

# MANUAL FOR INSTALATION AND USAGE OF SOLAR TRACKER 2-AXIS SM44M3V15P



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## Dual-Axis **SOLAR TRACKER** for 15 panels **ST44M3V15P** for 3,75 kWp @ 15% pan. eff.

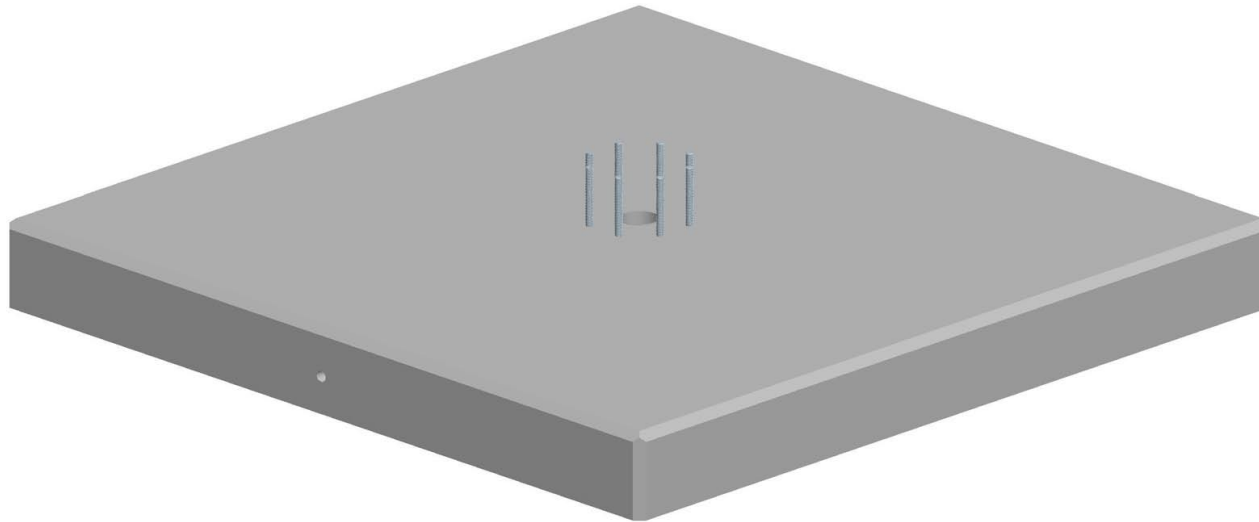
- With time-derived astronomical positioning for the automatic sun-tracking
- Dual-Axis solar tracker with embedded positioner
- Time controlled astronomical algorithm for sun tracking
- Simple installation and synchronization of sun time
- Usable for PV, CPV and lighter thermal panels and heliostats
- 7 hours of automatic tracking at perpendicular angle
- User friendly web interface for monitoring, setting and upgrading
- USB communication port, optionally CAN BUS, RS485
- For surface area up to 25m<sup>2</sup> and max 500 kg
- Made in Europe

## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

### STEP 1:

- Choose the place for Solar Tracker where is not so windy. The Solar Tracker need to turn in horizontal position at wind speed of 70 km/h.
- Make a groove in ground and put on ground the pipe for power supply cable, low voltage inverter string cable and RS485 communication cable.
- Prepare and fortify the ground.
- Setup the concrete block on site or make concrete block on site, but make sure that you point the block to south direction as is shown in drawing and that the block stay horizontal.

