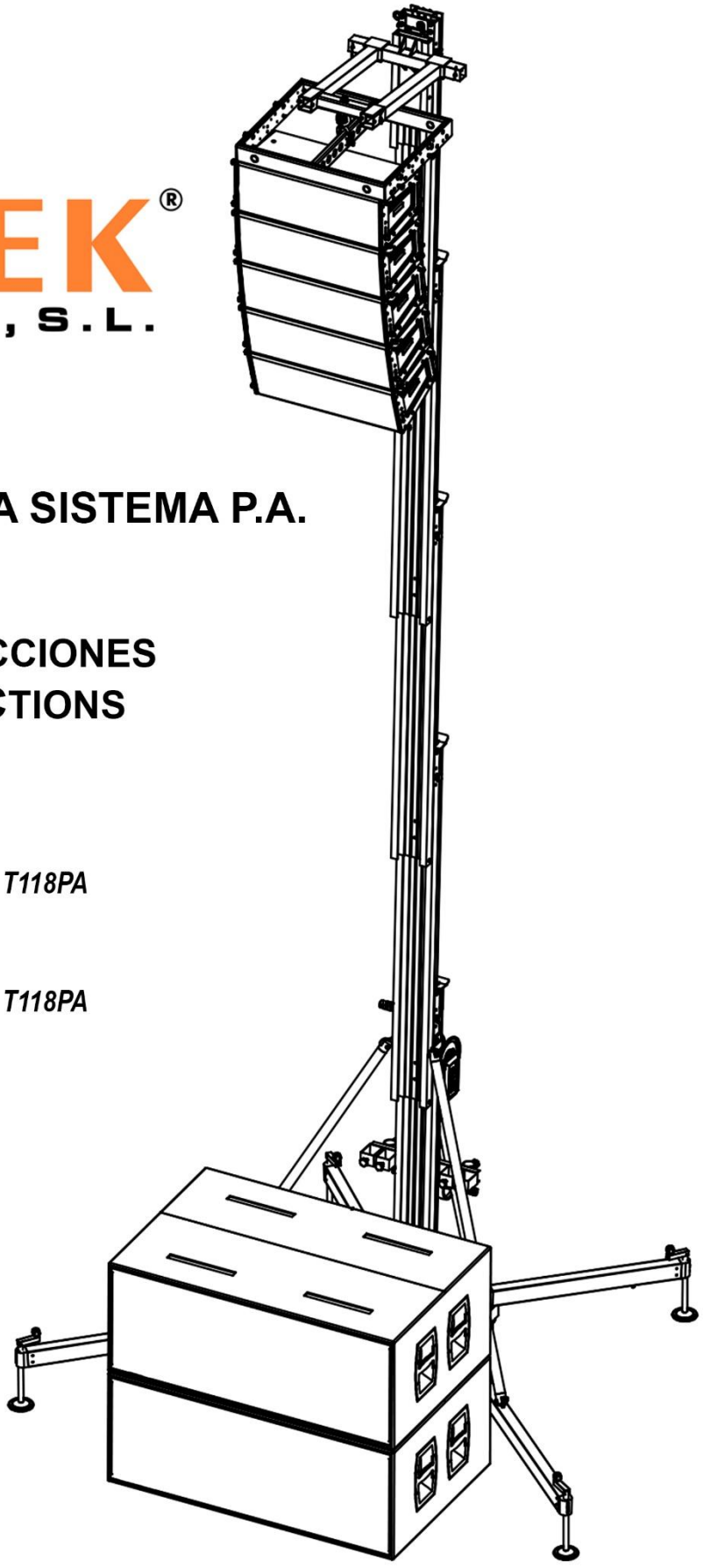
FANTEK®
INDUSTRIAL, S.L.



ELEVADORES PARA SISTEMA P.A.
P.A. LIFT SYSTEMS

MANUAL DE INSTRUCCIONES
OPERATING INSTRUCTIONS

PARA MODELOS:
T600PA, T108PA, T200PA, T117PA, T118PA

FOR MODELS:
T600PA, T108PA, T200PA, T117PA, T118PA

Rev. 01.07.07.2016

IMPORTANT

Read and understand precisely all points and aspects of this manual. Irresponsibly lifting loads can cause lethal accidents. Installation of P.A. systems and proper use are only responsibility of the user.

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

If in doubt, consult the technical department of Fantek Industrial S.L.

CONTENT

CONTACT

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ILLUSTRATION INDEX

RULES AND SAFETY USE

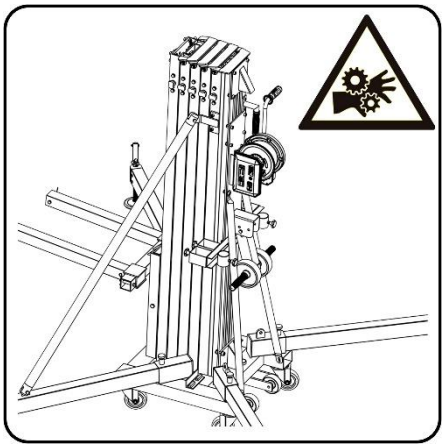

Figure 1

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

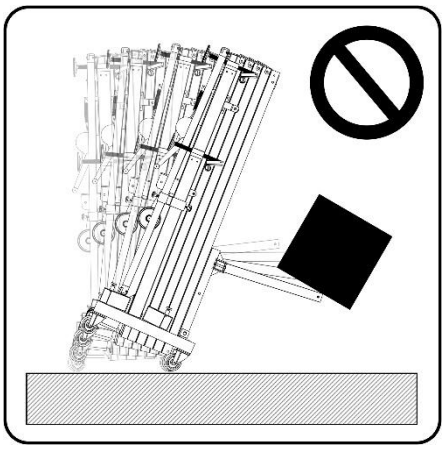

Figure 2

Not charge the tower without the legs stabilizers lowered.

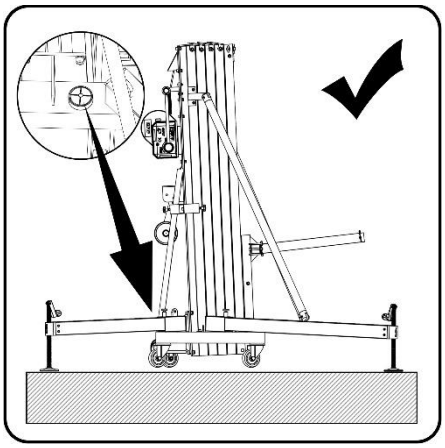

Figure 3

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.

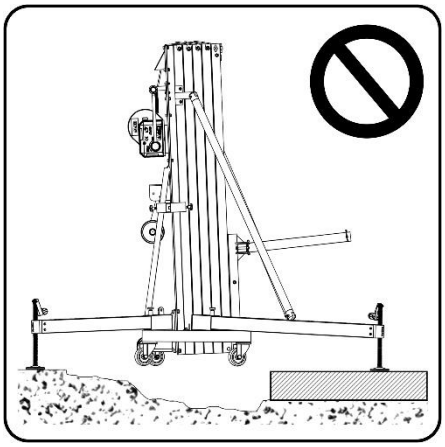

Figure 4

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.

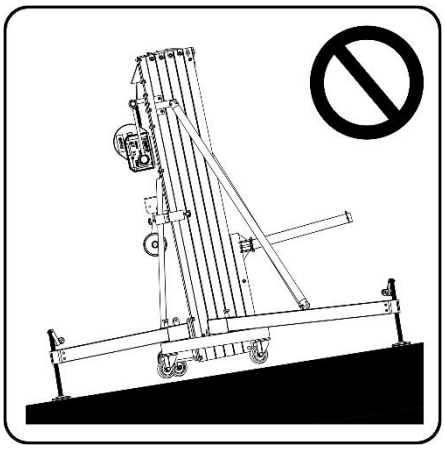

Figure 5

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

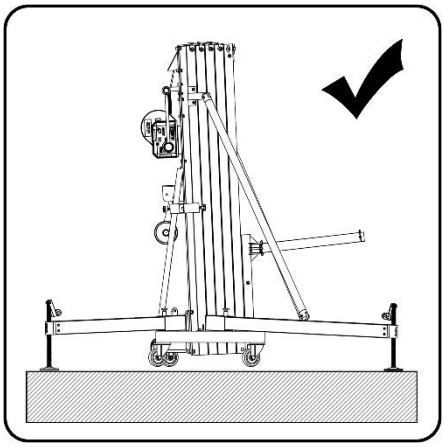

Figure 6

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

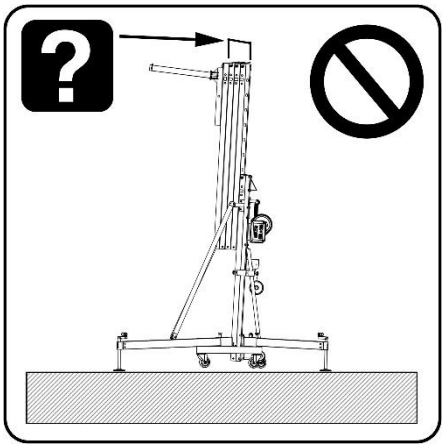

Figure 7

Lift the mast in the correct order.

