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**Make sure to read and fully understand this manual, and its specific notes and warnings, prior to assembly and erection of the structure.**

# **PROLYTE ST HELP MANUAL ASSEMBLY INSTRUCTIONS**

## Contents:

- 1 System Description
- 2 Limitations of use
- 3 Identification, Parts
- 4 General information
- 5 Assembly instructions
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## **1. SYSTEM DESCRIPTION**

The ST-HELP is developed as an expedient for the erection of the ST-Tower masts. It is a portable construction that can be put on in a very flexible way.

The ST-HELP can erect masts up to 12 m. of height. The use of the ST-HELP is independent from the type of truss that is used in the main grid.

The ST-HELP is constructed as a main frame and several loose tubes, which can be connected as a triangular shaped construction by means of a pen/fork attachment. This triangular construction is placed on the sleeve block on the one end and on the truss at the other and is fixed with the help of ratchet straps.

The main frame has a pulley at the top, through which the chain of the hoist is guided.

By attaching the hoist to the base section and the hook of the chain to the mast the tower can be erected easily.

A job which used to be done by at least 3 or 4 people.

Prolyte advises to use either a one tonne electrical chain hoist with variable speed control or, when that is not available, a one tonne hand operated ratchet chain hoist (lever hoist), this to reduce the dynamic forces on the whole system to a minimum.

The ST-HELP can easily be transported from the one tower to the next; just loose the ratchet straps and fix them again at the wanted place.

## **2. LIMITATIONS OF USE**

The ST-HELP is developed as an expedient for the erection of the ST-Tower masts. It is a portable construction that can be put on in a very flexible way.

The ST-HELP can erect masts up to 12 m. of height. The use of the ST-HELP is independent from the type of truss that is used in the main grid.

The ST-HELP can erect towers of the ST type; such are used in the ST Towers systems, ground support systems or ST roof systems.

### **WARNING**

The Prolyte ST-HELP is NOT designed for any other purposes.

### 3. IDENTIFICATION

The ST-Help is composed of:

	Description	Code	weight	remarks
1	Vertical frame	ACC-ST-FRAME	18,20 kg	Ladder frame with pulley block for ST help
2	Diagonal bracing	T-60-CC303,6CC	7,85 kg	Tube with 2x CCS7 Length 303,6cm
3	Horizontal bracing	T-60-CC215CC	5,75 kg	Tube with 2x CCS7 Length 215cm
4	Cross bar	ACC-ST-CROSSBAR	4,52 kg	Cross bar 100x50 for ST help
5	Fork connectors	CCS7-H-FM-90	0,46 kg	Stabiliser tubes
6	Locking pins	ACC-LP-20/60	0,10 kg	20mm locking pin for CCS7 hinge
7	tapered spigots	CCS7-704	0,04 kg	conical spigot with M12 for CCS7 connector
8	Ratchet straps	RA-5T-200OE	0,72 kg	Ratchet strap 50mm length 200cm with open end

The embossed ring on the ends of the conical coupler receivers, and stickers featuring the Prolyte logo can clearly identify the ST-HELP.

#### NOTE

Make sure the system is built only of genuine Prolyte components, which are clearly and positively identified as Prolyte products. Copies do exist, and even though they may appear to fit to Prolyte trusses, they do not have identical strength and safety characteristics.

### 4. GENERAL INFORMATION

#### NOTE

Make sure only one competent person is chosen to be responsible for and in charge of all coordinating actions and supervising the entire building, erecting and dismantling process.

#### WARNING

Even if local legislation might be lacking any demands on personal safety, it is strongly advised to use fall protection-equipment when climbing the system during building, particularly at over 2m high from ground level, when falling hazards are prominent.

