

DUAL-AXIS SOLAR TRACKER(PRO) Manual

I. General Information

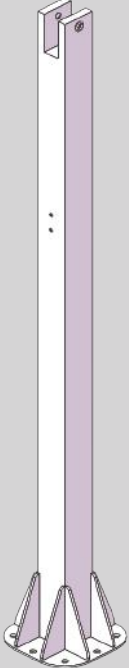
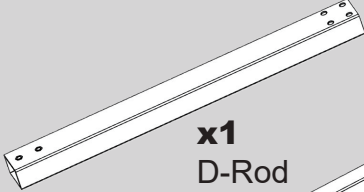
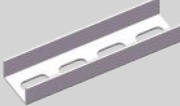


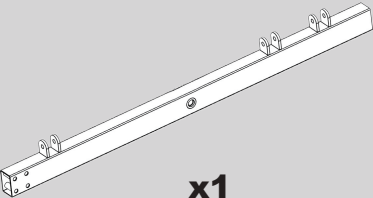
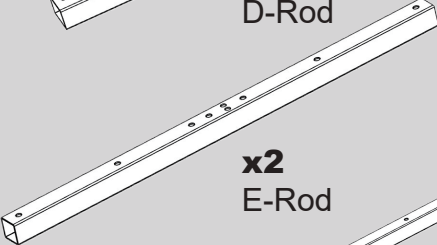
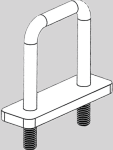


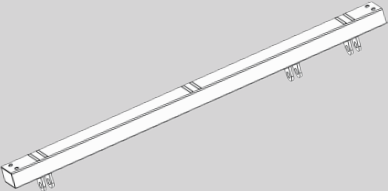
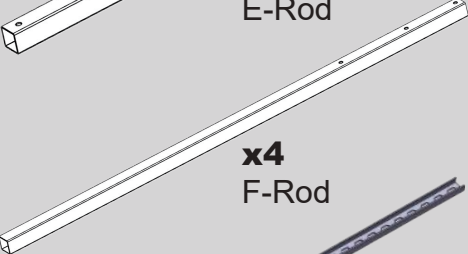



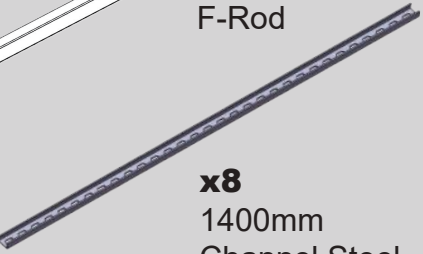












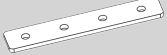
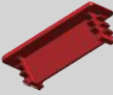

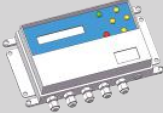


1.Safety Precautions

- For the proper use and maintenance of this product, please read carefully and understand this instruction before installation.
- Make sure that the tracker system is installed on a solid concrete ground which is strong enough to hold the weight of all the tracker and solar panels.
- Make sure all the bolts and nuts are firmly tightened during the installation.
- To adjust the angle of the solar panels, loosen the side clamps and middle clamps first and then move the panels carefully. **DO NOT** adjust the solar panels by force.
- During long-time usage, some components might be loosened or corroded. For safety, please check the tracker regularly.
- In stormy weather with a wind speed greater than 20.8m/s, it is best to remove the solar panels to prevent damage to the bracket. @ 38mph the DAT will return to a flat horizontal level position. The system can withstand 2400 Pa wind load and 4200 Pa snow load.

- Please disconnect the power supply before making any wiring operations on the controller to prevent short circuits and damage to the controller.
- The wind speed sensor should be installed in a high place that is easy to detect the nearby wind (it should not be installed directly on the ground and is recommended to be at least 1.5 meters above the ground). There should be no large objects nearby that hinder the wind flow. The installation site should be chosen to prevent water accumulation, to avoid damage to the sensor from rainwater. And the leads should be organized and fixed to avoid blocking the rotation of the wind cups.
- When the power supply cannot meet the power required by the actuator, the controller will automatically restart. Please check whether the power supply voltage is too low or whether the actuator load exceeds the standard.
- The controller has been preset with all parameters by the factory. However, due to certain differences in the actuator's own operating speed, load-bearing capacity, environmental resistance, power supply voltage, and the installation position of the solar panel, the solar tracker may not be completely horizontal when executing night or wind protection modes. If necessary, please adjust the data of T3, T4, T5, T9, T10, and T11 according to the instruction manual.

- When the air humidity is high or the temperature difference between day and night is significant, a small amount of moisture may condense inside the sun sensor's cover, but it will not damage the device. The control board has been treated for protection, and the moisture will naturally evaporate after being exposed to the sun, without affecting the function.
- When the sun is obscured by clouds of uneven thickness, the light that penetrates through the clouds to the ground is of varying intensity in different directions. The sun sensor may detect the maximum power point that is inconsistent with the actual position of the sun, causing the solar tracker not to follow the sun's movement correctly. This situation is normal, and the tracker is still in the best power generation state at this time. This phenomenon may occur on cloudy, rainy, or overcast days.

II.Packing List

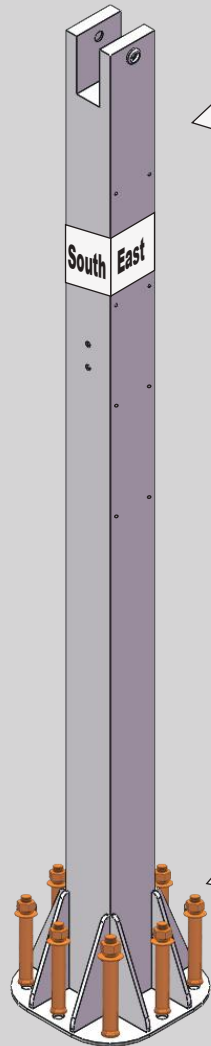
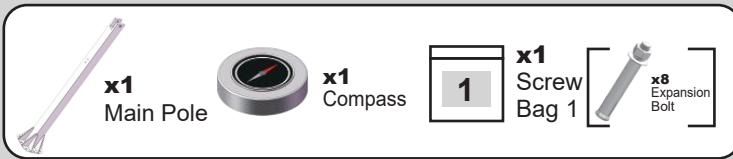
	x1 Main Pole		x1 D-Rod		x4 U-Shaped Connector		x1 M14*110 Hex Socket Cap Bolt		x10 M10*100 Hex Socket Cap Bolt
	x1 B-Rod		x2 E-Rod		x4 U-Bolt		x3 M10*60 Latch		x12 M10*80 Hex Socket Cap Bolt
	x1 C-Rod		x4 F-Rod		x4 Linear Actuator Stand		x3 R-Type Cotter Pin		x1 M14 Flange Nut
	x8 1400mm Channel Steel		x1 Sunlight Sensor Rack		x17 M10*20 Hex Socket Cap Bolt		x39 M10 Flange Nut		x8 M4*10 Round Cap Bolt
	x1 350mm Linear Actuator		x32 Solar Panel Clamp		x8 M8*20 Hex Socket Cap Bolt		x20 Flat Washer		x64 M8 Flange Nut
	x1 200mm Linear Actuator		x8 Expansion Bolt		x8 M6 Flange Nut		x1 Controller Bracket		x12 41*21mm Cap
	x1 Wind Speed Sensor		x1 Solar Tracker Controller		x1 Compass		x1 Sunlight Sensor		

For the convenience of display, some of the bolts would be shown as a simplified figure. Please refer to the material box on the top of every step.



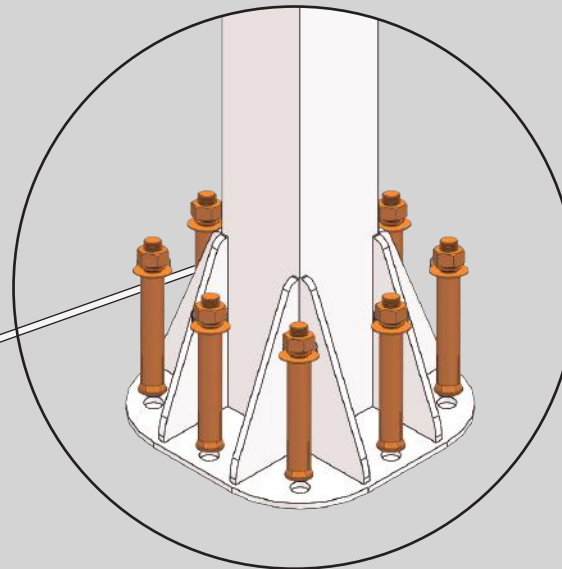
III. Installation

1



There are 4 signs on the main pole that indicate directions (South, North, West, East). Use the compass to place the main pole correctly so that the tracker can track the sun properly.

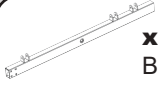
The orientation of the main pole in the Northern Hemisphere should be opposite to that in the Southern Hemisphere.