Lift the mast of the tower starting always for the carried. The last mast lifted has to be the next to the section where the winch is placed.

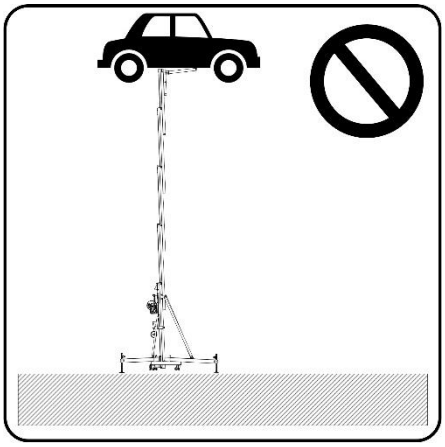

Figure 8

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

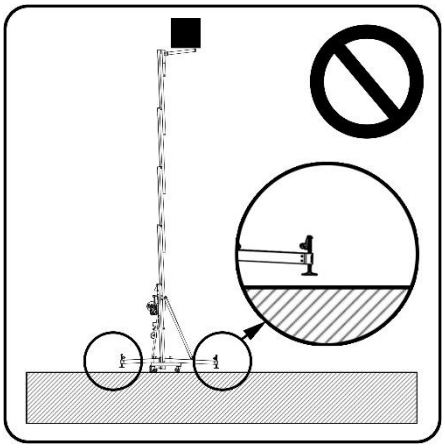

Figure 9

Never move a load without level.

Figure 10

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

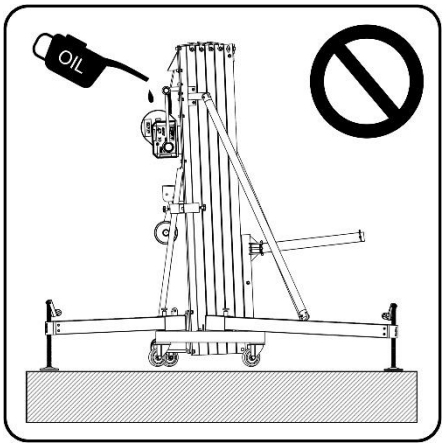

Figure 11

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

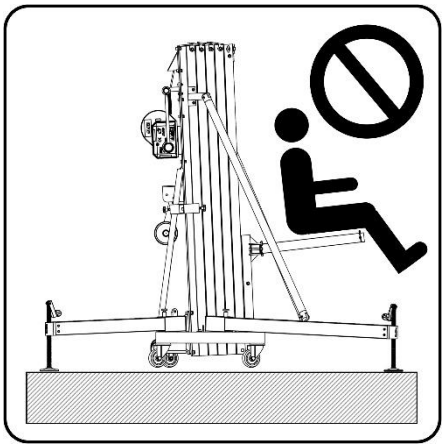

Figure 12

Not allowed to lift people or animals.

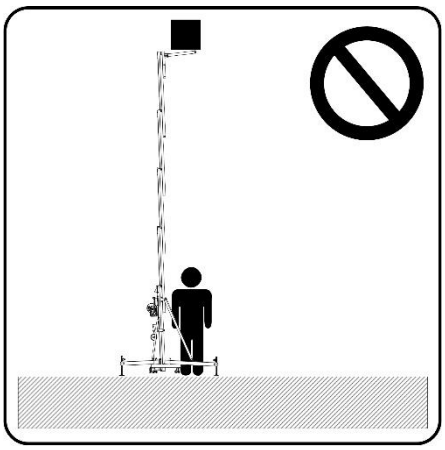

Figure 13

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

Voltaje	**Distancia mínima aproximada**	
Entre fases	**Metros**	**Pies**
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.

If necessary, use the grounding placed on the base.

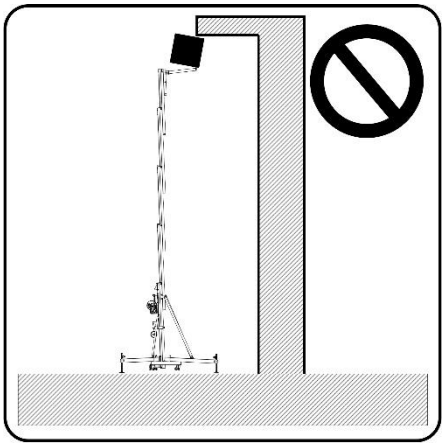

Figure 16

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

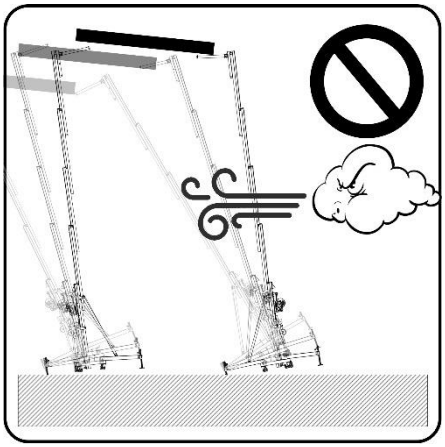

Figure 17

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.

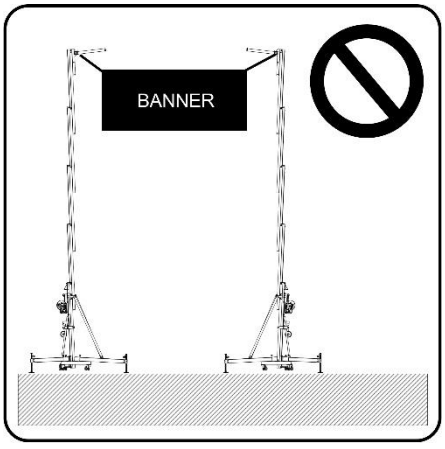

Figure 18

Do not use the tower as a support of banner or another type of decoration with strong wind. That can destabilize the tower and make it fall down.

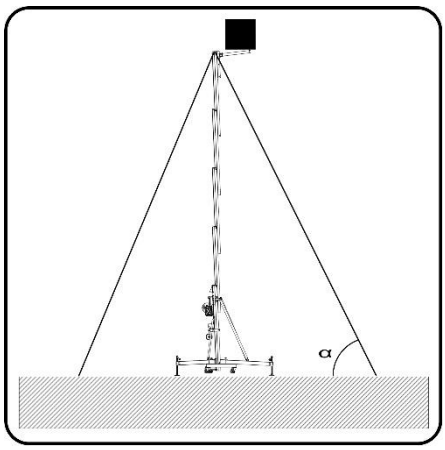

Figure 19

Anchoring the tower so that it cannot dump into its working position. As a guide, a table is attached to with tensile stress that must support either side of the wind system. Always under the responsibility of the user.