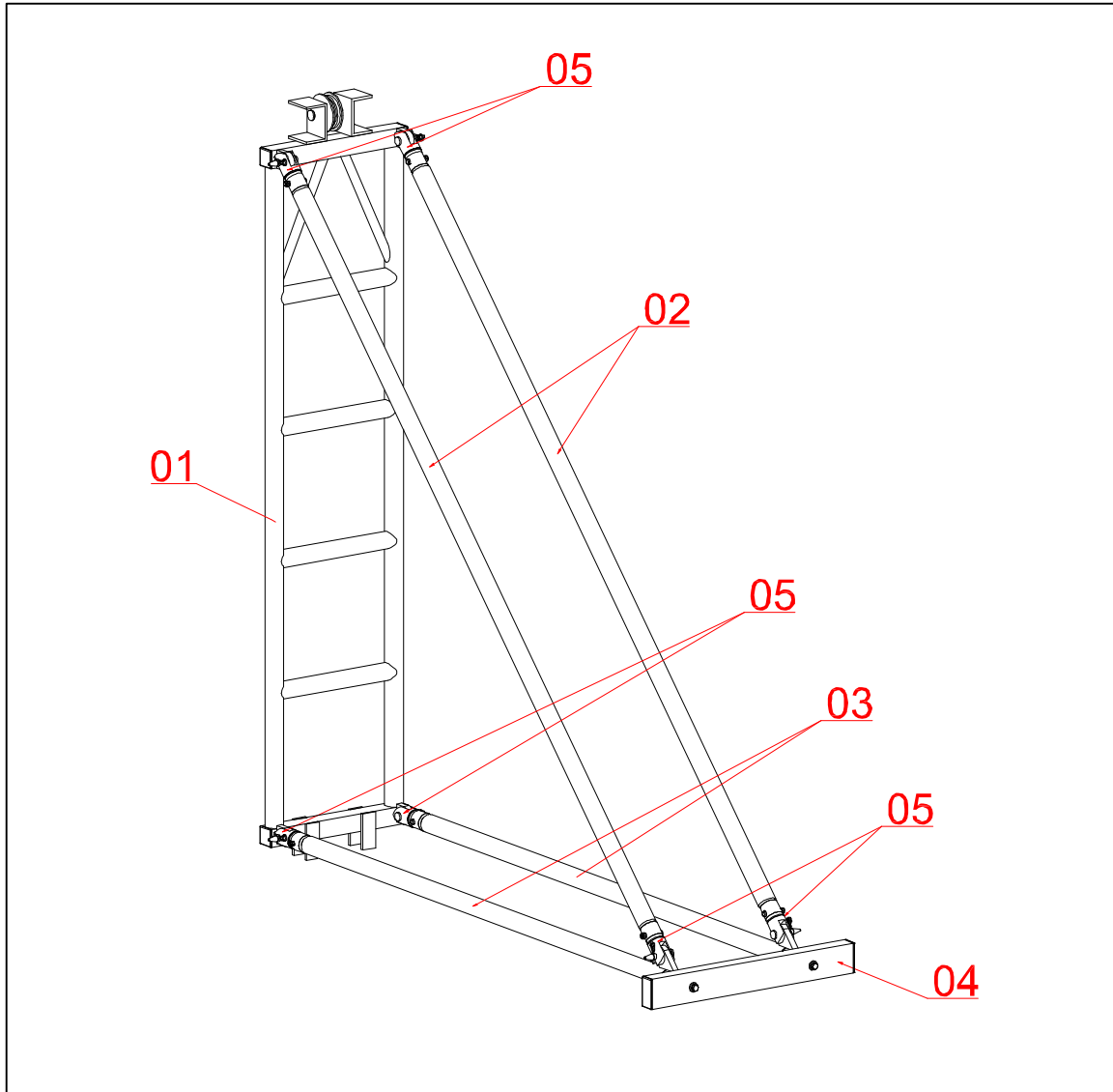
- 1) First identify all separate components and types of **Prolyte** truss to be used, ensure that you are fully conversant with this manual before you start using any of these parts, components and trusses!
- 2) Never use trusses parts or vital components such as wire ropes (or chains), that show visual damage, deformation wear or have any other reason to doubt the safe functioning within the system. Make sure to check each item before each time of use.
- 3) Check the building site for obvious hazardous objects such as power lines. Keep a safe distance of at least 8m from those in any possible direction of sway in the wind, or the distance as specified in the national or local codes or regulations for safe operation of mobile cranes. Always check the planned tower-building activity with the power-company.
- 4) Check the building site for obstacles such as lamp-posts, trees or tree-tops, overhead piping, in house constructions, or any other higher objects that might hamper erection of the towers or might endanger it when swaying in the wind or so.
- 5) Measure the area where the tower needs to be and make sure there is enough room for all components including the outriggers with the plywood padding (the free and cleared building site for each tower, needs to be app. 3.5m wide, 7.5m deep and 8m high).<sup>(1)</sup>

<sup>1</sup> Except in the situations of hazardous objects or obstacles as mentioned above.