The main pole must be installed on solid concrete ground or pier with the expansion bolts.
The solid ground base must be larger or equal to a 600*600*700mm cube.


Recommended concrete material (kg/m³):
Cement(450kg)+Water(183kg)+Sand(600kg)+
Gravel (1,192kg)


2

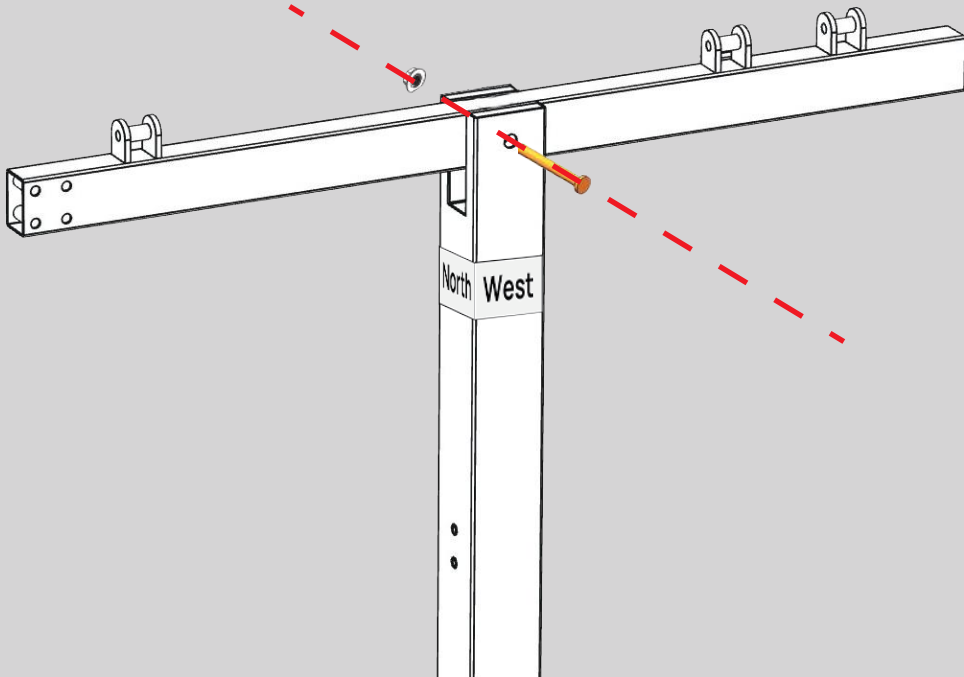
**x1**
B-Rod

2


x1
Screw
Bag 2

**x1**
M14*110
Hex Socket
Cap Bolt

**x1**
M14
Flange Nut





3

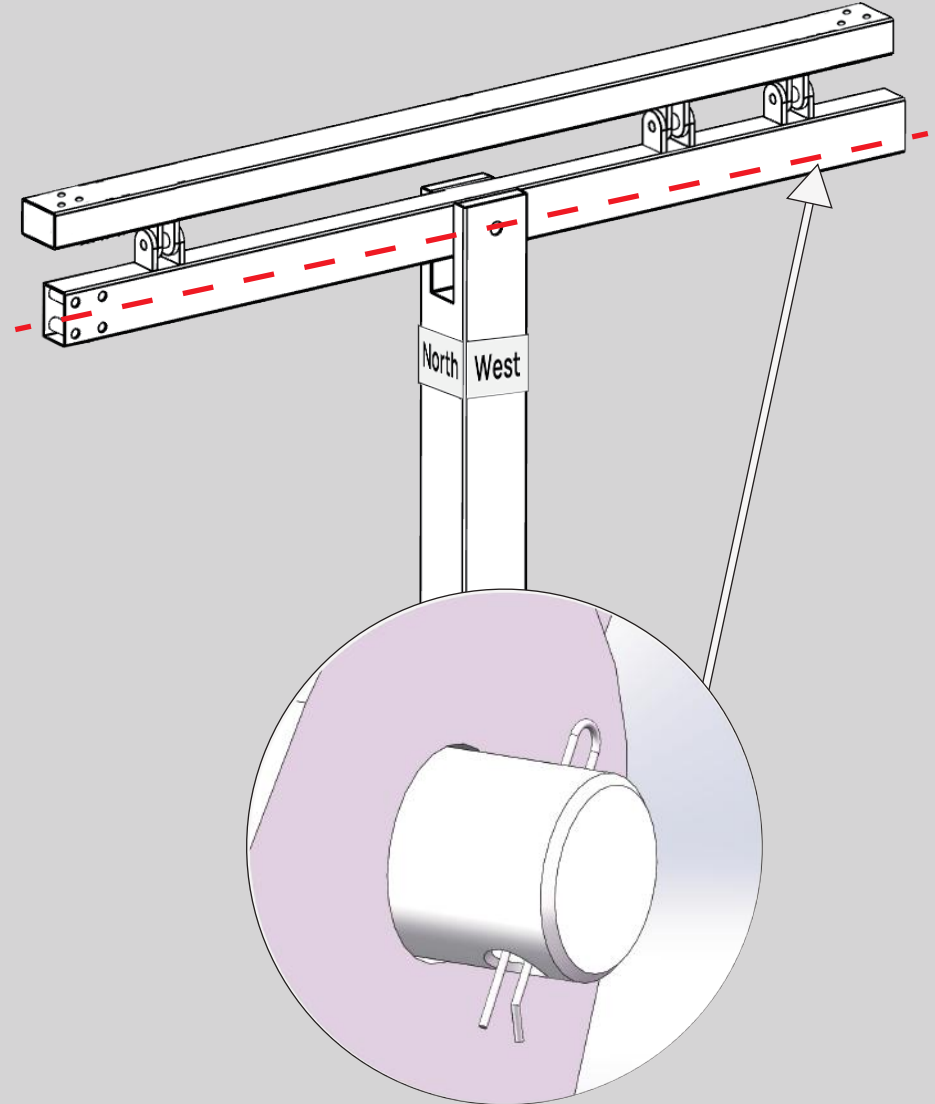
**x1**
C-Rod

3


x1
Screw
Bag 3


**x3**
M10*60
Latch


**x3**
R-Type