Área máx. P.A. = 5 m²	**Ángulo α máx. = 75º**	
Velocidad del viento = 100 Km/h		
Torre	**Altura (m)**	**Fuerza (kg)**
T600pa	6,8	1108
T108pa	6	1015
T117pa	5,8	959
T200pa	6	984
T118pa	5	840

Figure 20

These data have been calculated with the case:

- *Square area (worst than rectangular)*
- *Angle of 75 degrees. As the angle decreases the force does too.*
- *Speed contemplated 100k/h in RAFAGAS not exceeding 10 min.*

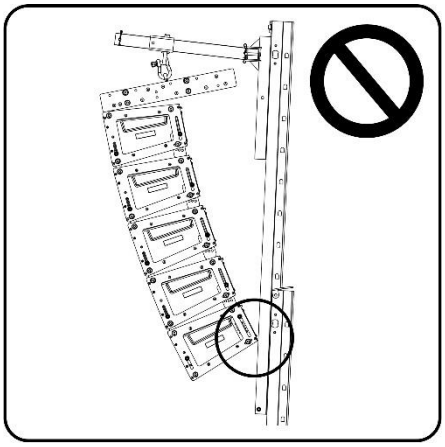

Figure 21

Prevent that the load do not touch the tower

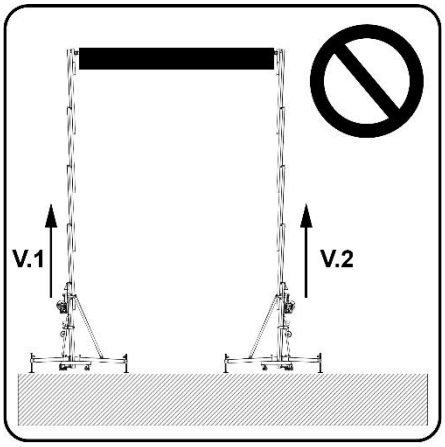

Figure 22

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

V1 ≠ V2 No lift

V1 = V2 Ok

IDENTIFICACION DE PARTES

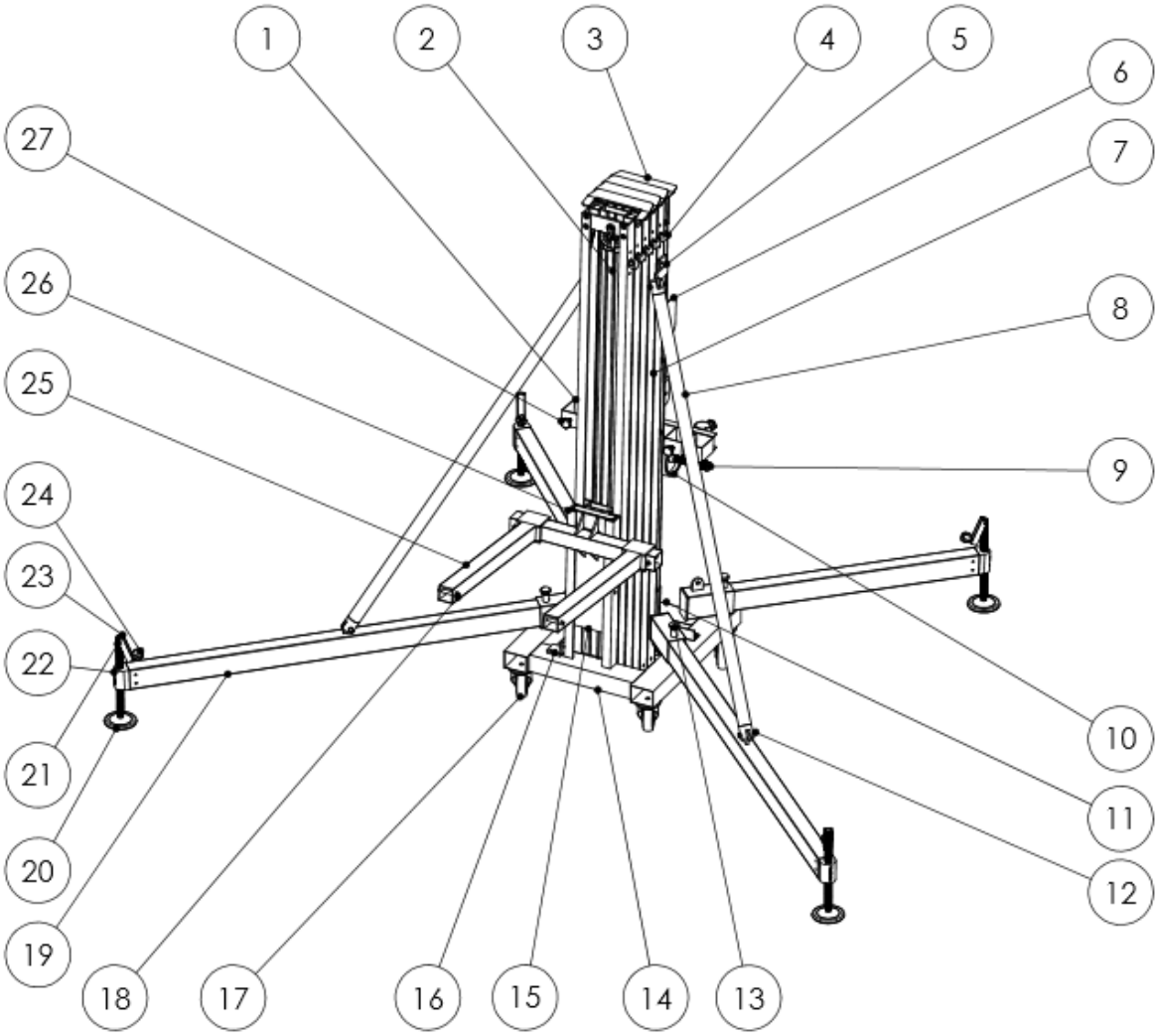

Figure 23. (Imagen representativa de torre tipo P.A.)

1	Support leg stabilizers carrier	11	Lower vertical wheel transport	21	Leveler asparagus
2	Steel cable	12	Pin reinforcement strut	22	Leveler support
3	Top boost reinforcement	13	Red knob base security system	23	Stabilizer support handle
4	Red knob mast security system	14	Tower base	24	Leveler knob
5	Strut reinforcement mast support	15	Steel carrier	25	Horns
6	Winch	16	Carrier brake system	26	Aluminum carrier
7	Tower mast	17	Base wheel	27	Leg stabilizer carrier knob
8	Aluminum reinforcement strut	18	Pin horn		
9	Protection sleeve	19	Leg stabilizer		
10	Horizontal transport wheel	20	Stabilizer plate		

HOW TO USE. STEP BY STEP

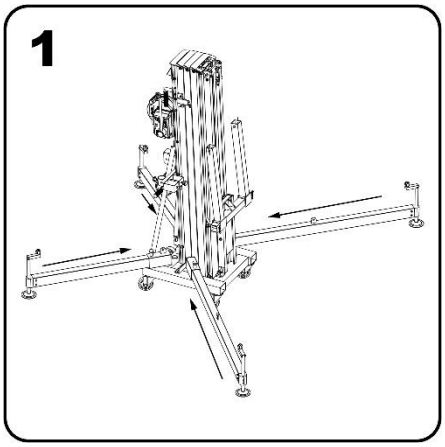

Figure 24

Fix and secure the legs stabilizers to the base.

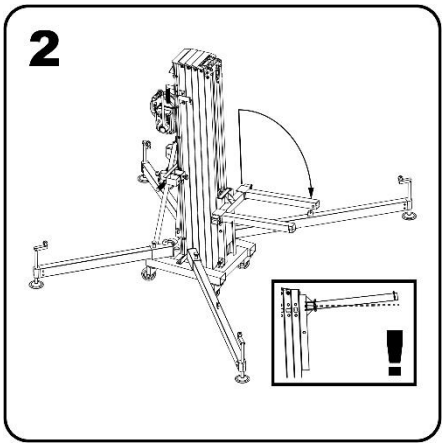

Figure 25

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

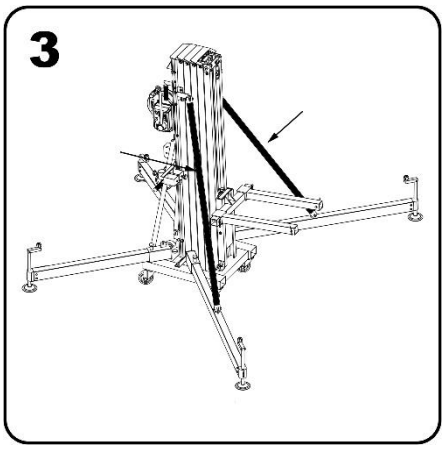

Figure 26

Place the reinforcement bars and fix it with its pins.

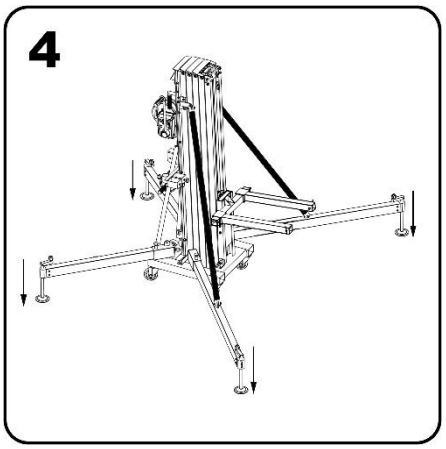

Figure 27

Place the tower in its working position and level until the bubble level is centered.