- 6) Avoid dynamic loads. Do not turn the hoist on and off when hoisting the load in place. Lift the load as steady as possible.

## 5. ASSEMBLY INSTRUCTIONS

### Assembly of the ST-HELP



1. Vertical frame
2. Diagonal bracing
3. Horizontal bracing
4. Cross bar
5. Fork connectors

Inspect all components before using them on visual wear & tear, deformation, damage or any other shortcomings. NEVER use parts or component that are not visually correct or you suspect have been subject to other damage.

**1**

Check the vertical range for the tower erection path and the vertical path that the horizontal truss will follow during erection. Make sure nothing can obstruct a proper and safe working order.

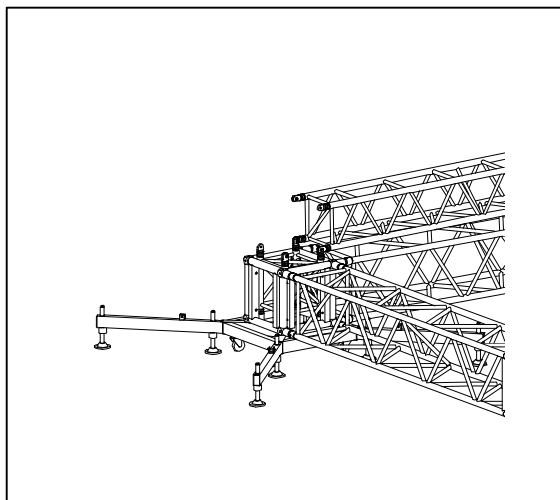
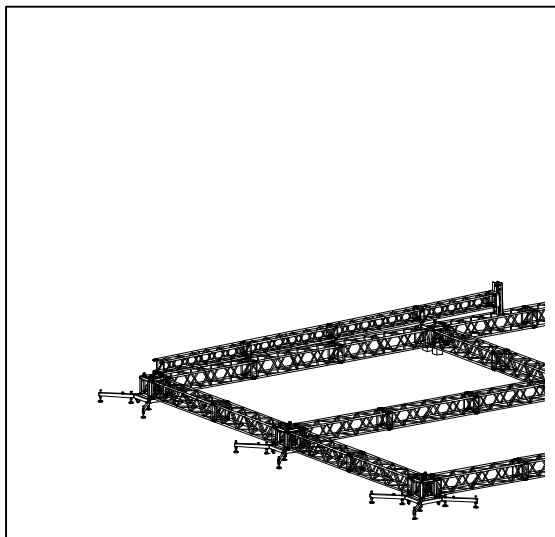
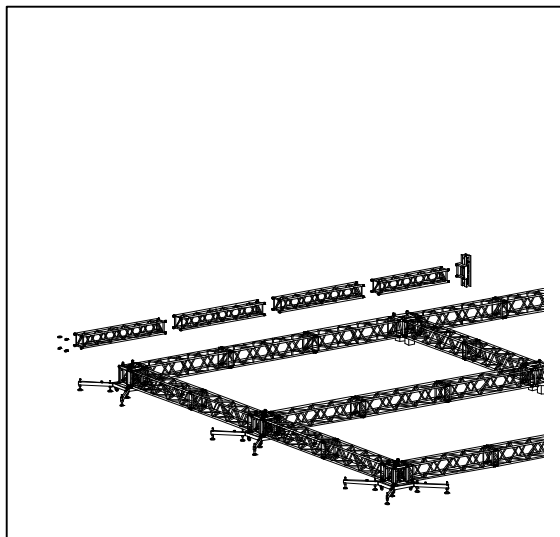
**2**

Assemble the ST tower to the needed length and connect the top block (ST-009) to it. Make sure the straight horizontal bracing is facing upwards and outwards once the tower is in position. Rotate the hinge parts if needed.