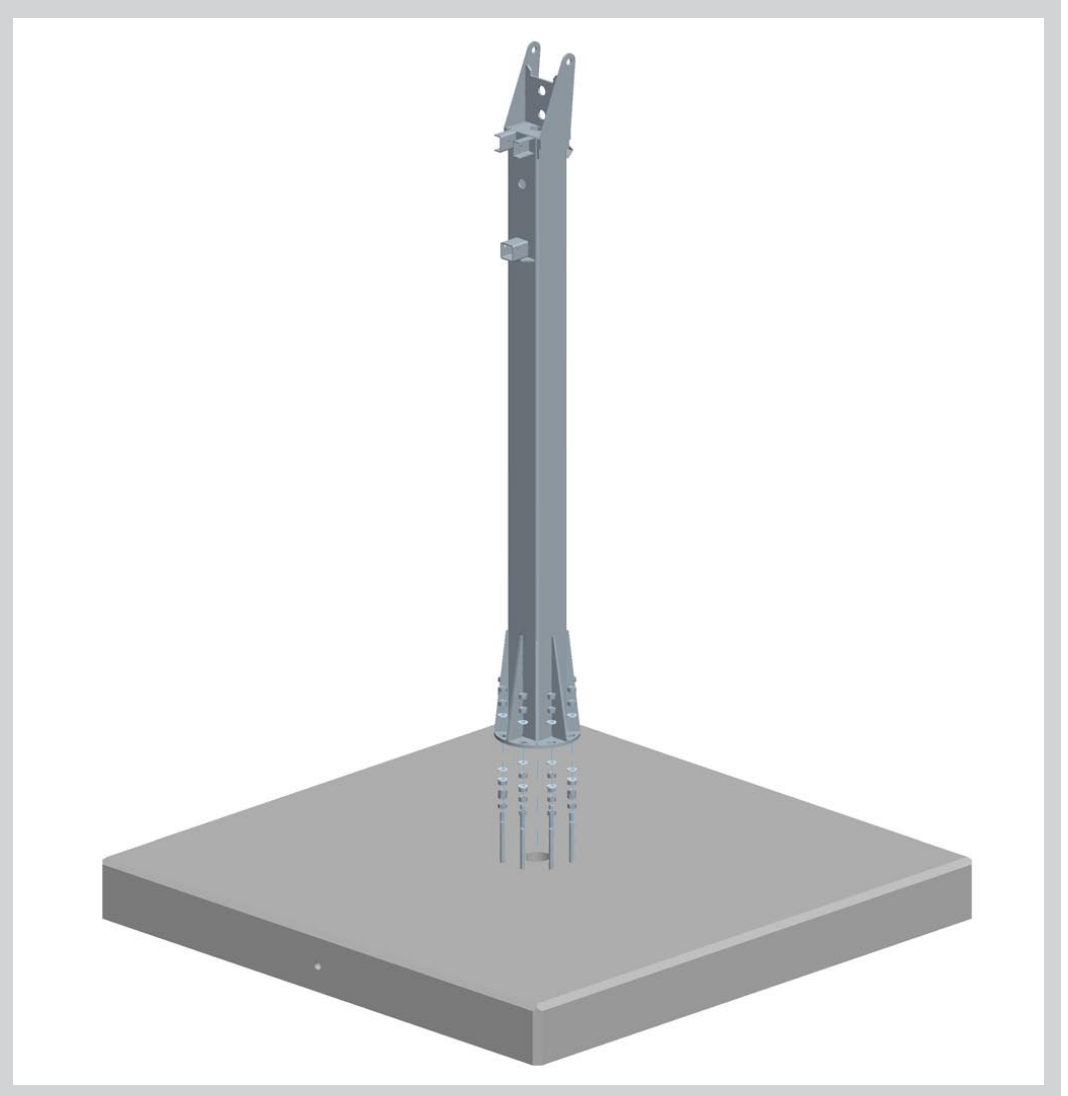
The Concrete block is not a part of Solar Tracker! The customer need to make it on site or deliver on site!



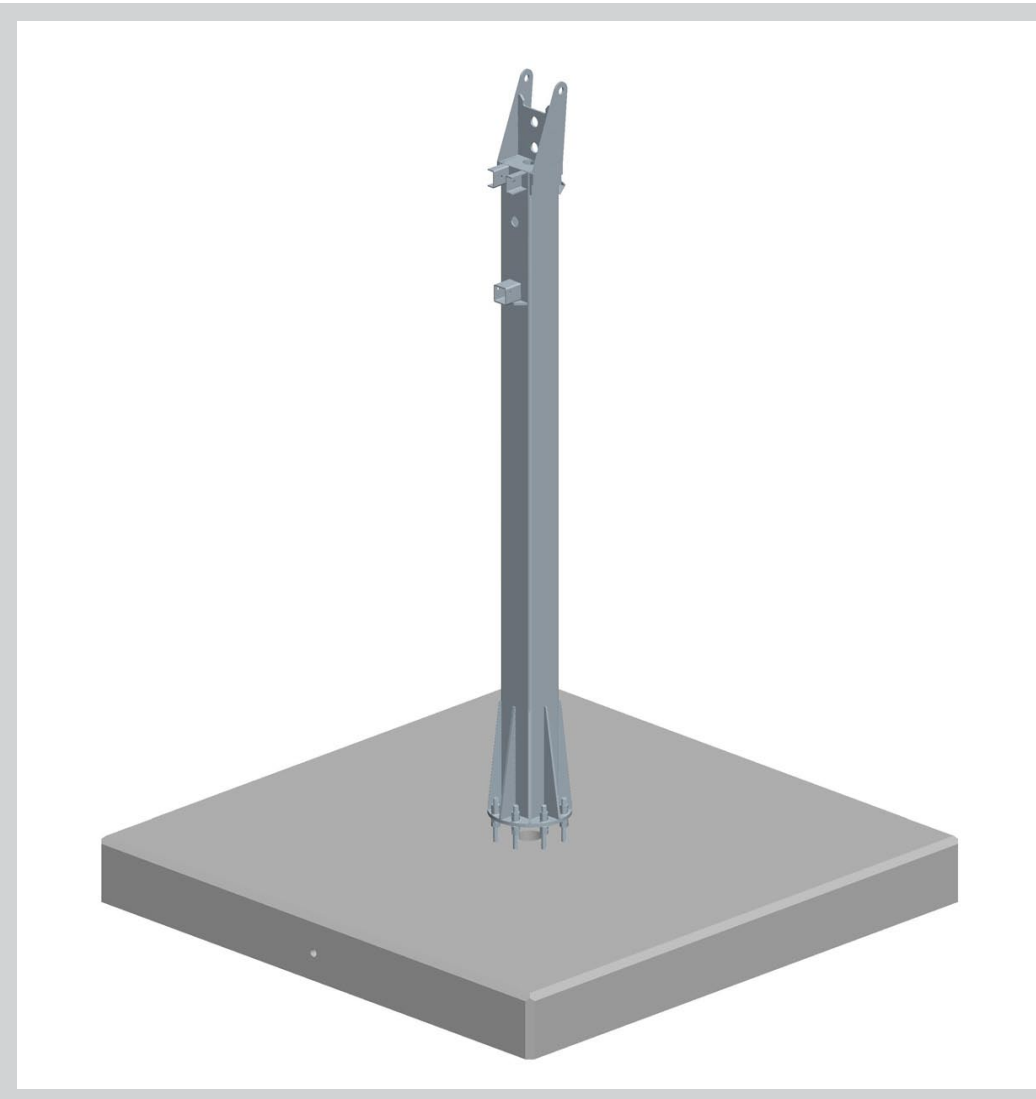
## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