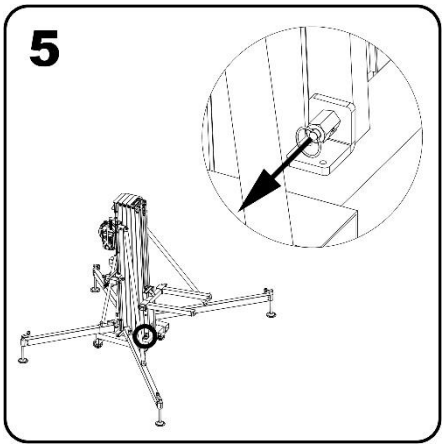

Figure 28

Unlock the security brake of the aluminum carrier.

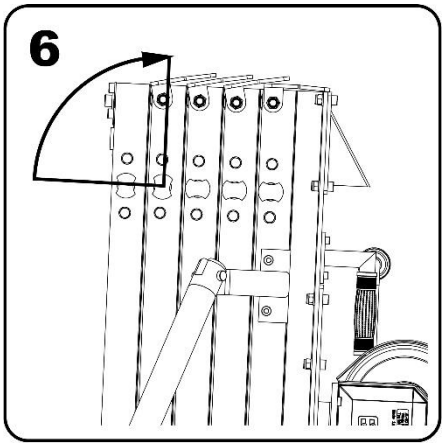

Figure 29

Unblock the security system of the mast.

Operate the winch handle to lift the carrier.

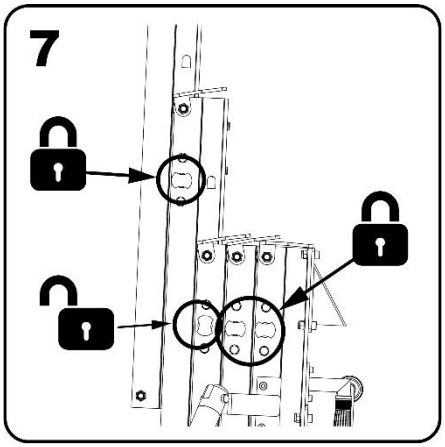

Figure 30

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.

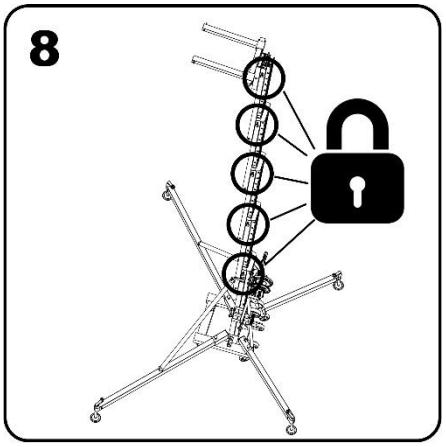

Figure 31

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

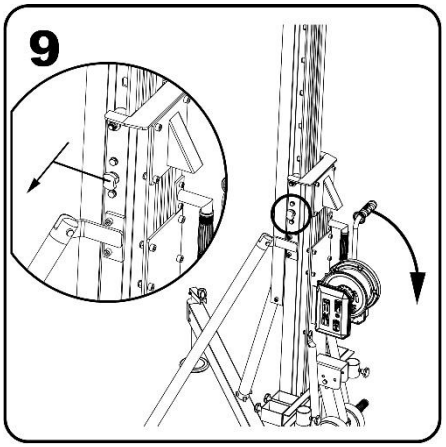

Figure 32

To lower the load. Tighten the cable and unlock the first security system. Turn the winch while maintaining the other hand unlocking security system.

Once the load has lowered and the carrier is down. Block the carrier and follow the steps from 5 to 1

ACCESSORIES

The P.A. towers has the following accessories.

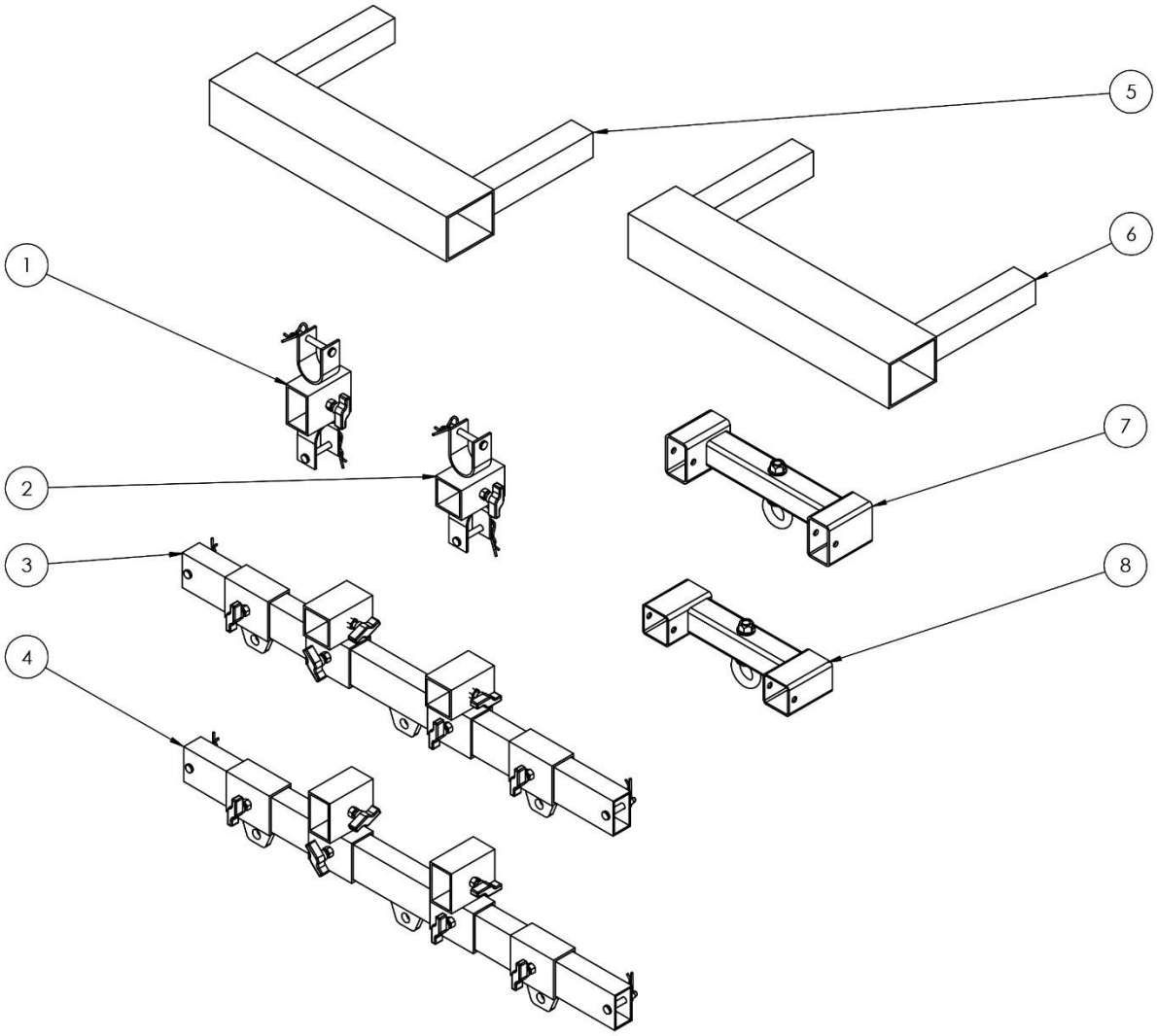

Figure 33

1	ATF2DS	**4**	ATF08PAM	**7**	ATF17PA
2	ATF1DS	**5**	ATFT200	**8**	ATF08PA
3	ATF17PAM	**6**	ATFT600		

Accessories are compatible with the following models of towers.