Cotter Pin




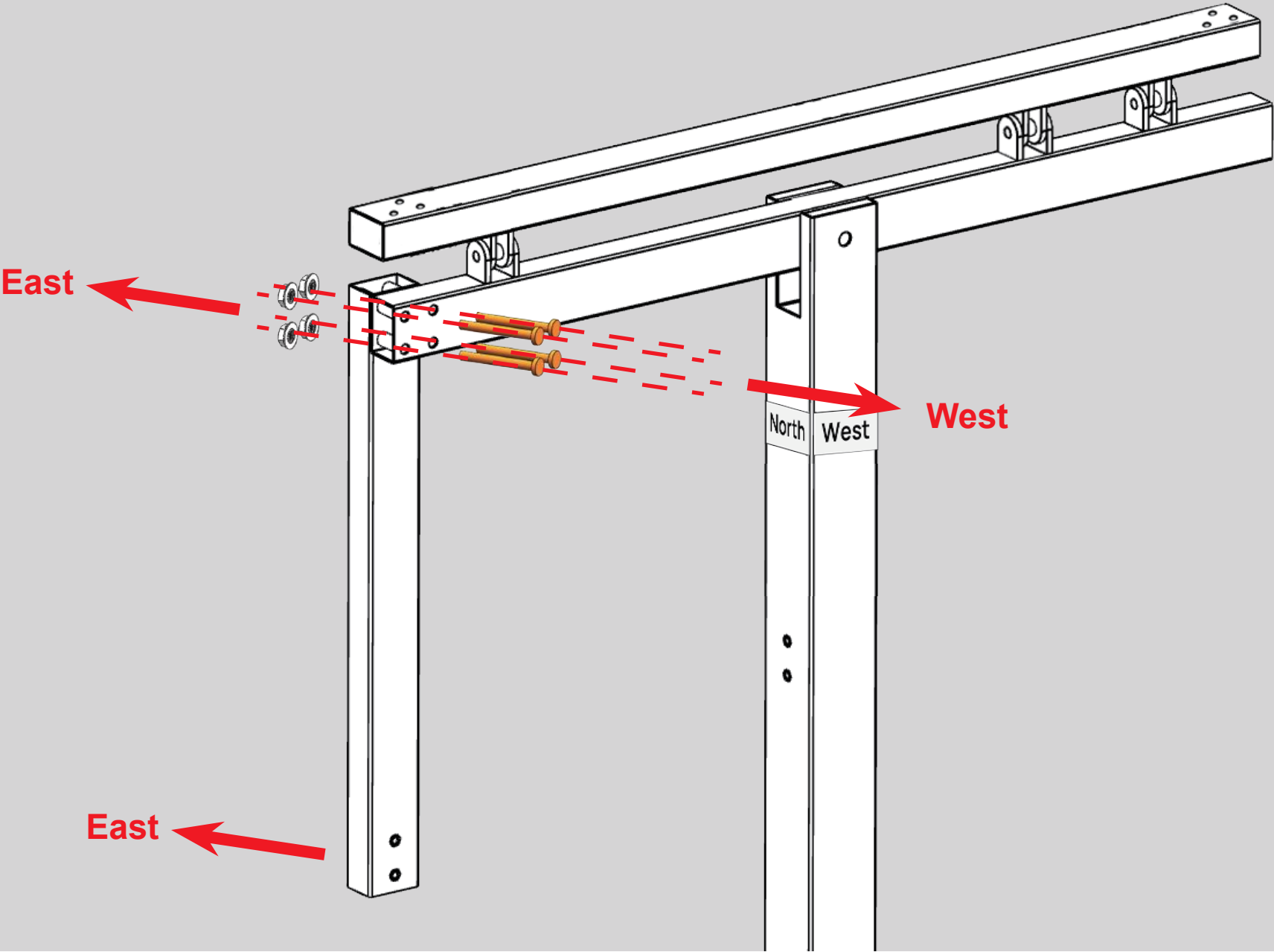
4

**x1**
D-Rod

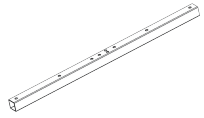
**x1**
Screw Bag 4

**x4**
M10*100
Hex Socket
Cap Bolt

**x4**
M10
Flange Nut



5



x2
E-Rod



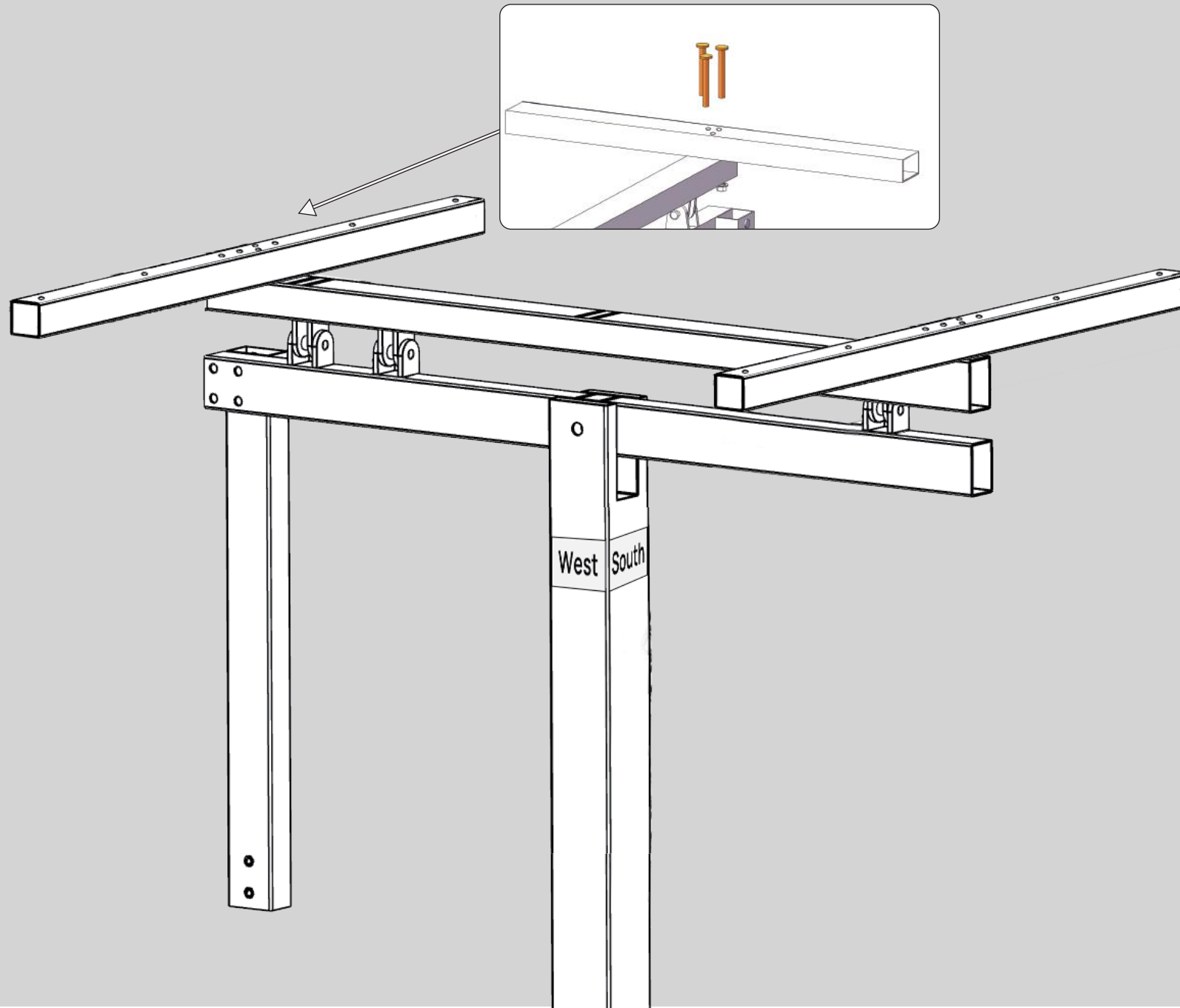
x1
Screw
Bag 5



x6
M10*100
Hex Socket
Cap Bolt



x6
M10
Flange Nut



6

x1
200mm
Linear Actuator



x2
Linear Actuator
Stand



x2
M6*30 Latch



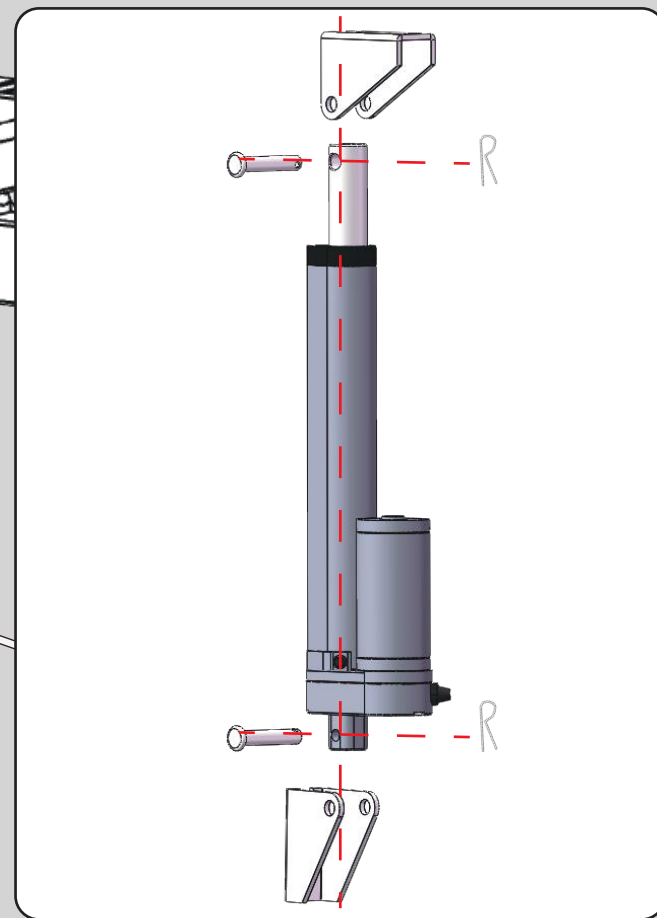
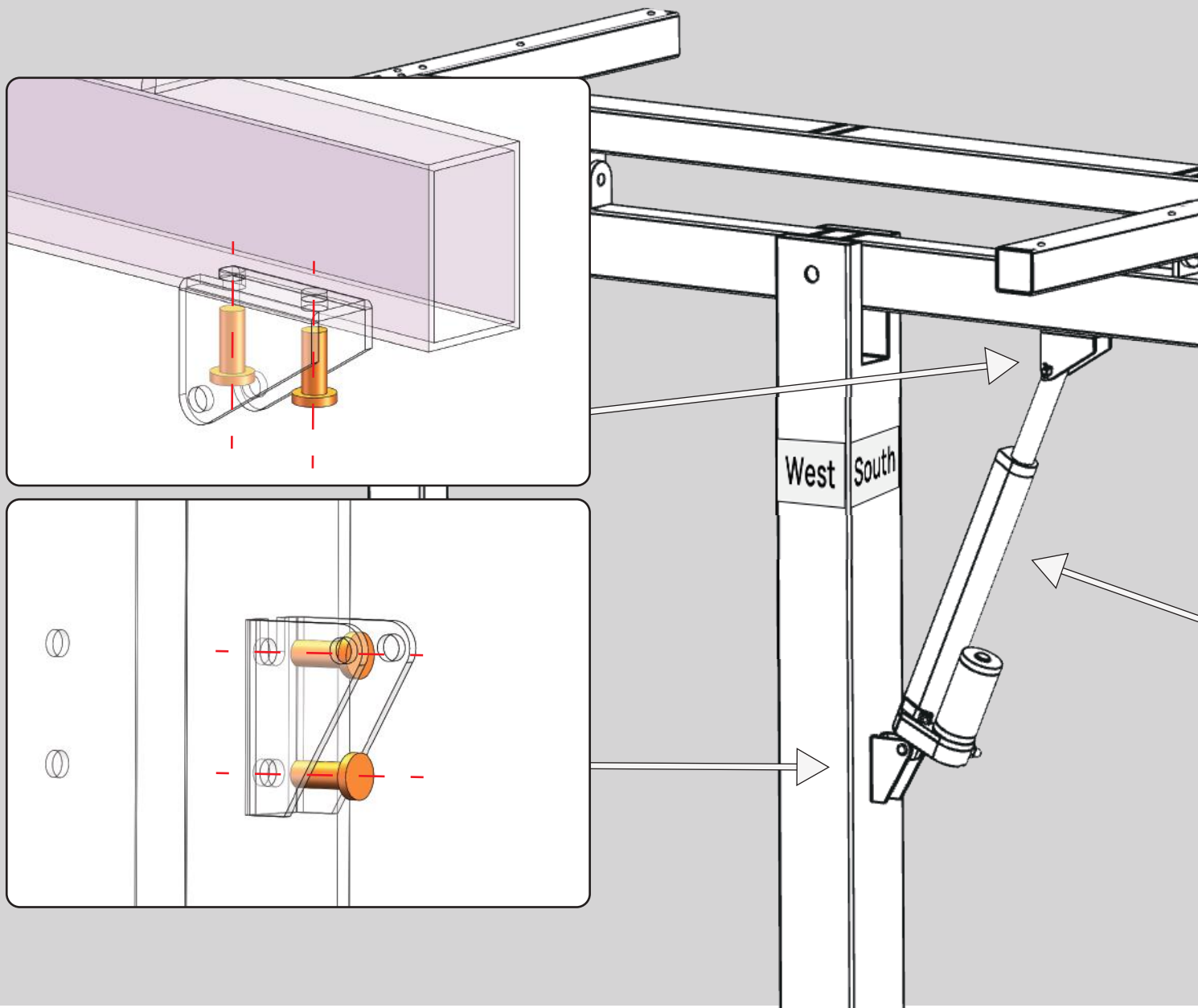
x2
R-Type
Cotter Pin



