,7
WTS 256/DY	0,8	0,6	0,5
WTS 375/DY	0,9	0,7	0,6

Figure 102

DYNSYS SYSTEM

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

- WTS 256 DY - WTS 375 DY - WTS 506 DY - WTS 905 DY - WTS 708 DY - WTS 1206 DY

EXPLANATION

DYNSYS system is a solution for the control of the maximum load in lifting systems.

DYNSYS limits the maximum load of the tower avoiding raising a higher load than the specified when the tower is used as mechanism. For more information about the 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.

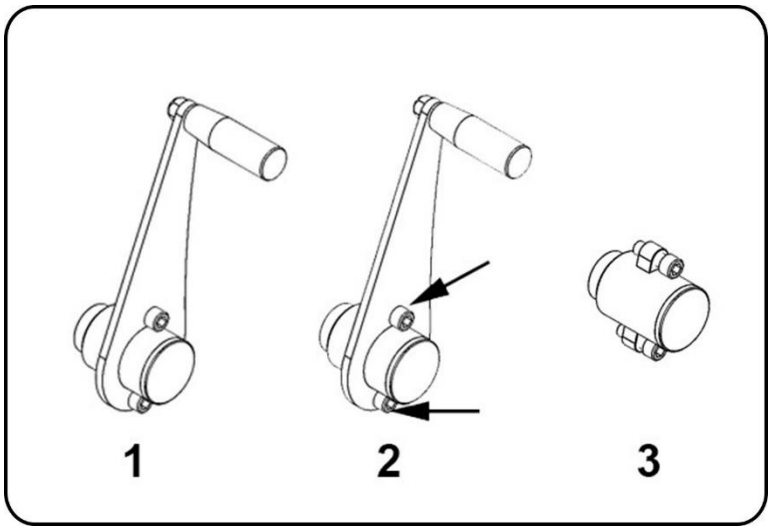


Figure 103

The system has several elements working in a coordinated manner. On the one hand, the most external aluminum profile has a special machining to house the safety pin, and the iron carriage has the mechanics of overload detection and a status marker.
Finally, the original handle of the winch is replaced by a specific one for the **DYNSYS** system.

OPERATING

NORMAL OPERATION, WITHOUT OVERLOAD

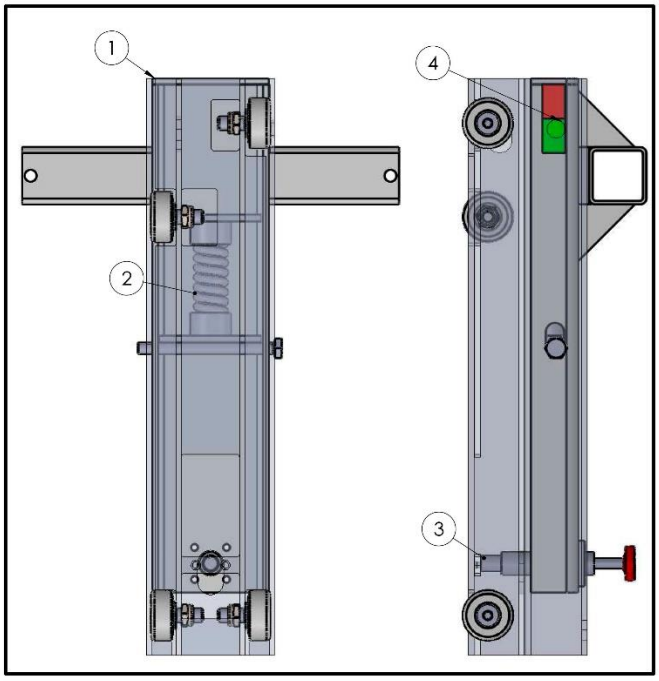


Figure 104

Under these conditions, the tower raises the coupled load and no vertical displacement occurs in the carriage **(1)** so that the inner spring **(2)** does not compress and the safety pin **(3)** does not act. The winch handle allows the user to raise or lower the load with ease and the window of the status marker **(4)** shows the color **GREEN.**