ACCESORIO	T600PA	T108PA	T200PA	T118PA	T117PA
ATF1DS			X	X	X
ATF2DS	X	X			
ATF17PA			X	X	X
ATF08PA	X	X			
ATFT200			X	X	X
ATFT600	X	X			
ATF17PAM			X	X	X
ATF08PAM	X	X			

Figure 34

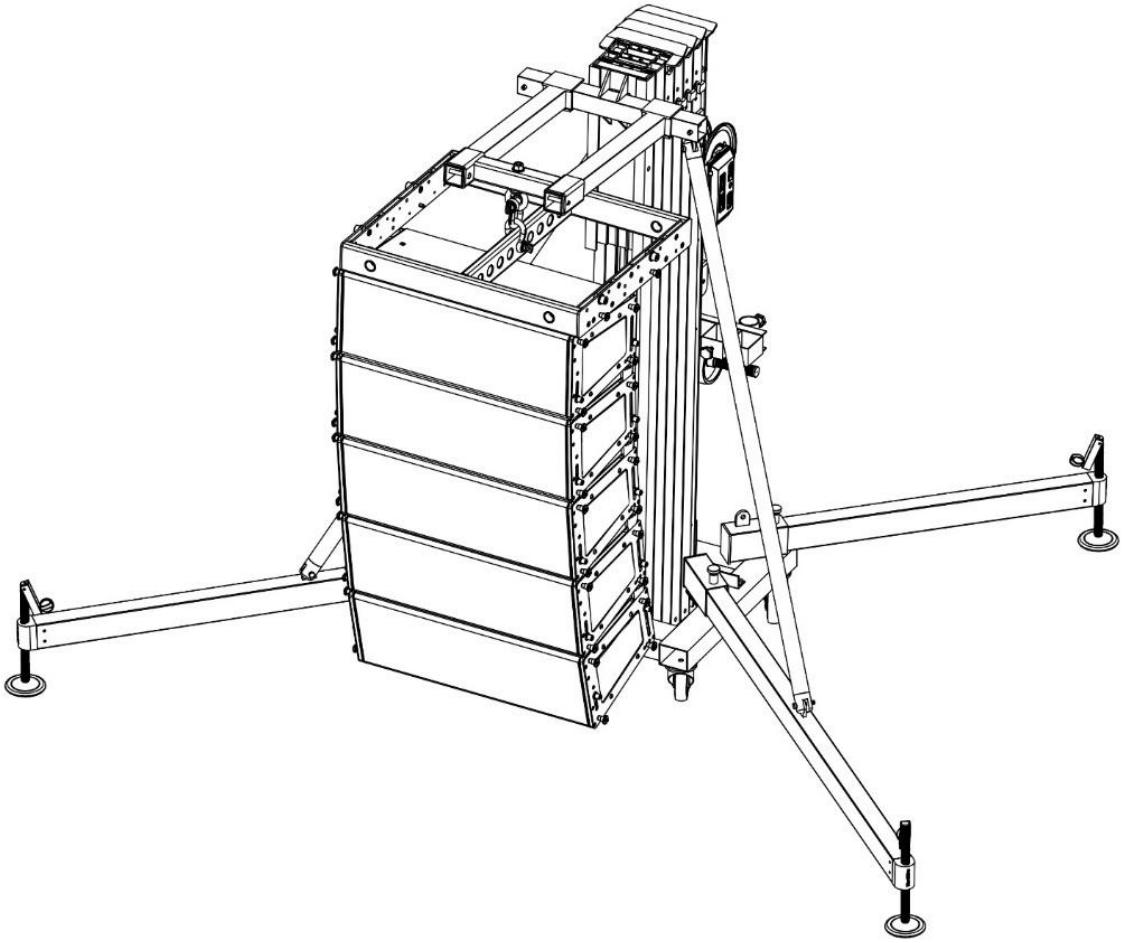

Figure 35

Example of tower T200-PA with accessory ATF17PA.

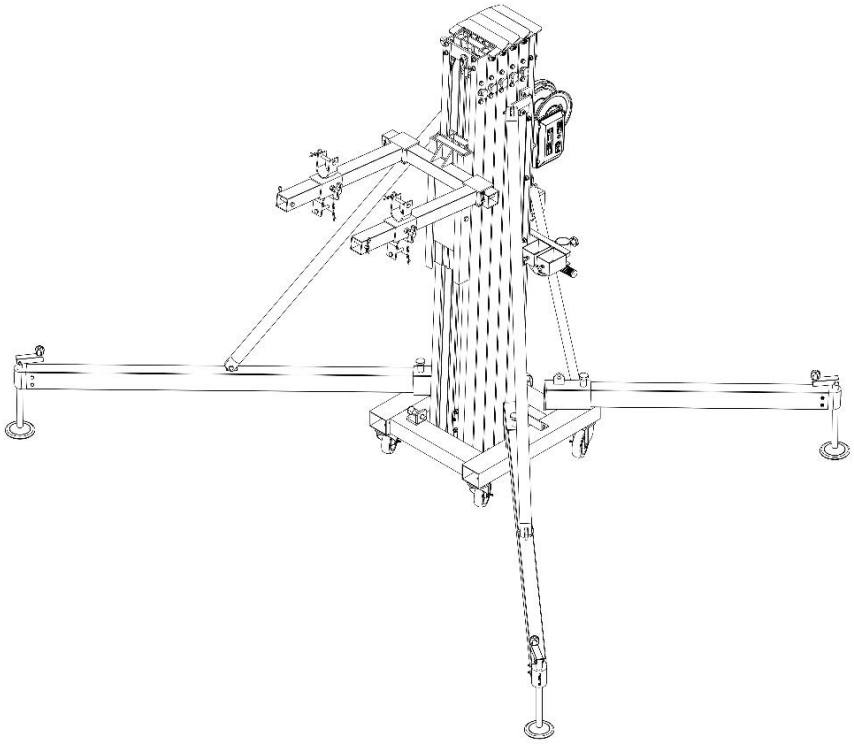

Figure 36

Example of tower T200-PA with accessory ATF1DS.

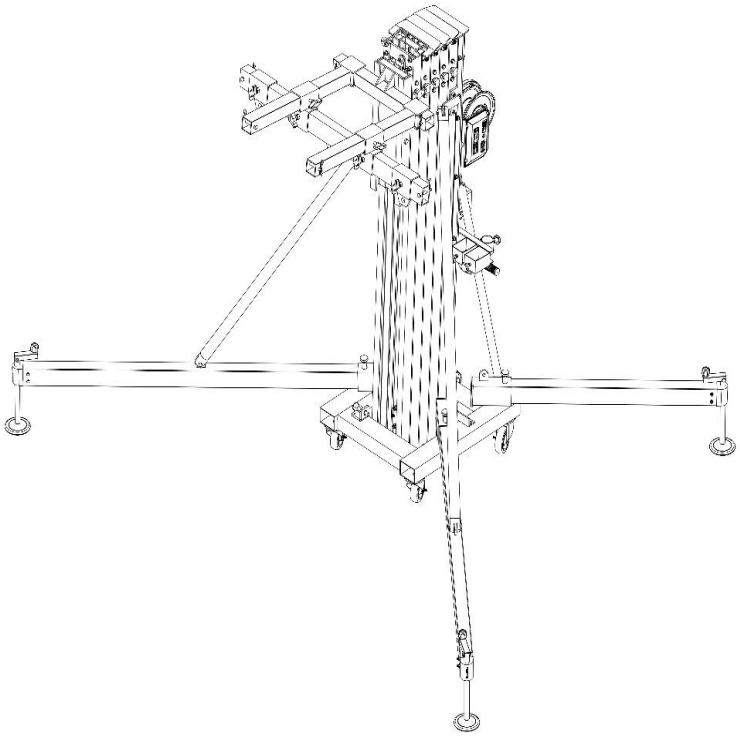

Figure 37

Example of tower T200-PA with accessory ATF17PAM.

LOAD DATA

Before placing a load, make sure that it can be raised to the maximum height of the tower. Otherwise it could cause an accident or damage the tower.

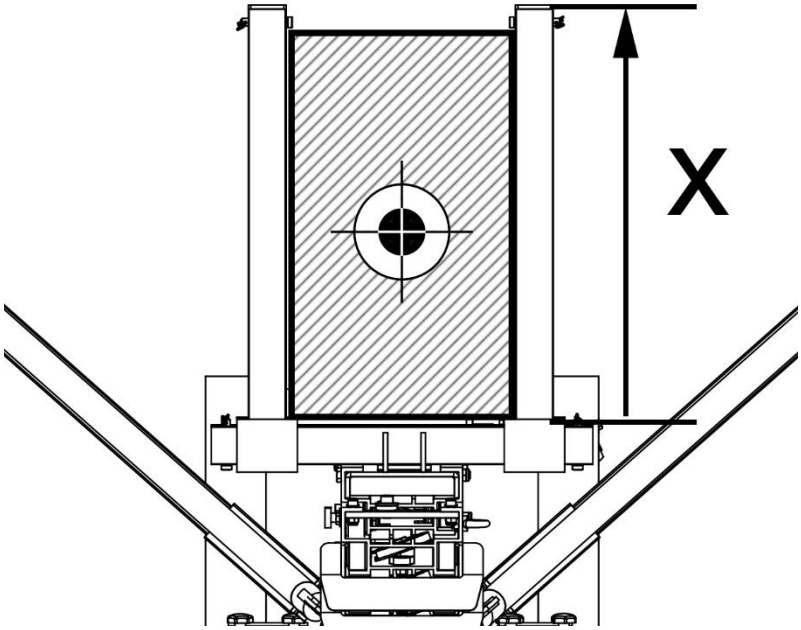

Figure 38

Place and position detal of the load.