**3**

Position the St-tower on to of the horizontal truss and make sure the hinging movement goes from inward out as the tower is lifted. Check the position of the top block and the horizontal bracing again.

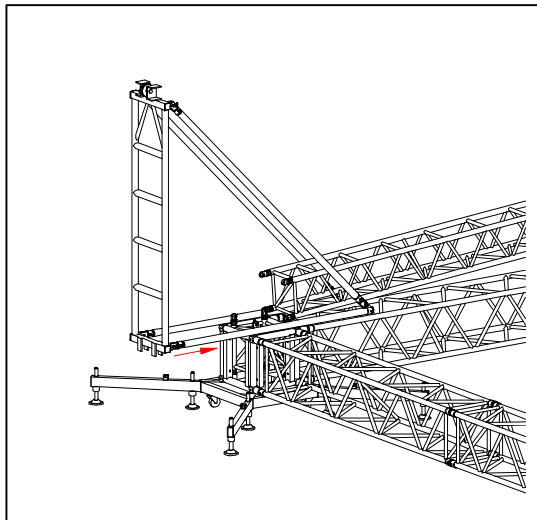
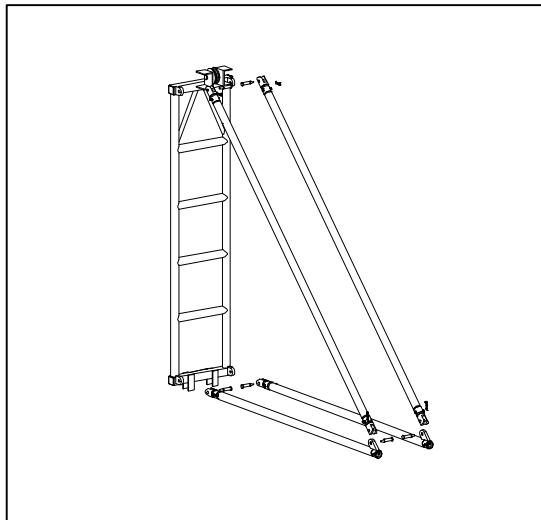
**4**



Connect the 2 diagonal stabilising tubes to the attachment on top of part one.

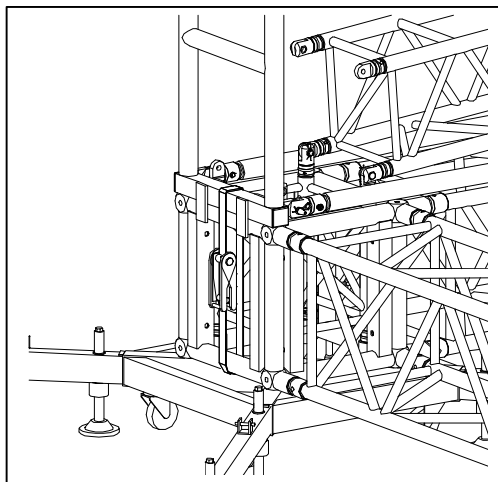
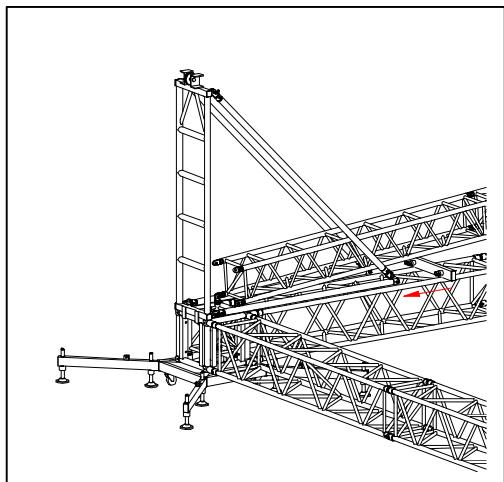
Place the ST-HELP on the sleeve block of the tower that is to be erected

5



Put the horizontal tubes in between and connect the cross bar by means of a ratchet strap to the horizontal truss of the main grid.