x1
Screw
Bag 6



x4
M8*20
Hex Socket
Cap Bolt



7



x1
350mm
Linear Actuator



x2
Linear Actuator
Stand



x2
M6*30 Latch



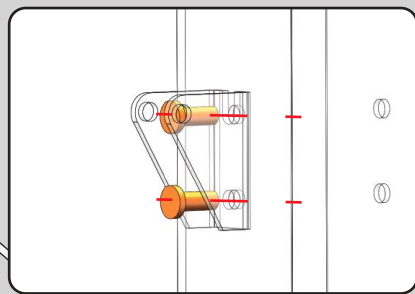
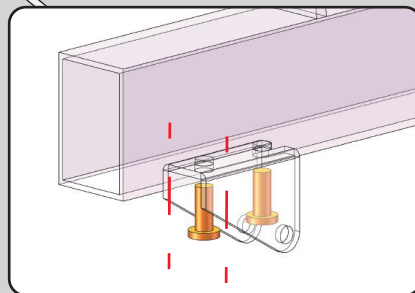
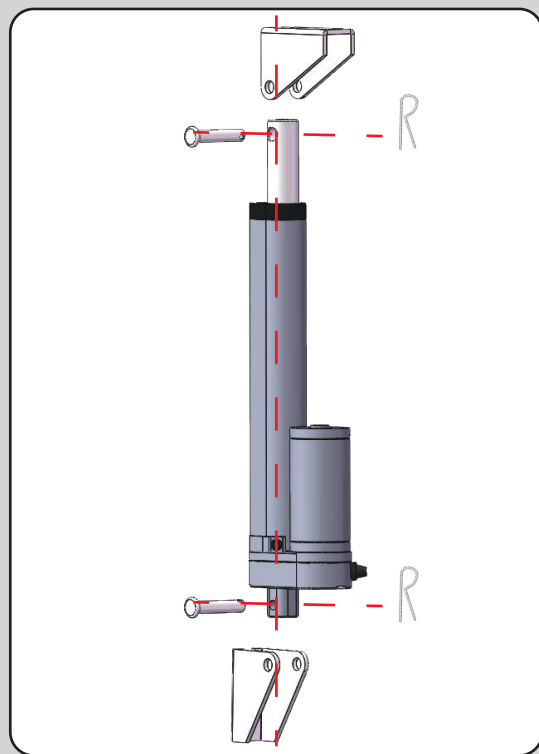
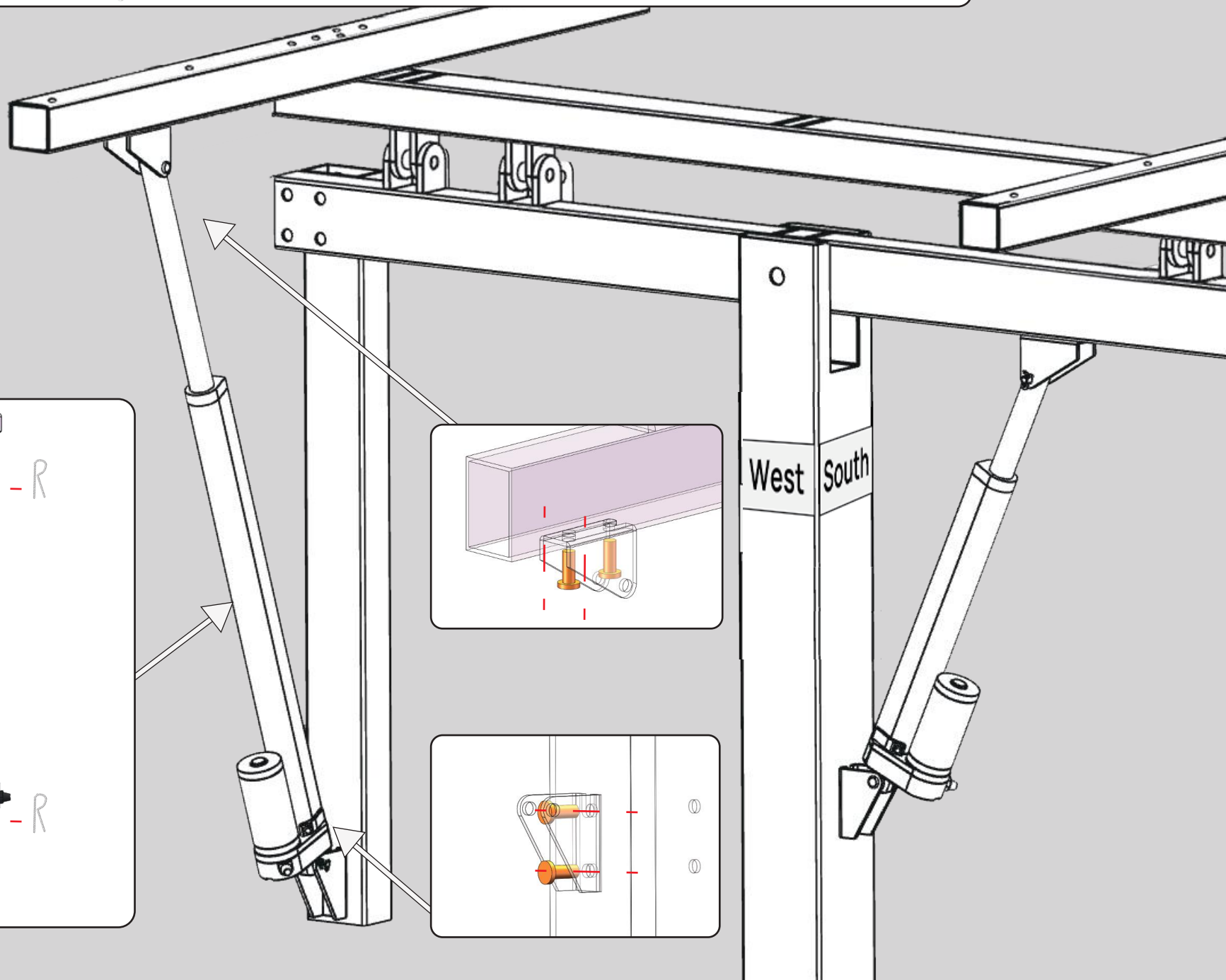
x2
R-Type
Cotter Pin