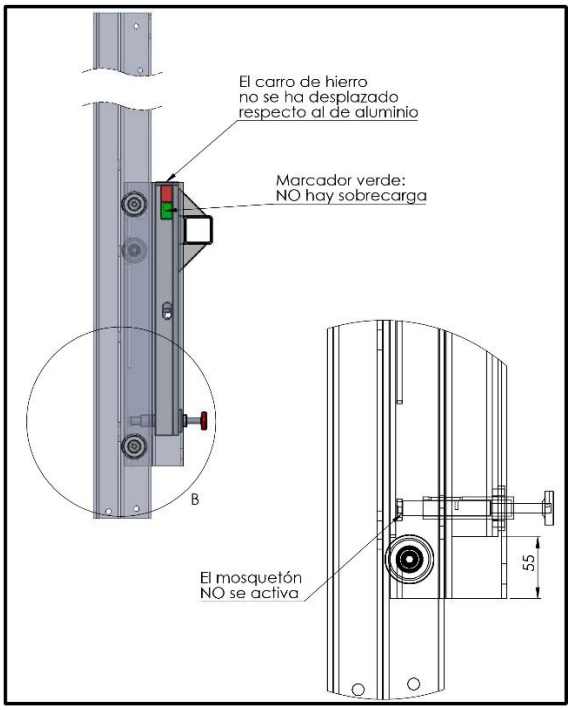


Figure 105

OPERATION WITH OVERLOAD

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:

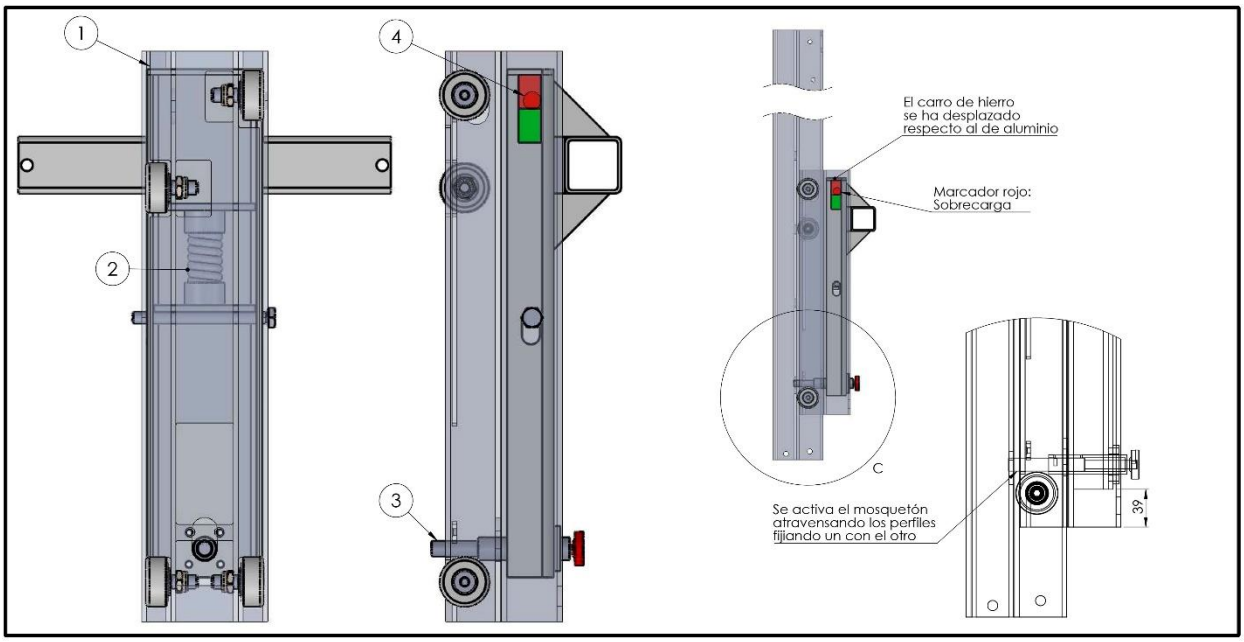


Figure 106

- There is a more pronounced vertical displacement in the iron carriage **(1).**
- The internal spring **(2)** shrinks due to this additional pressure.
- The safety pin **(3)** is released from its resting position and entered the first free hole found in the aluminum 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.
- The status dial window **(4)** shows the **RED** color of overload.

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 **(3)** to release it and, keeping it, turn the hand winch handle to lower the load. Throughout this process, the spring **(2),** will be relaxed by reducing the pressure exerted on it and the iron car 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.