6

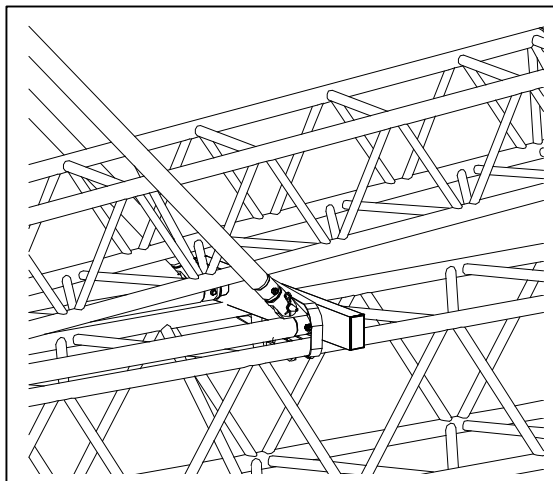


**NOTE**

Make sure that part 1 is firmly connected to the sleeve block and the truss of the horizontal main grid.

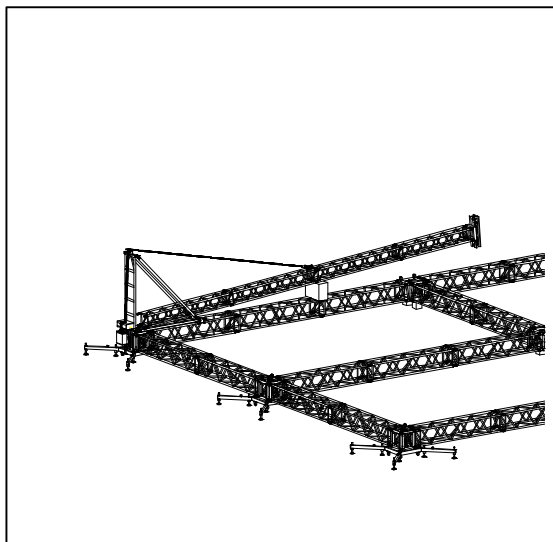
Lift the tower by hand at the top block side  
And place a supporting rest of ca. 50-cm  
high at a position of 6 m. away from the  
hinge part underneath (e.g. a flight case).  
Thus an angle of 7 degree is created. This  
will decrease the initiate lifting forces. The  
higher the top block rests above the main  
grid truss, the better. The 7-degree initial  
angle is mandatory.

**7**



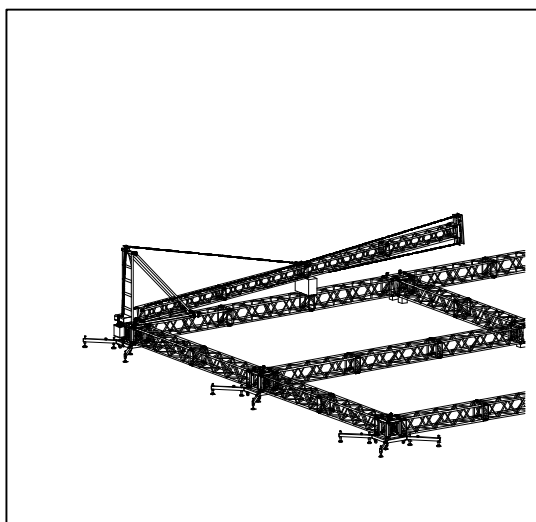
After the tower is connected at the two  
lower hinge parts; place the hoist chain over  
the top pulley of the ST-HELP.  
Connect the hoist to the base section of the  
tower. NOT to the ST-HELP.  
Attach the chain hook of the lifting chain by  
use of a 150 cm round sling at a node point 6  
m. away from the hinge parts.

**8**



The chain of the hoist that will be used to lift  
the main grid should be guided along the  
mast and over the top block and fixed at the  
lower side of the mast (this will become the  
inward side). Make sure the chain hook will  
be within reach, once the tower is erected.  
Make sure the chain can't fall of and leave  
enough slack chain to make erection  
possible.