Place of the load.

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

Load table.

P.A. lifting systems are designed so that the maximum load is placed in the central area of the horns allowing a better use of the system. Following can be found the maximum loads to be borne by each tower model for maximum working height.

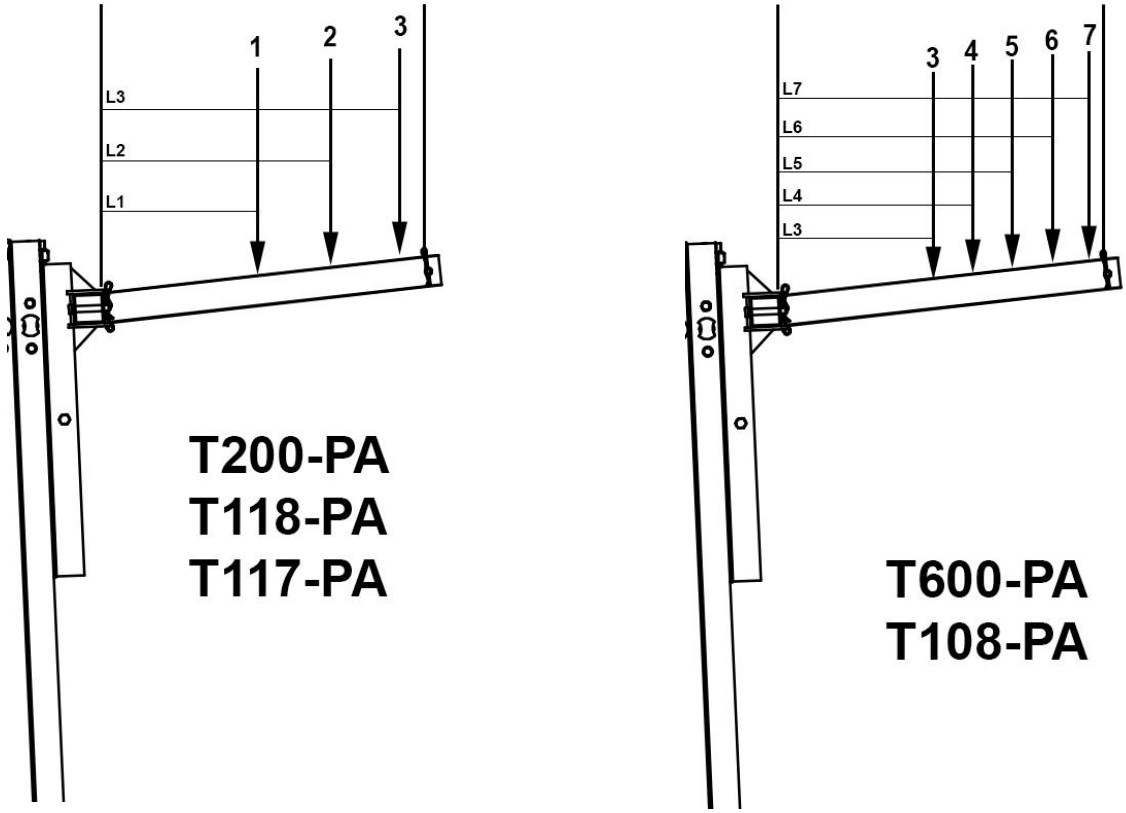

Figure 39

Detail of load place

		L1	L2	L3	L4	L5	L6	L7
	inches	12	16	20	24	28	31	35
	mm	300	400	500	600	700	800	900
T-600 PA	lbs	X	X	1323	1282	1220	1135	1028
	kg	X	X	600	582	553	515	466
T-108 PA	lbs	X	X	772	723	661	585	494
	kg	X	X	350	328	300	265	224
T-200 PA	lbs	551	504	412	X	X	X	X
	kg	250	228	187	X	X	X	X
T-118 PA	lbs	551	495	397	X	X	X	X
	kg	250	225	180	X	X	X	X
T-117 PA	lbs	551	474	378	X	X	X	X
	kg	250	215	171	X	X	X	X
		P1	P2	P3	P4	P5	P6	P7

Figure 40

Load table

Degree of compaction load.

Hard surfaces such as dirt or gravel may vary depending on the resistance relative humidity. This relative humidity varies over the day, so that the resistance of the soil to absorb tower effort loaded, too. Place a tower under these conditions may result in the ground yield below the supports of the tower. Causing a serious accident.

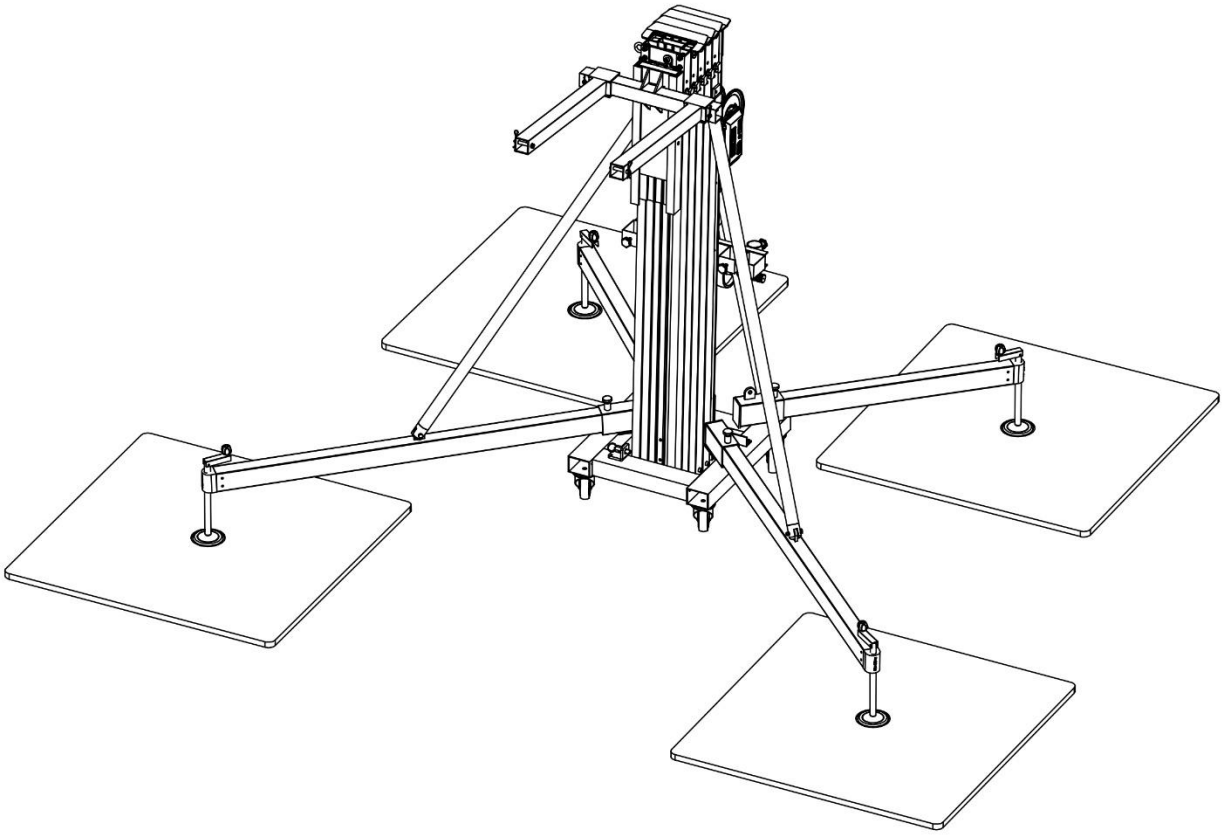

Figure 41

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.

TOWER MODEL	Side length of the plate in meters, and kg/m^2 that can support the ground.		
	150 Kg/m^2	**250 Kg/m^2**	**350 Kg/m^2**
T600PA	1.2	0.9	0.8
T108PA	1	0.8	0.6
T200PA	0.8	0.6	0.5
T117PA	0.8	0.6	0.5
T118PA	0.8	0.6	0.5

Figure 42

MAINTENANCE

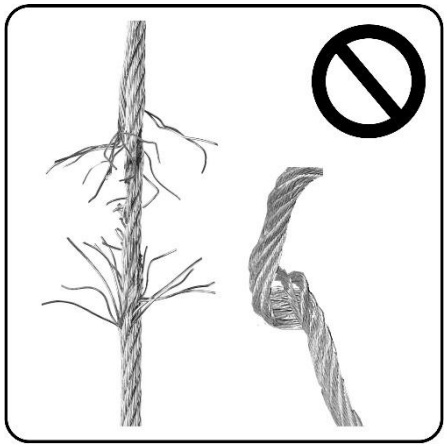

Figure 43

Cable damaged detail.