### STEP 2:

- Take the nuts and screw it on the thread bar. You need to make that the nuts one against another are fully horizontal in between them.
- Take the washers and put it above the nuts.
- Take the pillar and put it on the treaded bar. Do not forget to mount in the right direction
- Again take the washers and put it above the plate.
- Then take the nuts and screw it on the thread bar gently.
- Tight the nuts to compress the plate in between. Use the tightening torque of 620 NM. The pillar need to be really in vertical position
- Tight also the contra nuts below and above use the tightening torque of 620 NM.



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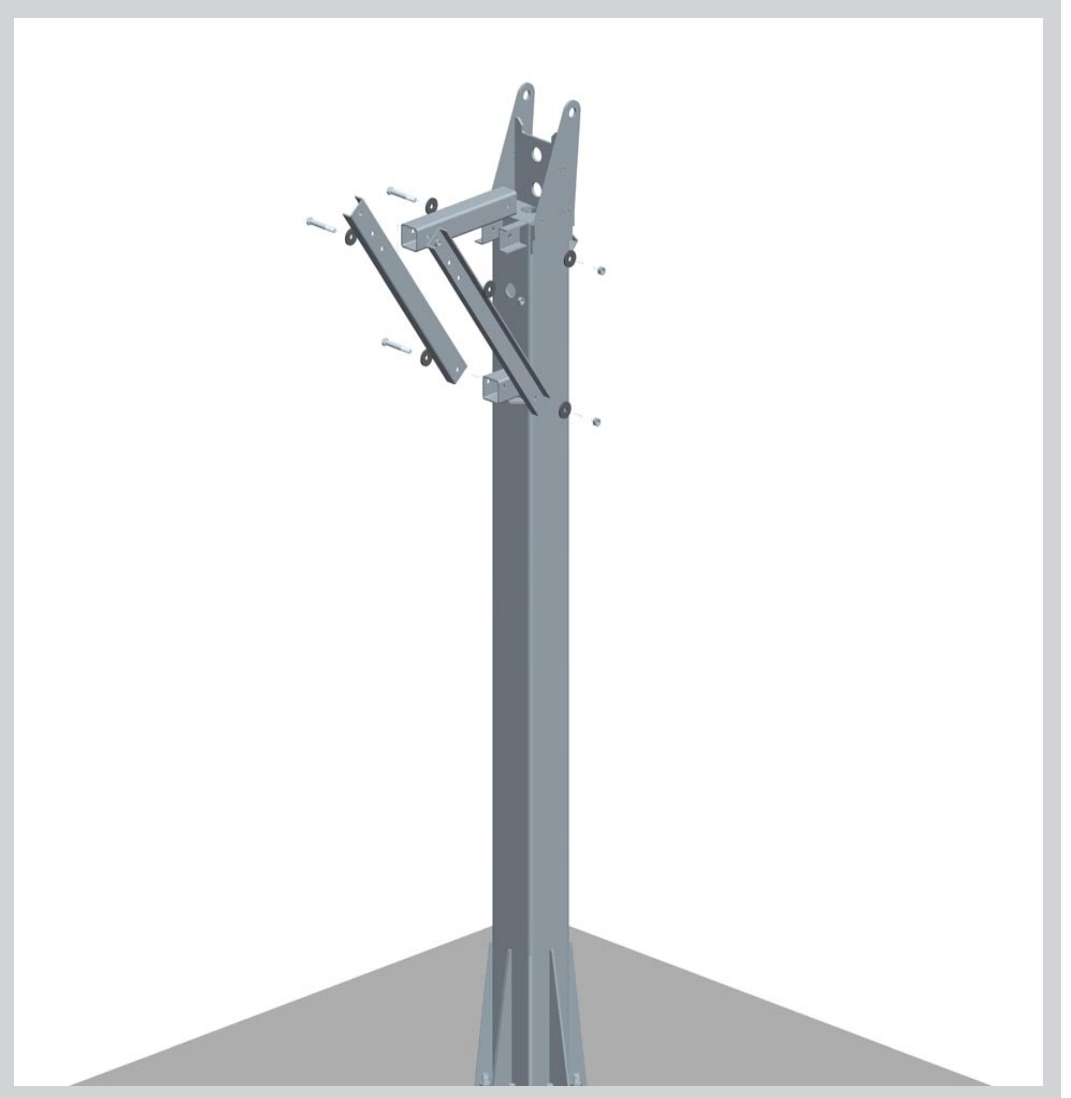