DYNAMIC OVERLAP

Thanks to the continuous development of new solutions for the lifting towers, Work Lifters has developed and patented an innovative solution that increases the resistance of the towers and reduces their deflection. **Dynamic Overlap** makes that each tower section overlaps with the previous one at different distances, as with trees in nature. This means that all efforts are concentrated in the same way in all the sections of the tower. Thanks to this, the tower can withstand greater efforts with less deflection.

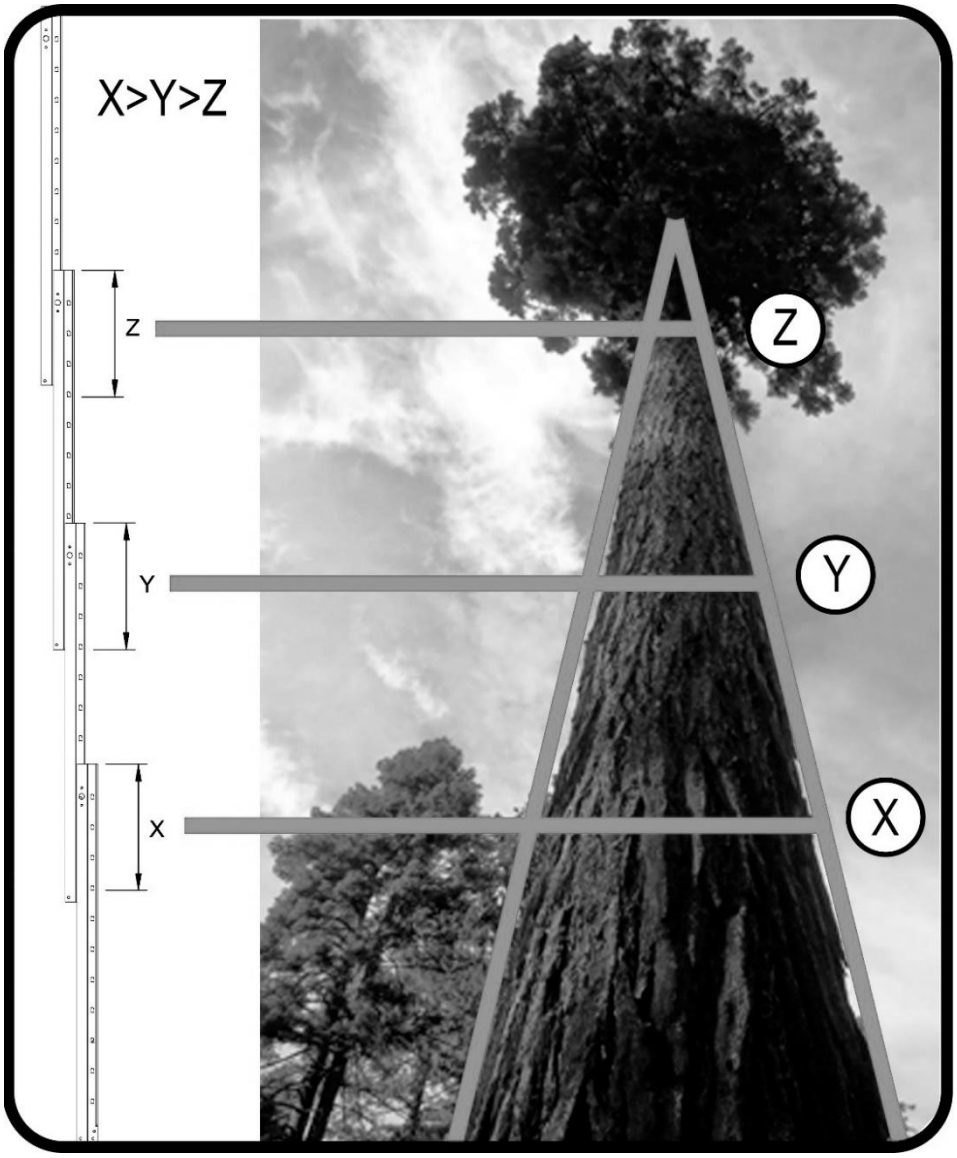


Figure 107

TRANSPORT

To transport the towers:

- Check that the legs are firmly attached to the tower in their transport position and cannot be released.
- Check that the forks are securely fastened with the pins and cannot be removed.
- Check that the carriage is securely fastened with the car brake system.
- Check that all sections are blocked.