Check periodically the state of the cable. If the cable is broken must be replaced immediately with a new one. Do not use the tower with a cable shabby. If any doubt, contact with Fantek Industrial S.L.

In case of replacement of pieces. Replace only original parts Fantek Industrial S.L. Otherwise, the warranty is voided.

Is recommended a review of the tower by specialized staff of Fantek Industrial S.L. once a year.

To request any spare must attach the reference of the piece included in the spare manual that can be obtained in tecnico@fantek.net

TRANSPORT

To the transport of the towers:

- Verify that the legs stabilizers are securely fixed to the tower in the transport and they cannot be released.
- Check that the horns are well fixed with pins and cannot get out.
- Check that the carrier is properly secured to the carrier brake system.
- Check that all sections are locked.

With forklift

To transport the towers with a machine type forklift the ATCTTPA 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.

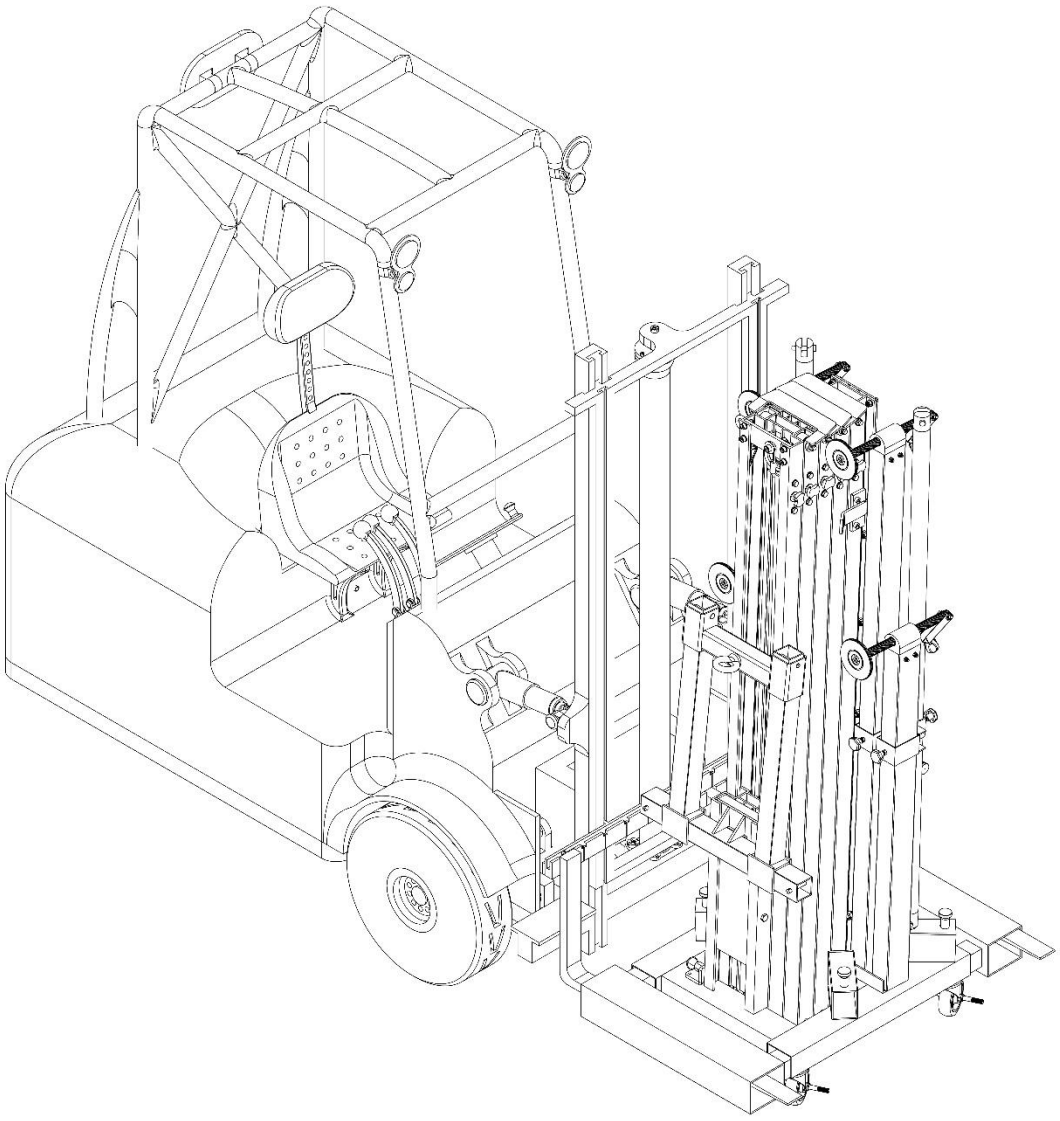

Figure 44

Detail of transport with forklift.

With truck or container.

For the transport by truck or container, always tie the tower by two points. Use ratchets not less than 1000 kg of force for the T-117PA, T-118PA and T-200PA models. Use ratchets no less than 2000 kg of force for the T-600Pa and T-108PA models.

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

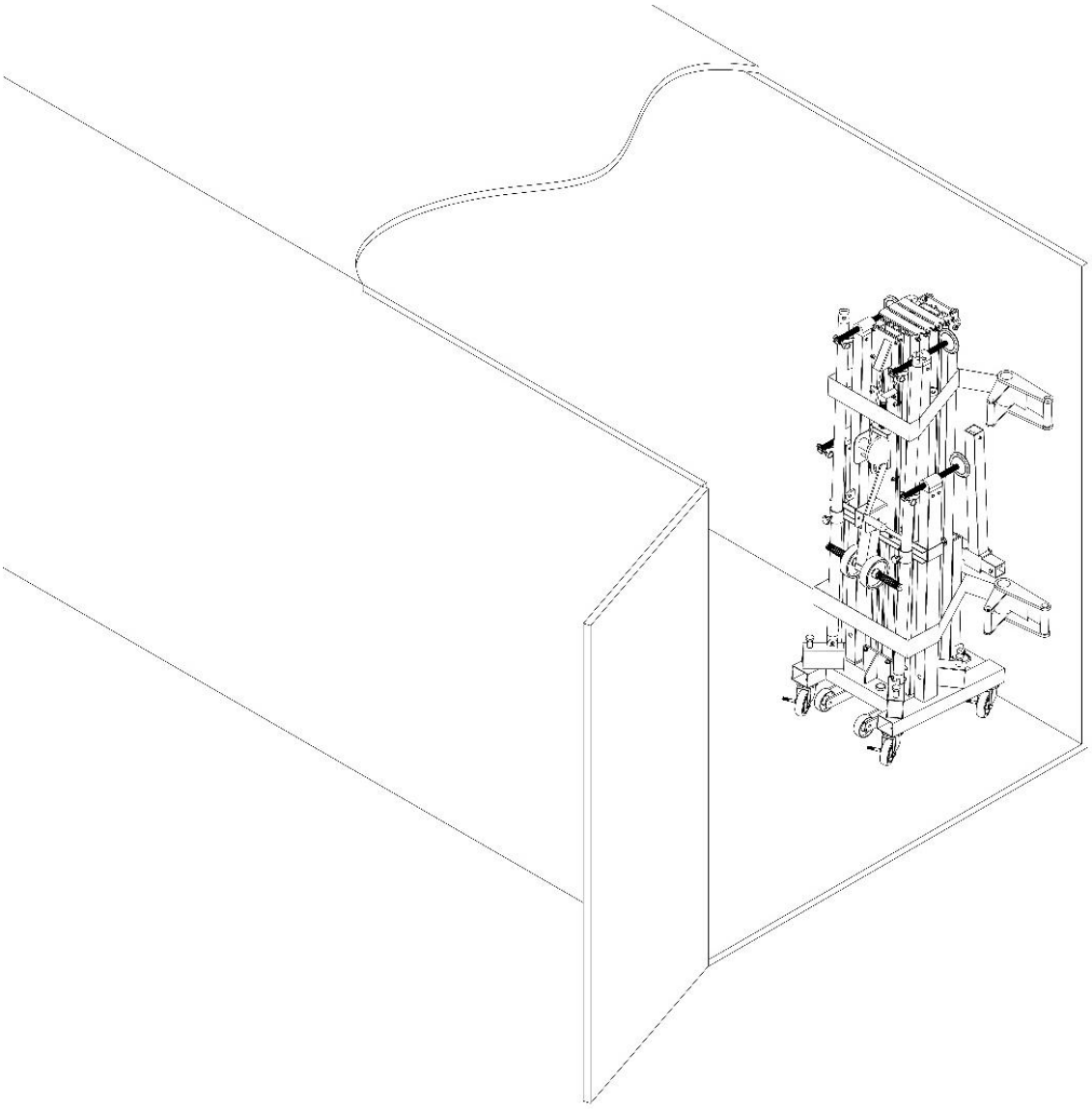

Figure 45

Detail tower place and shape holding.