- Fixed element

## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

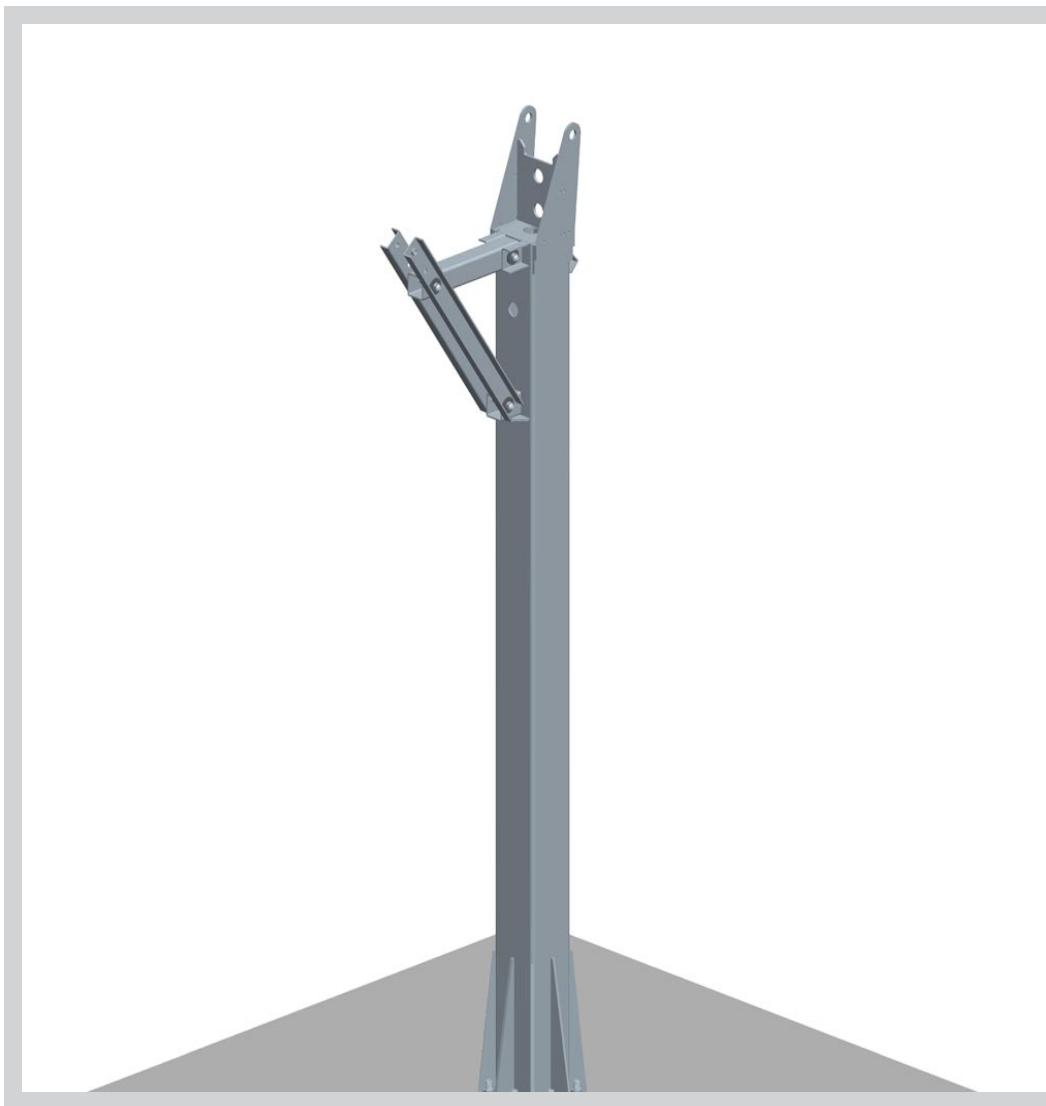
### STEP 3:

- Assemble as is shown.  
Screws with nuts tight together with torque of 100 NM.





## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P



- Fixed element

## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

### STEP 4:

- Assemble as is shown.  
Screws with nuts tight together with torque of 100 NM.