WITH FORKLIFT

To transport the towers with a mechanism type forklift, the AWS 100 accessory is necessary. Follow the instructions of the machine operator transport manual. Consider the height of what is transported. Avoid sudden turns and braking.

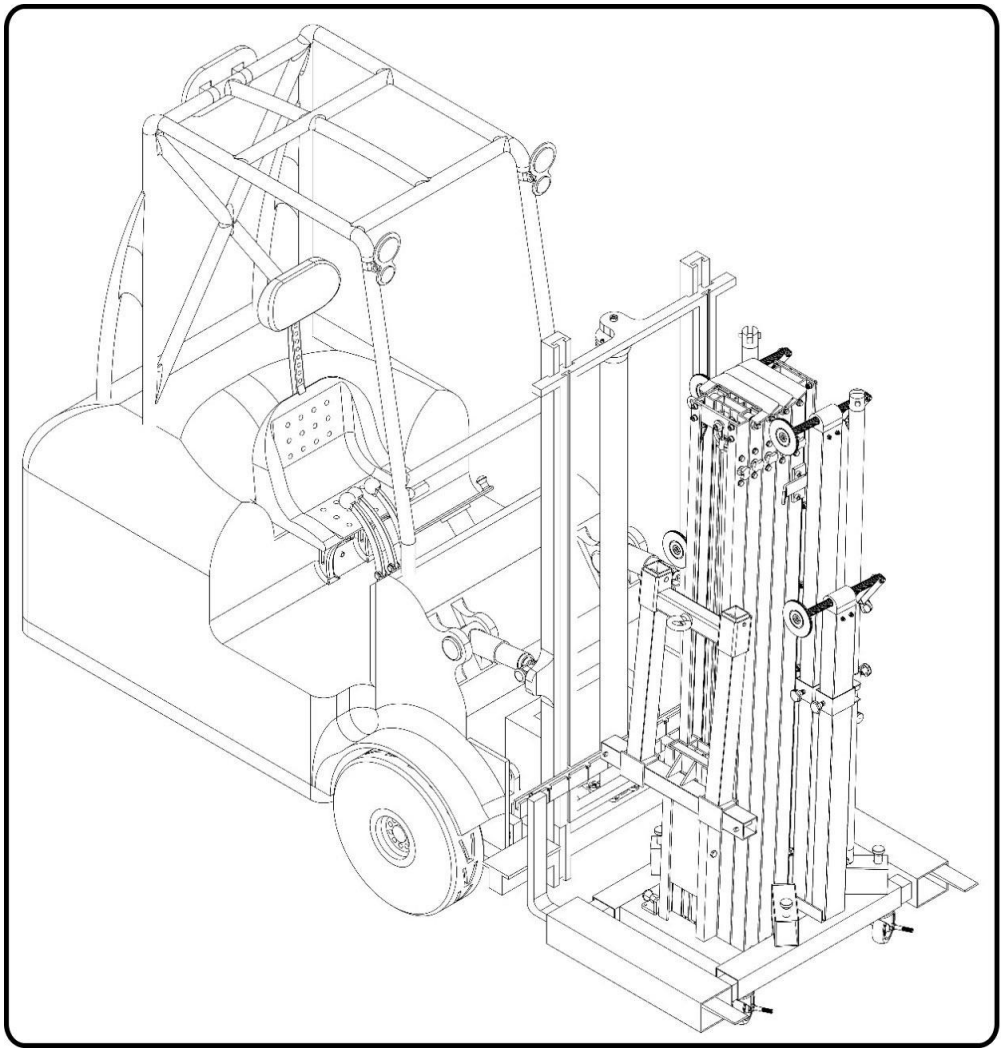


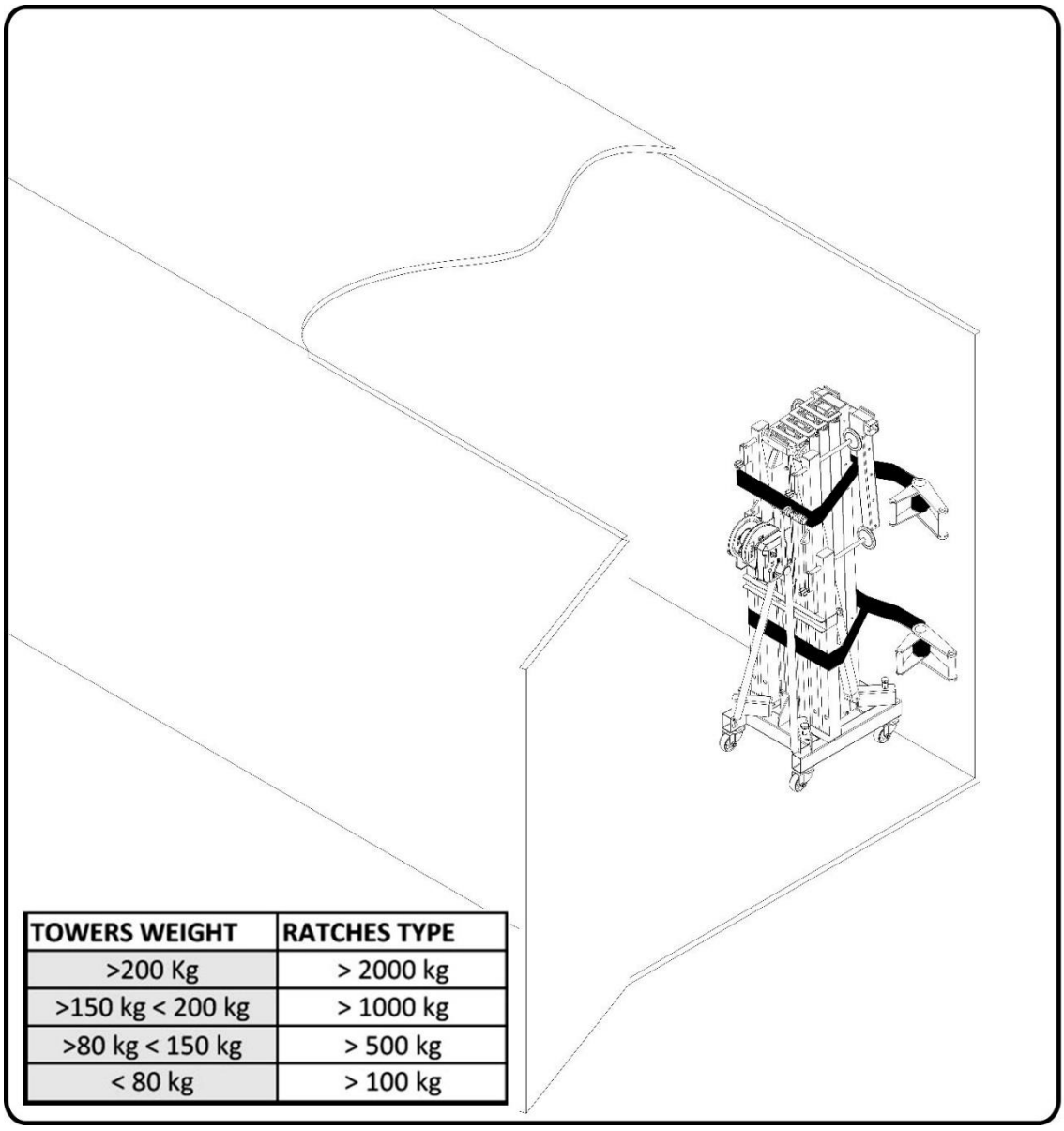
Figure 108

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 1000 kg of force for the **WTS 506**, **256** and **375** models. Use ratchets no less than 2000 kg of force for the **WTS 905**, **1206** and **708** models.

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



TOWERS WEIGHT	RATCHES TYPE
>200 Kg	> 2000 kg
>150 kg < 200 kg	> 1000 kg
>80 kg < 150 kg	> 500 kg
< 80 kg	> 100 kg

Figure 109

Detail tower place and shape holding.

DGUV V17/18 NORM 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 to achieve a high degree of safety in quantities such as supported load, equilibrium, resistance to friction, etc.

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

On the other hand, in order to achieve an optimal performance with these units, it is recommended, apart from a responsible use of the unit, (meeting basic norms such as obey the maximum load or balance), a periodic maintenance, which 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 P.A. lift systems.