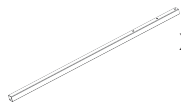
x1
Screw
Bag 7



x4
M8*20
Hex Socket
Cap Bolt



8



x4
F-Rod



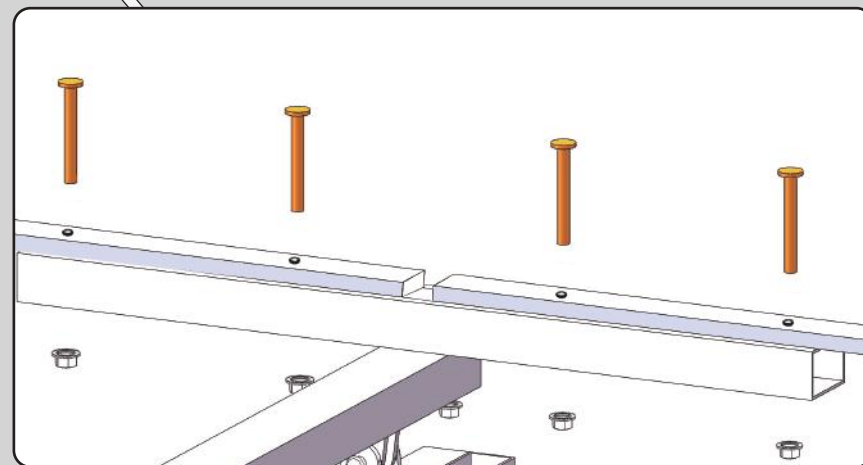
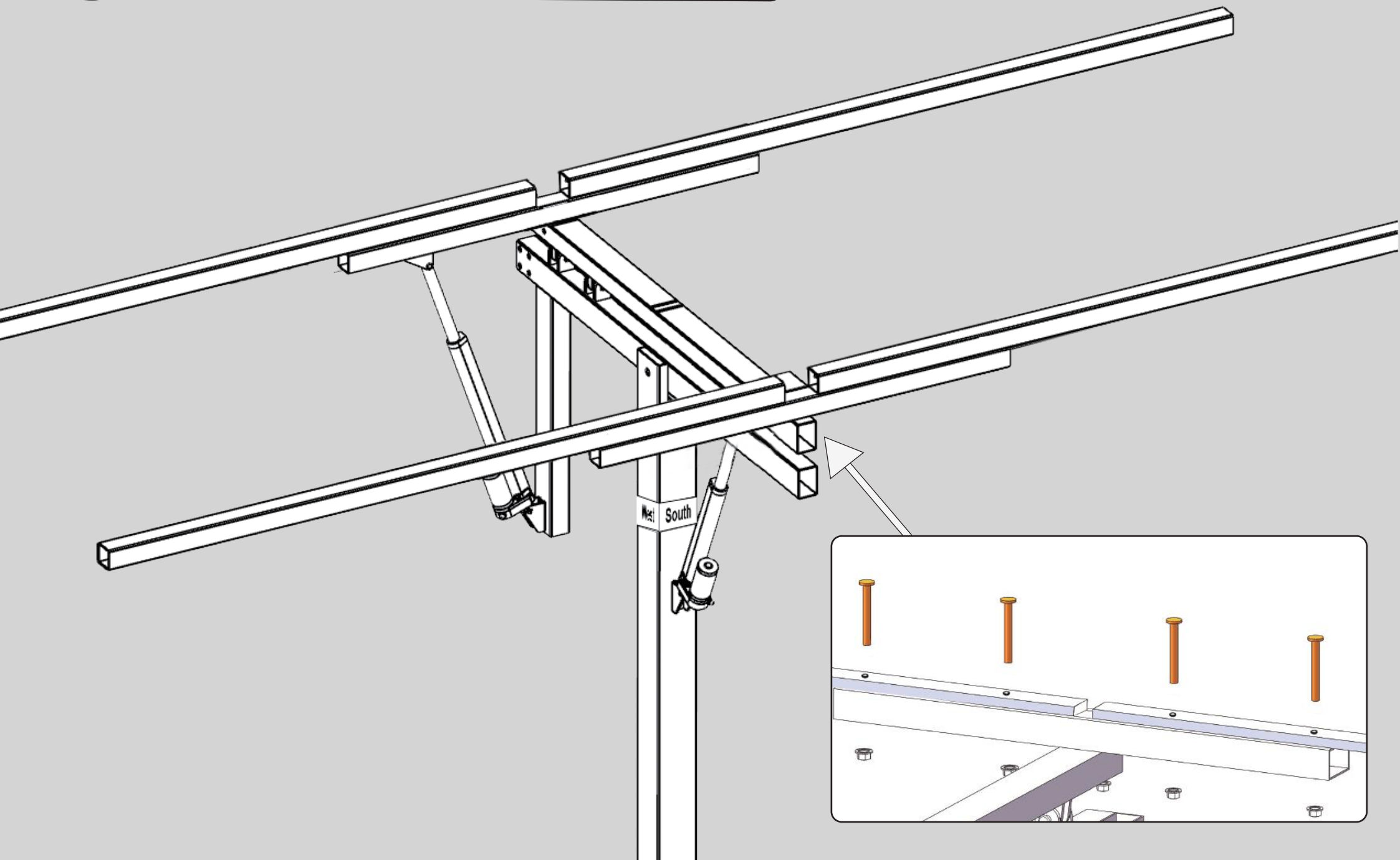
x1
Screw
Bag 8



x8
M10*80
Hex Socket
Cap Bolt



x8
M10
Flange Nut



9

x8
1500mm
Channel Steel

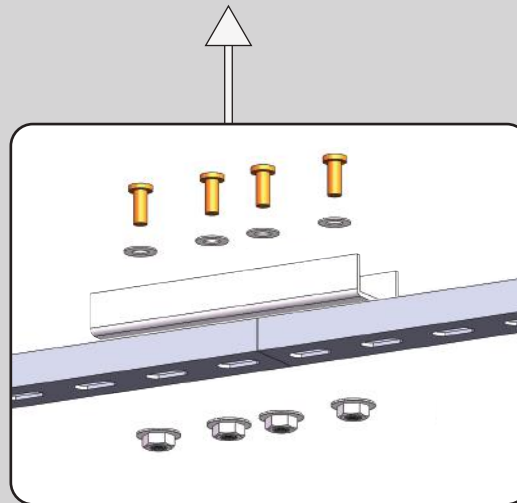
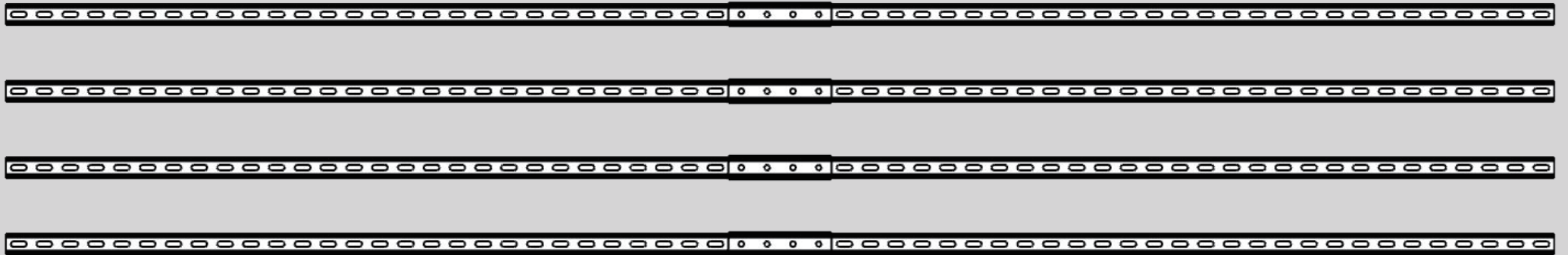
x4
U-Shaped
Connector