In horizontal

For horizontal transport must actuate the horizontal wheel so that it protrudes from the tower. Once prepared and with the certainty that all moving parts are subject (legs stabilizers, carrier, etc ...), dump the tower between the people needed until the horizontal wheel contact with the ground.

Remember that these wheels are solid soul. So, the ground should preferably be solid enough so that the wheels can rotate with complete freedom.

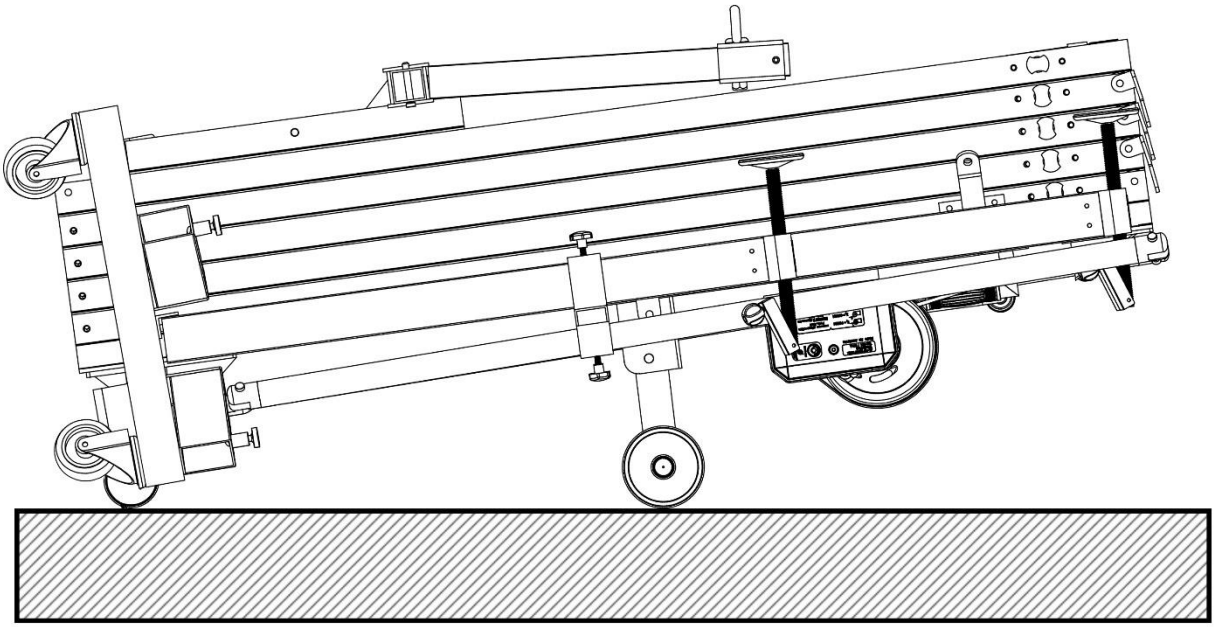

Figure 46

Detail of the tower position for transport in vertical format.

ESPECIFICATIONS

Modelo / Model	T117PA		T118PA		T200PA		T108PA		T600PA	
Altura	1900	mm	1700	mm	1700	mm	1980	mm	1980	mm
Height	74,80	in	66,93	in	66,93	in	77,95	in	77,95	in
Máxima altura	5800	mm	5000	mm	6000	mm	6000	mm	6800	mm
Maximum height	228,35	in	196,85	in	236,22	in	236,22	in	267,72	in
Anchura	520	mm	520	mm	520	mm	575	mm	575	mm
Width	20,47	in	20,47	in	20,47	in	22,64	in	22,64	in
Anchura patas desplegadas	2200	mm	2300	mm	2300	mm	2170	mm	2170	mm
Width- stabilizers lowered	86,61	in	90,55	in	90,55	in	85,43	in	85,43	in
Longitud	530	mm	530	mm	580	mm	680	mm	750	mm
Length	20,87	in	20,87	in	22,83	in	26,77	in	29,53	in
Longitud patas desplegadas	2000	mm	1760	mm	1760	mm	1830	mm	1830	mm
Length operating	78,74	in	69,29	in	69,29	in	72,05	in	72,05	in
Hueco base suelo	50	mm	50	mm	50	mm	50	mm	50	mm
Ground clearance	1,97	in	1,97	in	1,97	in	1,97	in	1,97	in
Brazo de carga	625	mm	625	mm	625	mm	945	mm	945	mm
Loading fork	24,61	in	24,61	in	24,61	in	37,20	in	37,20	in
Carga mínima	25	Kg	25	Kg	25	Kg	25	Kg	25	Kg
Minimum load capacity	55,12	Lb	55,12	Lb	55,12	Lb	55,12	Lb	55,12	Lb
Carga máxima	250	Kg	250	Kg	250	Kg	350	Kg	600	Kg
Maximum load capacity	551,16	Lb	551,16	Lb	551,16	Lb	551,16	Lb	1322,77	Lb
Peso neto	156	Kg	140	Kg	156	Kg	226	Kg	255	Kg
Net weight	343,92	Lb	308,65	Lb	343,92	Lb	498,24	Lb	562,18	Lb
Cabrestante	900	Kg	900	Kg	900	Kg	1200	Kg	1200	Kg
Winch	1984,16	Lb	1984,16	Lb	1984,16	Lb	2645,55	Lb	2645,55	Lb
Emisiones de ruido Noise emissions	84	dB	84	dB	84	dB	85	dB	86	dB

Figure 47

FANTEK®
INDUSTRIAL, S.L.

DECLARACION DE CONFORMIDAD

The lifters described in this manual meets all the specific requirements in the directive 2006/42/EC of the European Parliament and Council of the 17 of May of 2006 on the machinery directive.

Manufacturer:	FANTEK INDUSTRIAL S.L.
Adress:	Pol. Ind. El Bony. C/Del Port nº3. 46470 – Catarroja – Valencia (Spain)
Person responsible for the compilation of technical files:	Jose Vila Ortiz
Description:	Tower for lifting line array systems
T600PA MODEL	**NUM.SERIAL:** 6070082045 **MAX. LOAD:** 600 kg*
T108PA MODEL	**NUM.SERIAL:** 6060107008 **MAX. LOAD:** 350 kg*
T200PA MODEL	**NUM.SERIAL:** 6050010038 **MAX. LOAD:** 250 kg*
T118PA MODEL	**NUM.SERIAL:** 6030056022 **MAX. LOAD:** 250 kg*
T117PA MODEL	**NUM.SERIAL:** 6060142012 **MAX. LOAD:** 250 kg*

**Maximunm load at the center of the horns with the tower completely extended.*

CE

Jose Vila Ortiz, Julio 2016

BGV C1 NORM REGULATION. **Explanation**

BGV C1 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 **BGV C1** 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 BGV C1. 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 lifter towers **FANTEK BGV C1** certified, they assure the user that 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 P.A. lift systems.

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

Todos los test mencionados solo son obligatorios en aquellos países con regulación específica en la materia, aplicada mediante regulaciones o leyes. Como fabricantes, sumamente recomendamos pasar todos los tests con el objetivo de prevenir cualquier daño y mantener perfectamente nuestras torres elevadoras.

All the tests mentioned are only mandatory in those countries with specific regulations in this respect, applicable by domestic rules or laws. As a manufacturer, we highly recommend to pass all the tests to prevent any damage and to ensure a perfect operation of our lifting towers.

Alle genannten Tests sind nur in den Ländern vorgeschrieben, wo diesbezüglich spezielle Regelungen gelten, die durch inländische Vorschriften oder Gesetze Anwendung finden. Als Hersteller raten wir dringend zur Durchführung aller Tests, um jeglichen Schaden zu verhindern und einen einwandfreien Betrieb unserer Hublifte zu gewährleisten.