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- Fixed element



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

### STEP 5:

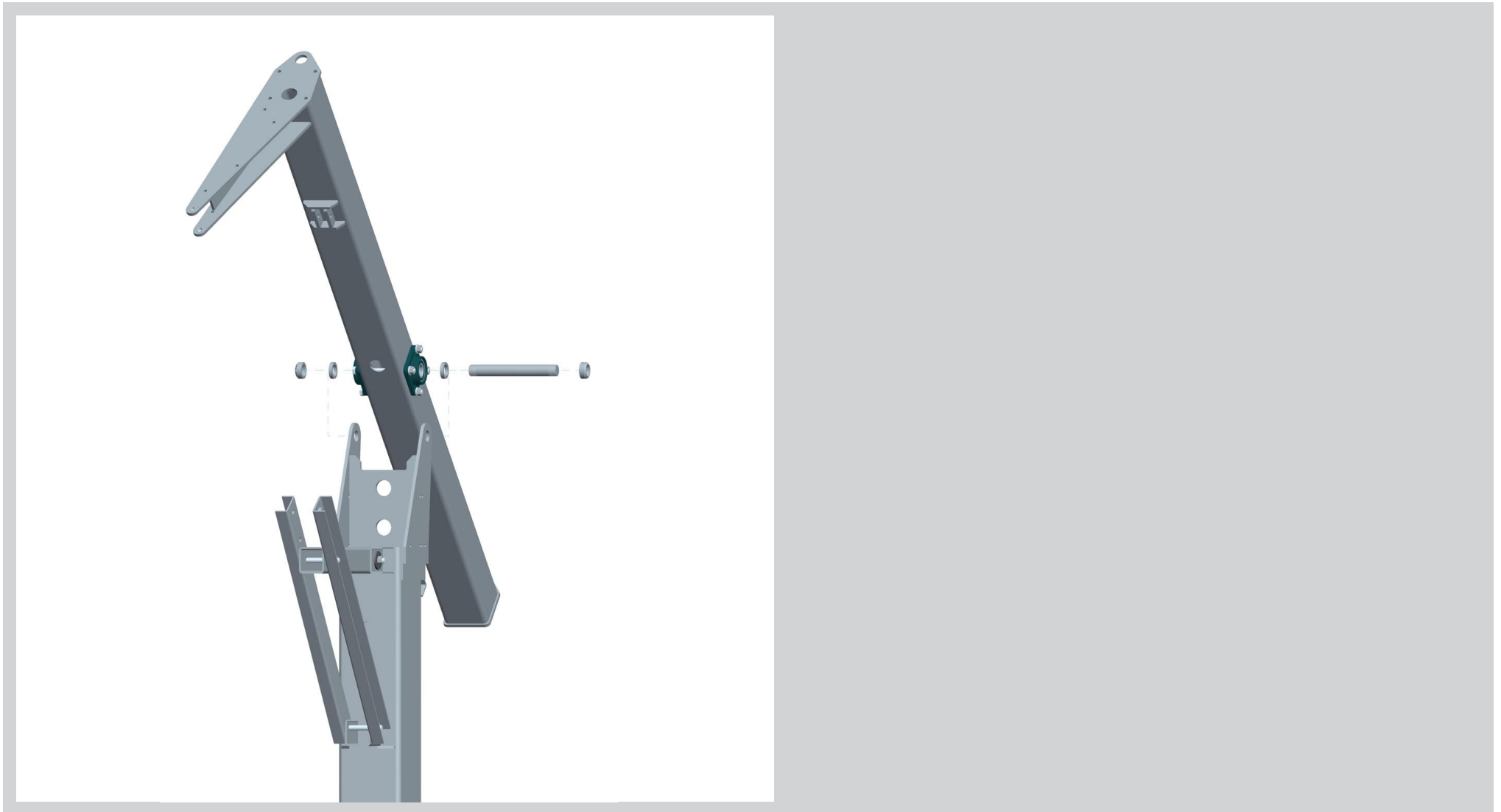
- Assemble as is shown.  
Screws with nuts tight together with torque of 30 NM.

Note: The washer must be inserted between the ear from pillar and bearing.





Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

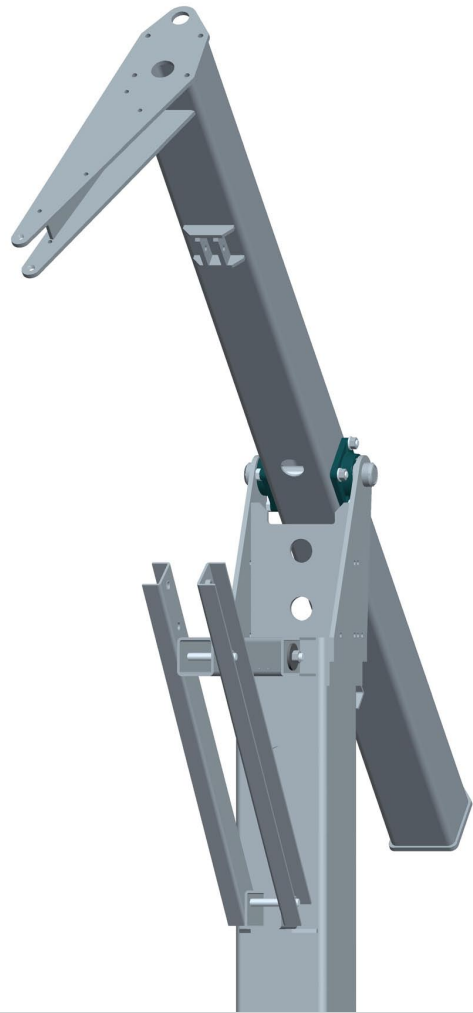




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- Fixed element

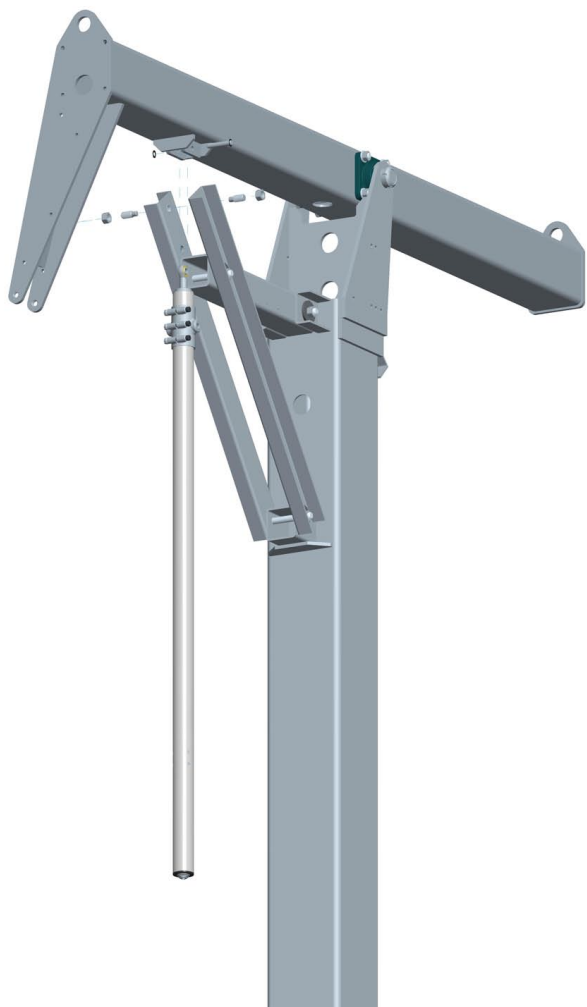
## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

### STEP 6:

- First assemble the slide clamp on linear motor as is shown.  
The screw tight with torque of 40 NM.
- Check that screw is fully in the hole in slide clamp but take care that the slide clamp with linear motor still can rotate around the pin.



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- Assembled linear motor with slide clamp, then assemble to a construction assembled.
- Check that screw is fully in the hole in slide clamp but take care that the slide clamp with linear motor still can rotate around the pin.



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- Fixed element





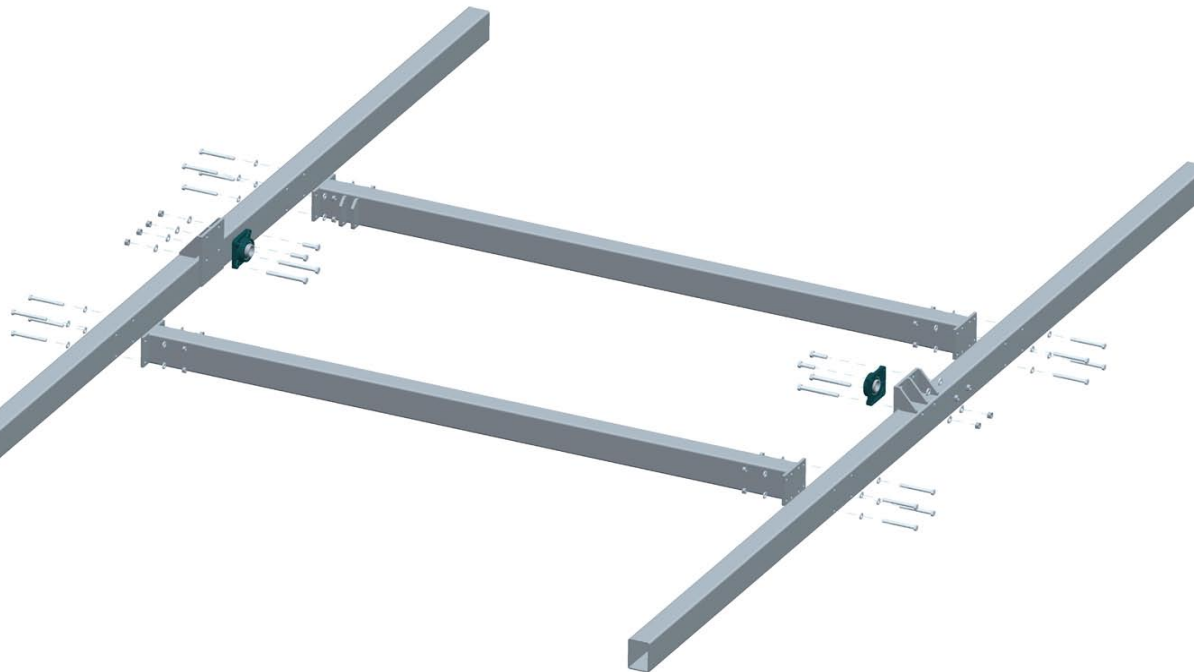
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## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

### STEP 7:

- Assemble as is shown.
- Make sure that the construction is not twisted after assembled, if is make it flat 100%.