x1
Screw
Bag 9

x16
M10*20
Hex Socket
Cap Bolt

x16
M10
Flange Nut

x16
M10
Flat Washer



10

**x8**
1500mm
Channel Steel

**x1**
Screw
Bag 10

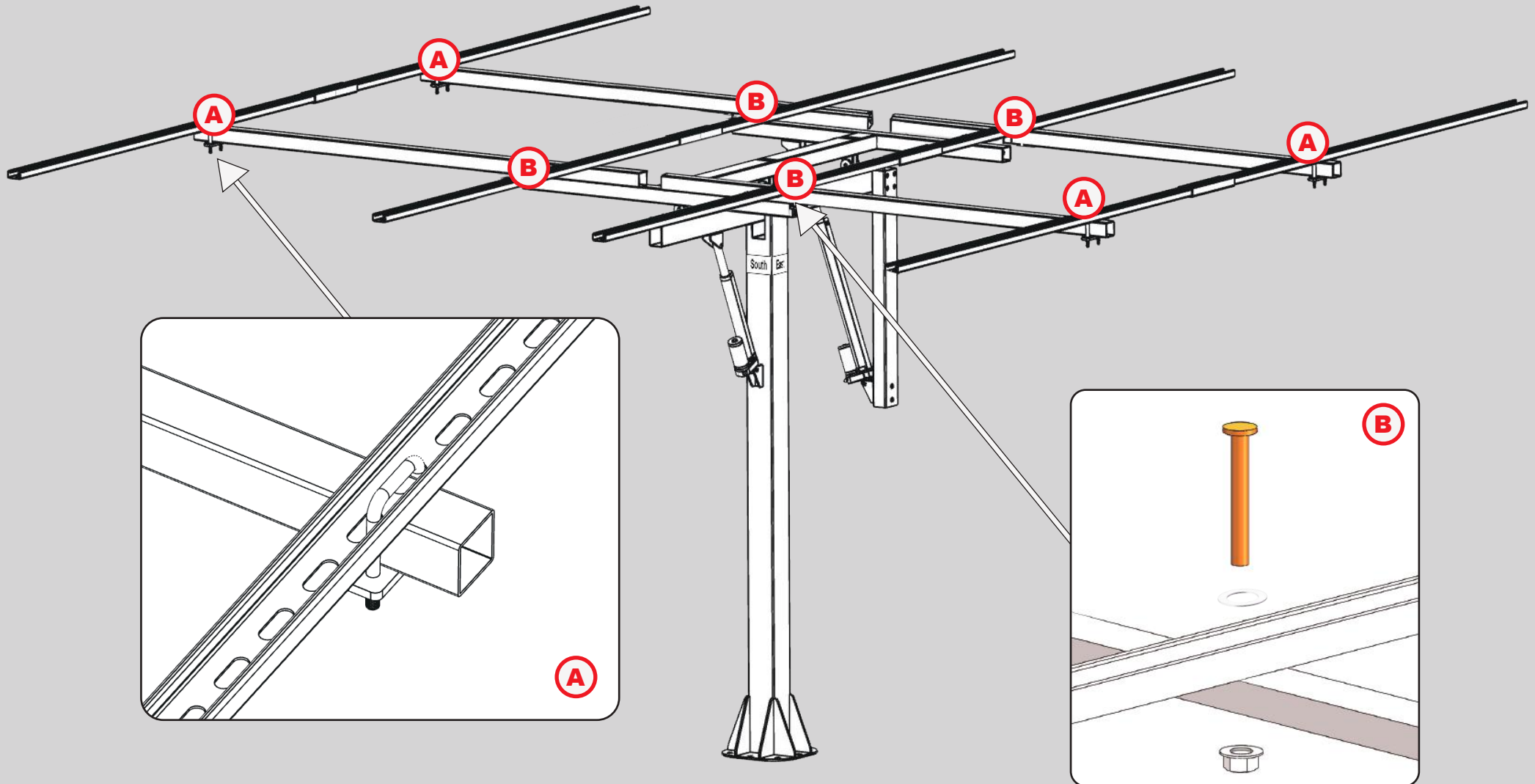
**x4**
U-Bolt

**x8**
M6
Flange Nut

**x4**
M10*80
Hex Socket
Cap Bolt

**x4**
M10
Flange Nut

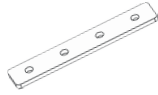
**x4**
M10
Flat Washer



11



x1
Solar tracker
Controller



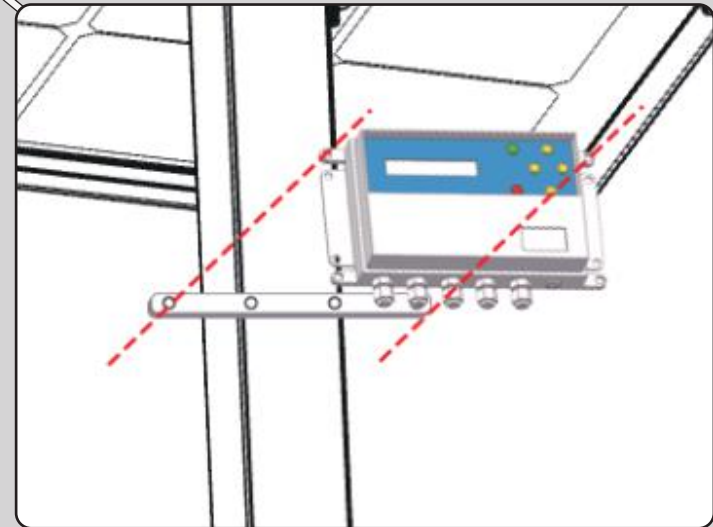
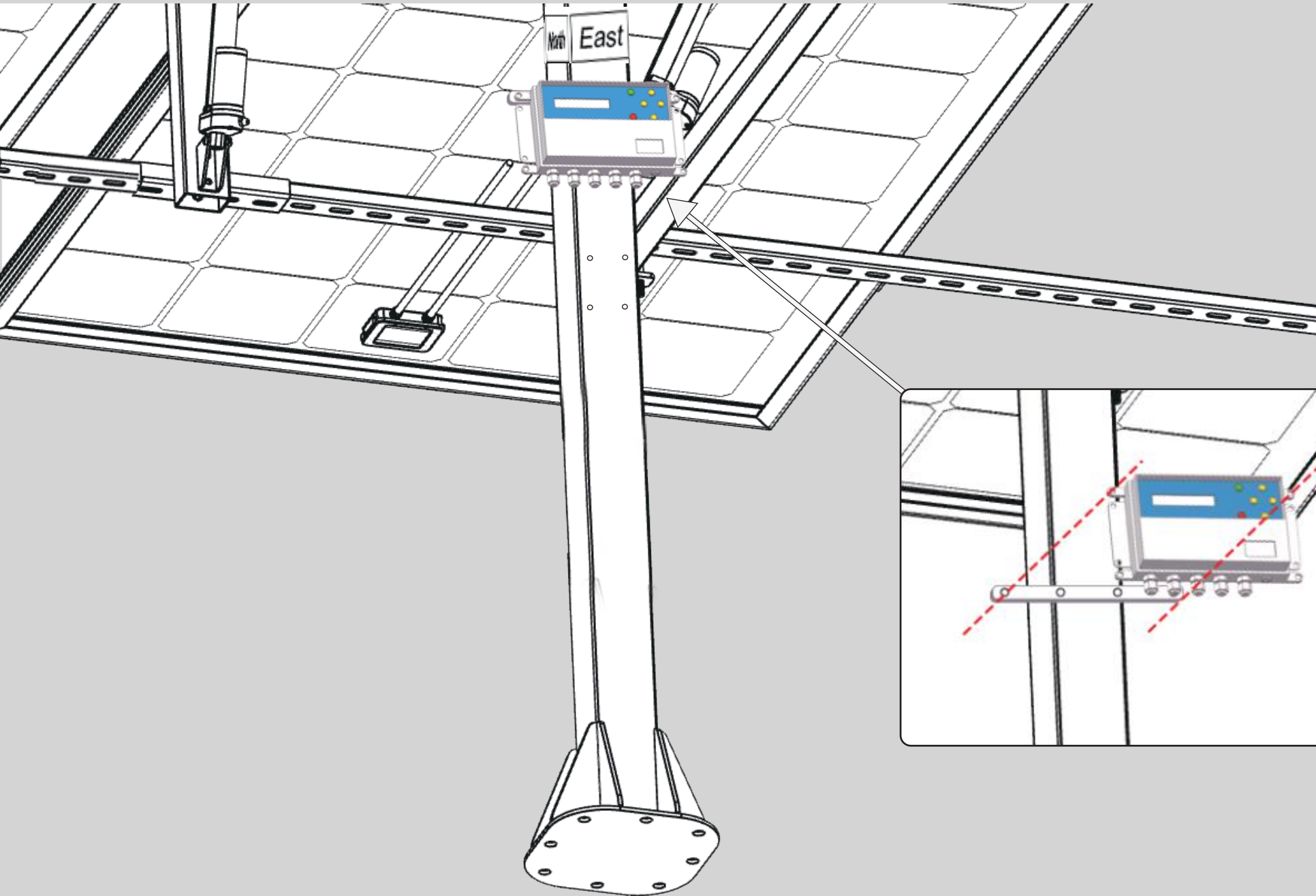
x1
Controller
Bracket