**9**

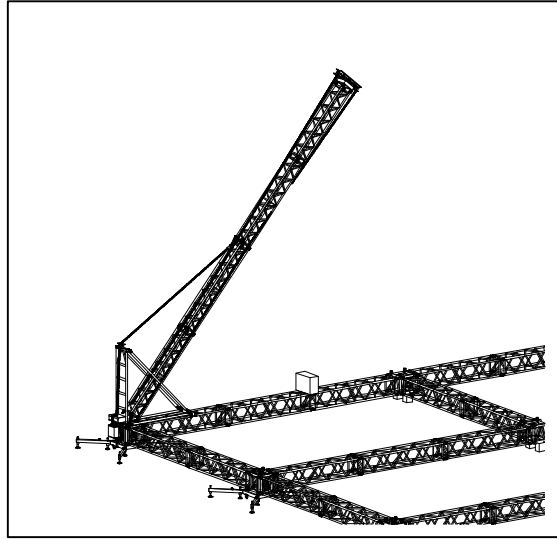


Switch the hoist that will be used to lift the tower on and bring the chain to tension, act similar when a lever hoist is used. When the chain is tight, start lifting the tower.

**10**

Lift the tower slowly and gradually, but without interruptions, by means of the hoist. Keep a constant movement and do NOT switch the hoist on and off. The use of a speed control is advised. Never stop the hoist during the lifting process.

**11**



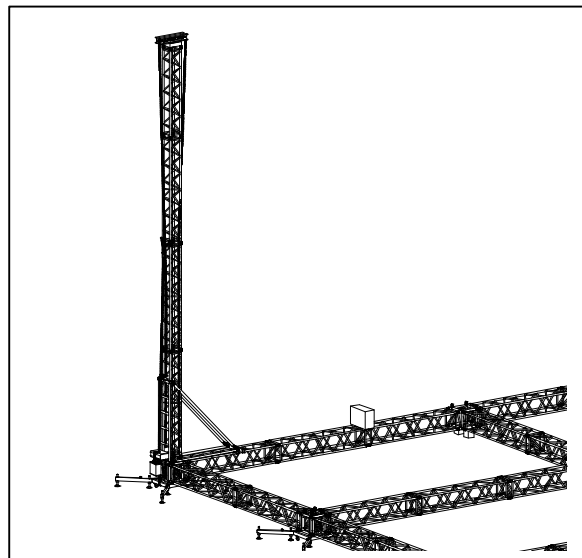
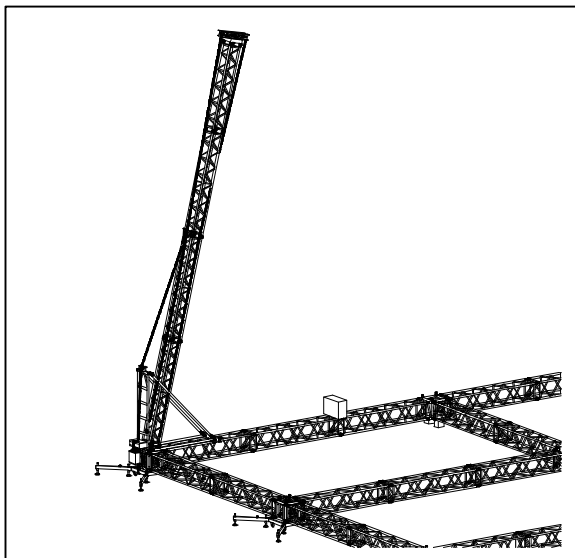
**NOTE**