SPECIFICATIONS

WTS Model	256		375		506		905		708		1206	
Folded height	1,60	m	1,60	m	1,93	m	1,66	m	2,00	m	2,00	m
	5,25	ft	5,25	ft	6,33	ft	5,45	ft	6,56	ft	6,56	ft
Base width	0,56	m	0,56	m	0,58	m	0,585	m	0,705	m	0,585	m
	1,84	ft	1,84	ft	1,90	ft	1,92	ft	2,31	ft	1,92	ft
Base length	0,44	m	0,44	m	0,52	m	0,58	m	0,58	m	0,58	m
	1,44	ft	1,44	ft	1,71	ft	1,90	ft	1,90	ft	1,90	ft
Maximum height	6,26	m	5,09	m	6,08	m	5,20	m	8,13	m	6,00	m
	20,54	ft	16,70	ft	19,95	ft	17,06	ft	26,67	ft	19,69	ft
Minimum fork height	0,43	m	0,43	m	0,33	m	0,41	m	0,41	m	0,41	m
	1,41	ft	1,41	ft	1,08	ft	1,35	ft	1,35	ft	1,35	ft
Unfolded diameter	2,65	m	2,65	m	2,71	m	2,80	m	3,47	m	3,40	m
	8,69	ft	8,69	ft	8,89	ft	9,19	ft	11,38	ft	11,15	ft
Frontal side width	1,88	m	1,88	m	2,11	m	2,13	m	2,15	m	2,15	m
	6,17	ft	6,17	ft	6,92	ft	6,99	ft	7,05	ft	7,05	ft
Rear side width	1,60	m	1,60	m	1,55	m	1,90	m	2,55	m	2,55	m
	5,25	ft	5,25	ft	5,09	ft	6,23	ft	8,37	ft	8,37	ft
Fork length	0,50	m	0,50	m	0,61	m	0,65	m	0,86	m	0,86	m
	1,64	ft	1,64	ft	2,00	ft	2,13	ft	2,82	ft	2,82	ft
Number of profiles	5		4		4		4		6		4	
Minimum load capacity	25	Kg	25	Kg	25	Kg	25	Kg	25	Kg	25	Kg
	55,12	Lb	55,12	Lb	55,12	Lb	55,12	Lb	55,12	Lb	55,12	Lb
Max.load as mechanism	250	Kg	350	Kg	510	Kg	450	Kg	450	Kg	550	Kg
	551,16	Lb	771,62	Lb	1124,36	Lb	992,08	Lb	992,08	Lb	1212,54	Lb
Max. load as structure	260	Kg	380	Kg	510	Kg	900	Kg	700	Kg	1200	Kg
	573,20	Lb	837,76	Lb	1124,36	Lb	1984,16	Lb	1543,24	Lb	2645,55	Lb
Net weight	109,50	Kg	90,50	Kg	152	Kg	202	Kg	272	Kg	230,50	Kg
	241,41	Lb	199,52	Lb	335,10	Lb	445,33	Lb	599,66	Lb	508,17	Lb
Winch	900	Kg	900	Kg	900	Kg	1200	Kg	1200	Kg	1200	Kg
	1984,2	Lb	1984,2	Lb	1984,2	Lb	2645,5	Lb	2645,5	Lb	2645,5	Lb
Cable diameter	6	mm^2	6	mm^2	6	mm^2	7	mm^2	7	mm^2	7	mm^2
Noise emissions	70	dB	70	dB	71	dB	73	dB	73	dB	73	dB

Figure 110

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 DIN56950: 1/3. If the DYNSYS system is installed in the tower.

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
***Address*:**	Avda. El Saler, 14 Pol. Industrial L'Alteró. 46460 SILLA – Valencia (Spain)
	Frontal load lifter

***Description*:**

***MODEL* WTS 905 – WTS 905 DY**	**MAX. LOAD:** 900 kg
***MODEL* WTS 1206 – WTS 1206 DY**	**MAX. LOAD:** 1200 kg
***MODEL* WTS 708 – WTS 708 DY**	**MAX. LOAD:** 700 kg
***MODEL* WTS 506 – WTS 506 DY**	**MAX. LOAD:** 510 kg
***MODEL* WTS 256 – WTS 256 DY**	**MAX. LOAD:** 260 kg
MODEL WTS 375 – WTS 375 DY	**MAX. LOAD:** 380 kg

CE

Jose Vila Ortiz, July 2016

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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