x1
Screw
Bag 11



x4
M4*10
Hex Socket
Cap Bolt



12



x1
Sunlight Sensor
 Rack



x1
Sunlight Sensor



x1
Screw
 Bag 12



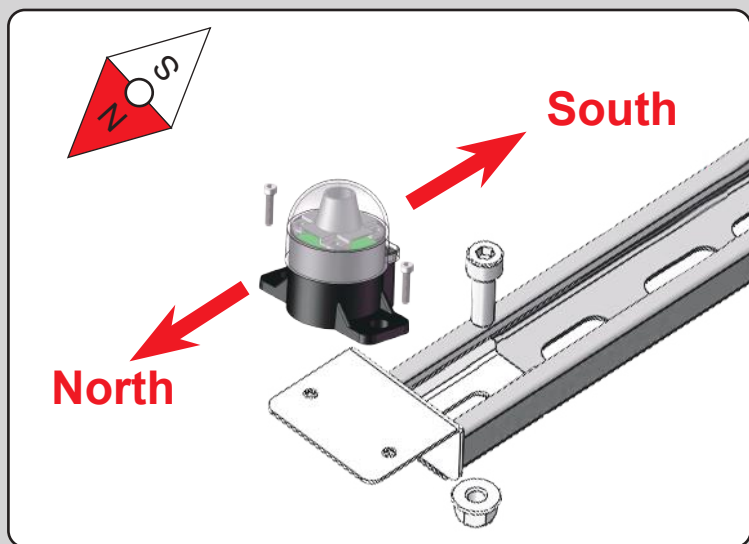
x2
M4*10
 Hex Socket
 Cap Bolt



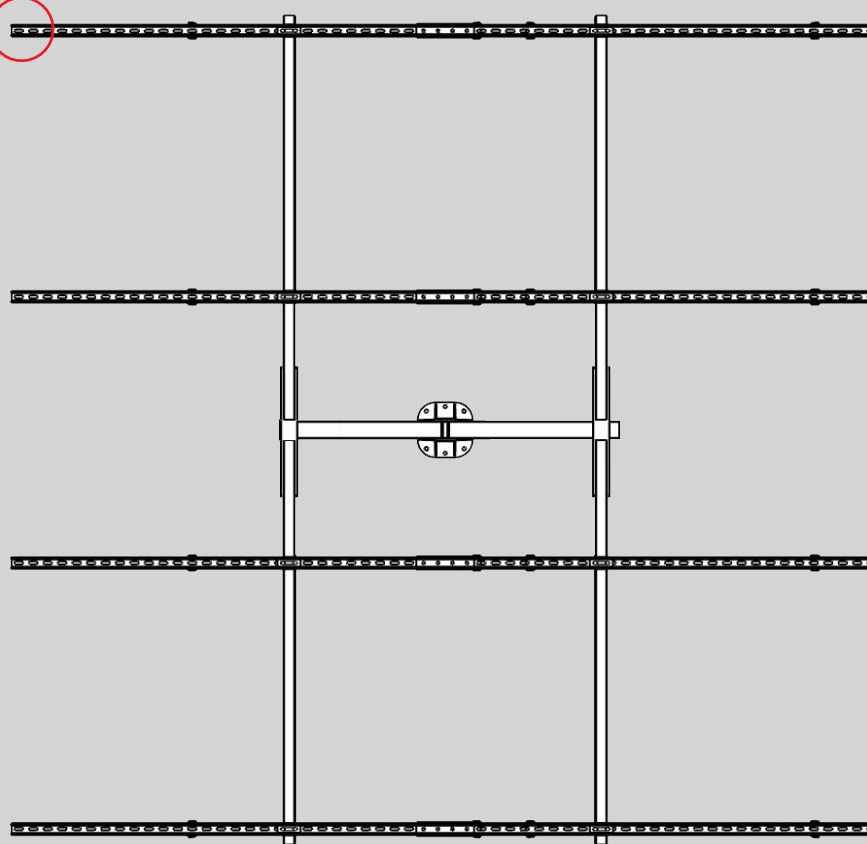
x1
M10*20
 Hex Socket
 Cap Bolt



x1
M10
 Flange Nut



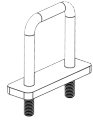
North ← → South



13



x32
Solar Panel
Clamp



x32
M8 U-Solar
Panel Clamp



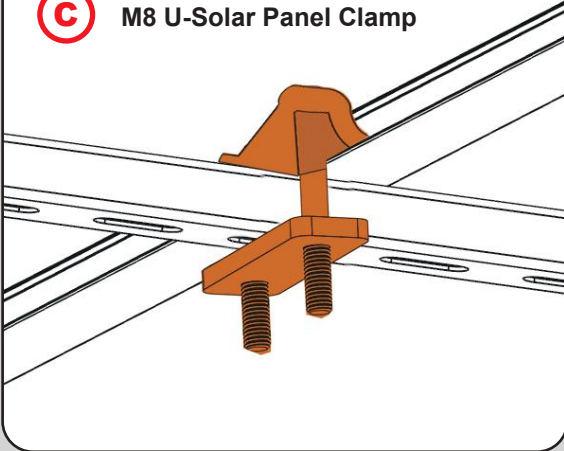
x1
Screw
Bag 13



x64
M8 Flange
Nut

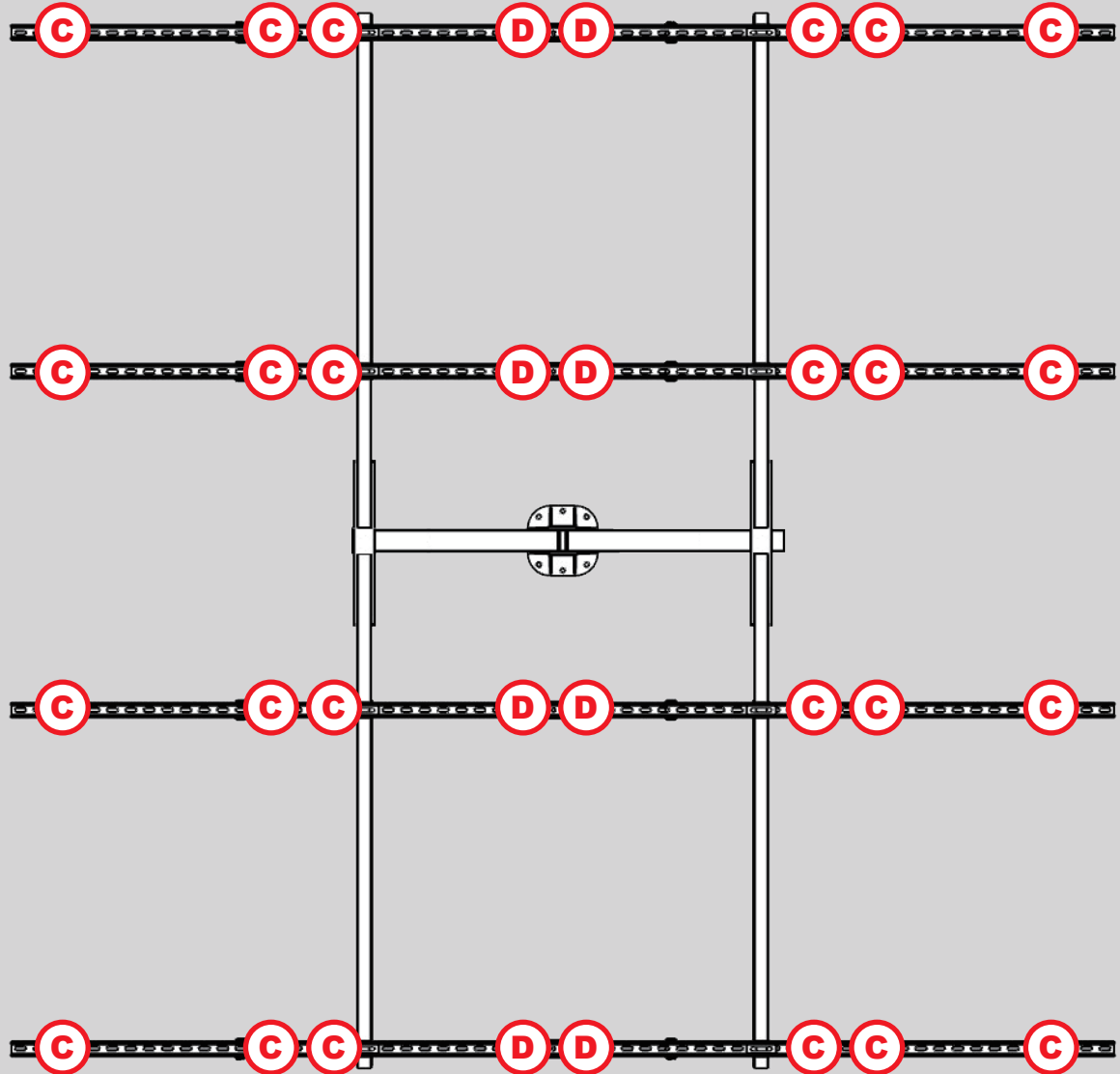
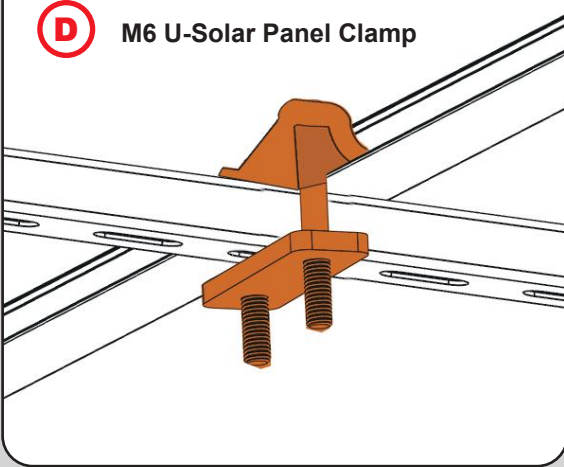
C