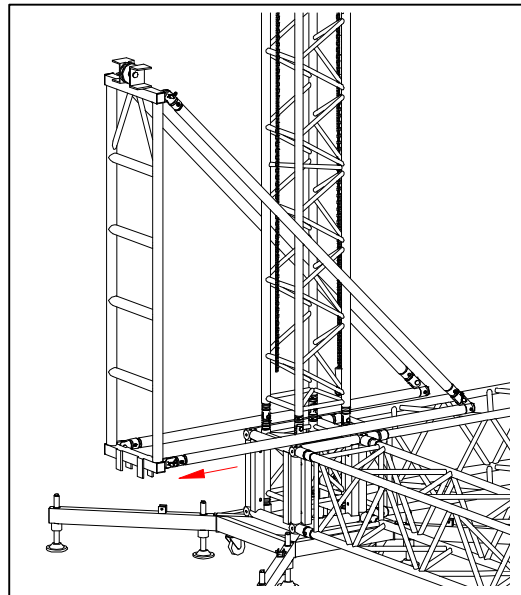
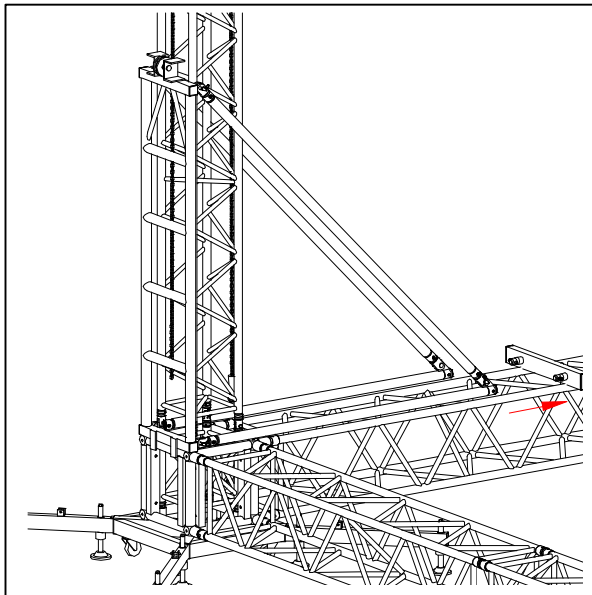
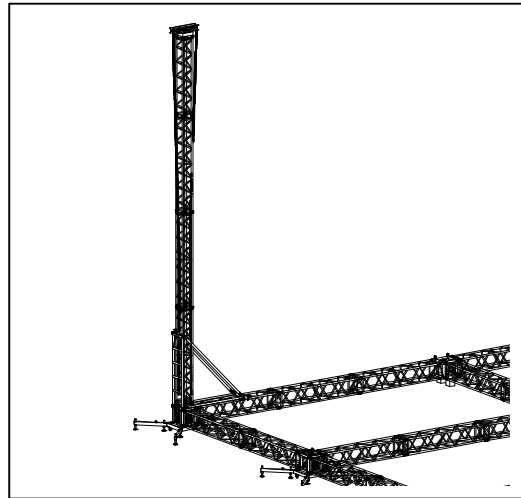
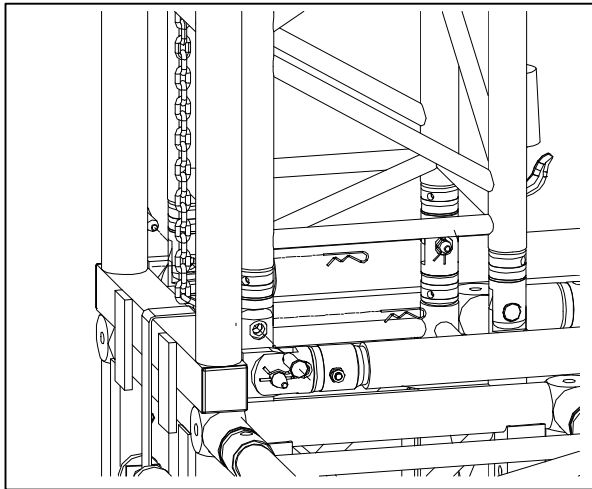
High dynamic loading will result in dangerous overloading of various components. Without the use of a variable speed control the top section will reach high angle speeds as a result of the fixed speed of the hoist. The use of a speed control is therefore highly preferred.

When the tower is almost erect you can easily push the tower in its end position. Place the locking pins in the hinge parts. Then release the tension on the hoist.

Release the tension on the chain and remove the ST-HELP

**12**





Fix the hoist that will lift the main grid to the lower chord of the sleeve block, using a round sling of the appropriate length.

Repeat the whole procedure until all towers are erect.

**13**

**WARNING:**  
**NOT FOLLOWING THE GUIDELINES IN THIS  
MANUAL MAY CAUSE DANGER, PROPERTY  
DAMAGE, INJURIES OR EVEN DEATH.**

## 6. SYSTEM DIMENSIONS