M8 U-Solar Panel Clamp



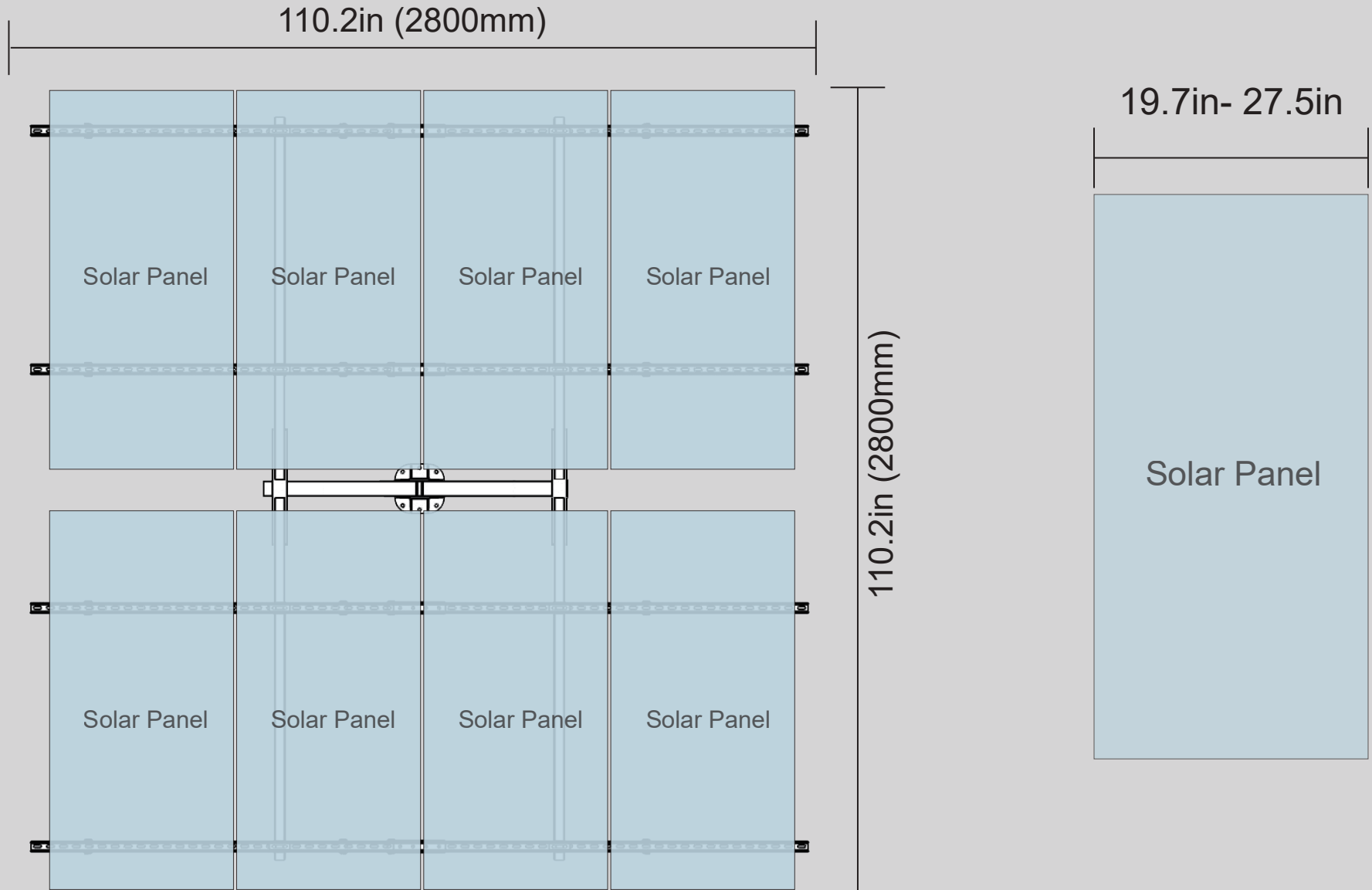
D

M6 U-Solar Panel Clamp



14

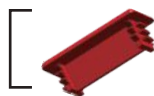
Solar Panel Sizing Formula: $L + 2W \leq 2800\text{mm}$



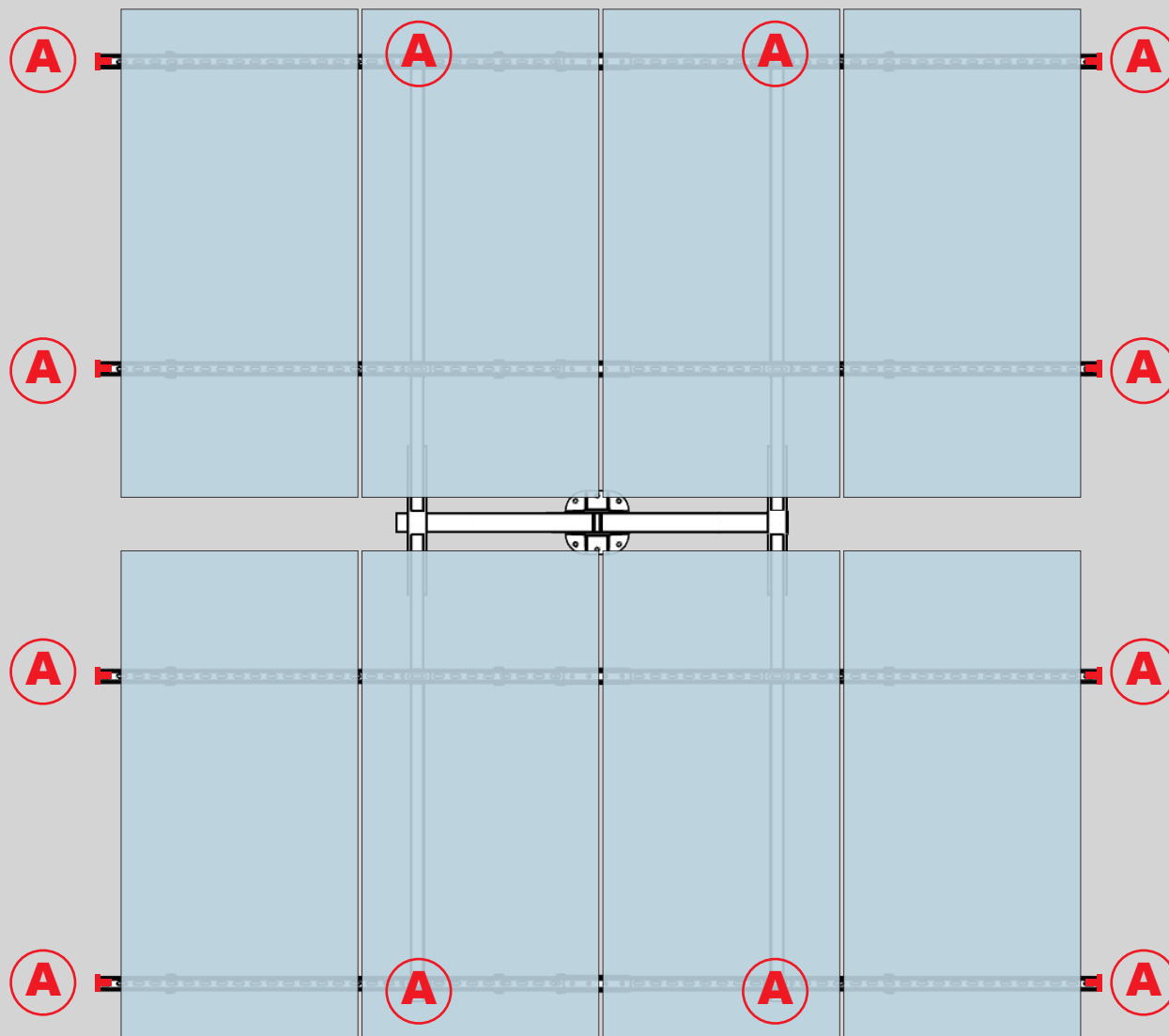
15



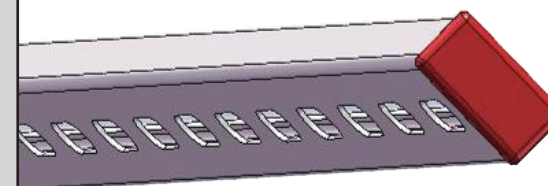
x1
Screw
Bag 14



x12
41*21mm Kappe



Anti-collision Plug



IV.Warning & Warranty

- For the use of this manual and the conditions or methods of installation, operation, use, and maintenance of product are beyond ECO-\$mart's control, ECO-\$mart does not accept responsibility and expressly disclaims liability for any loss, damage, or expense arising out of or in any way connected with such installation, operation, use or maintenance.
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 - The information in this manual, grounded in ECO-\$mart's knowledge and experience, is considered reliable. However, this information—including product specifications and suggestions—is not intended to serve as a warranty, whether expressed or implied.
 - ECO-\$mart reserves the right to make changes to the manual, products, specifications, or product information sheets at any time without prior notice.
 - This product is covered by a 1-year warranty from the manufacturer. If a product is found to have defects due to our error, we will either refund, partially refund, or replace it at our discretion. If you encounter technical issues not resolved by this manual, please contact ECO-\$mart for further assistance.
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