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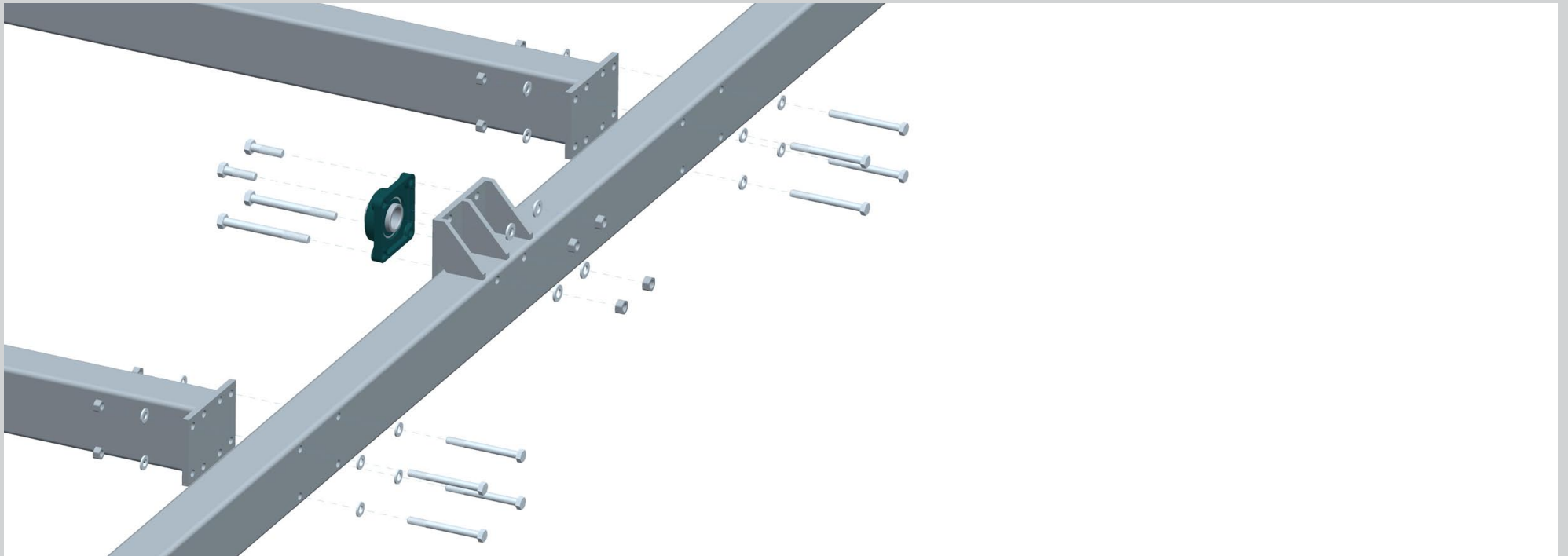
- Fixed element



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

### STEP 8:

- You have to mounth simetrically on and on both sides. The nuts tight with torque of 100 NM.



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

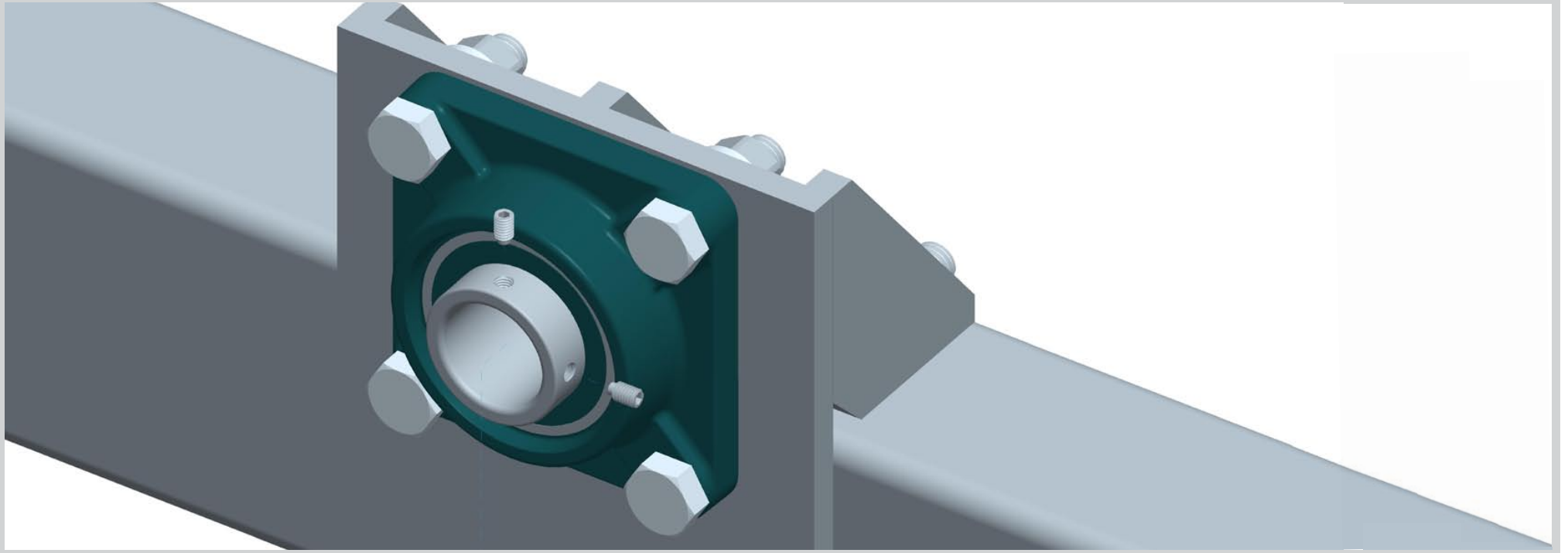
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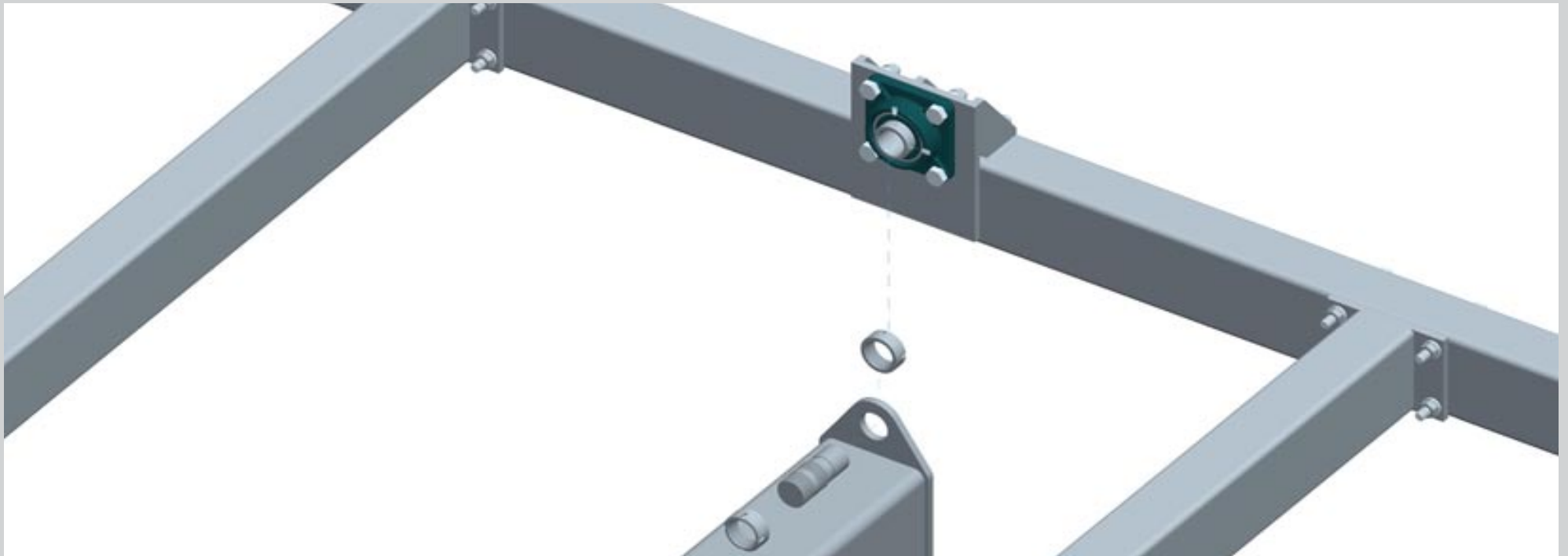
- Detailed picture





## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

- Detailed picture



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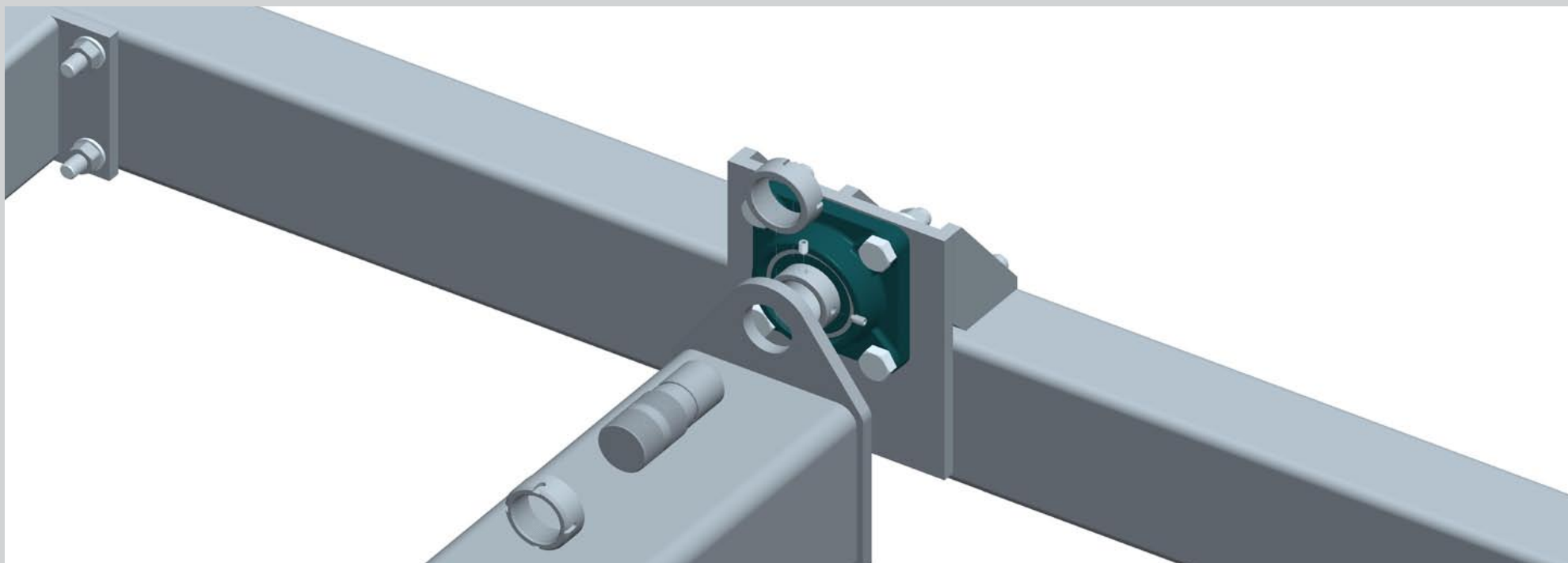






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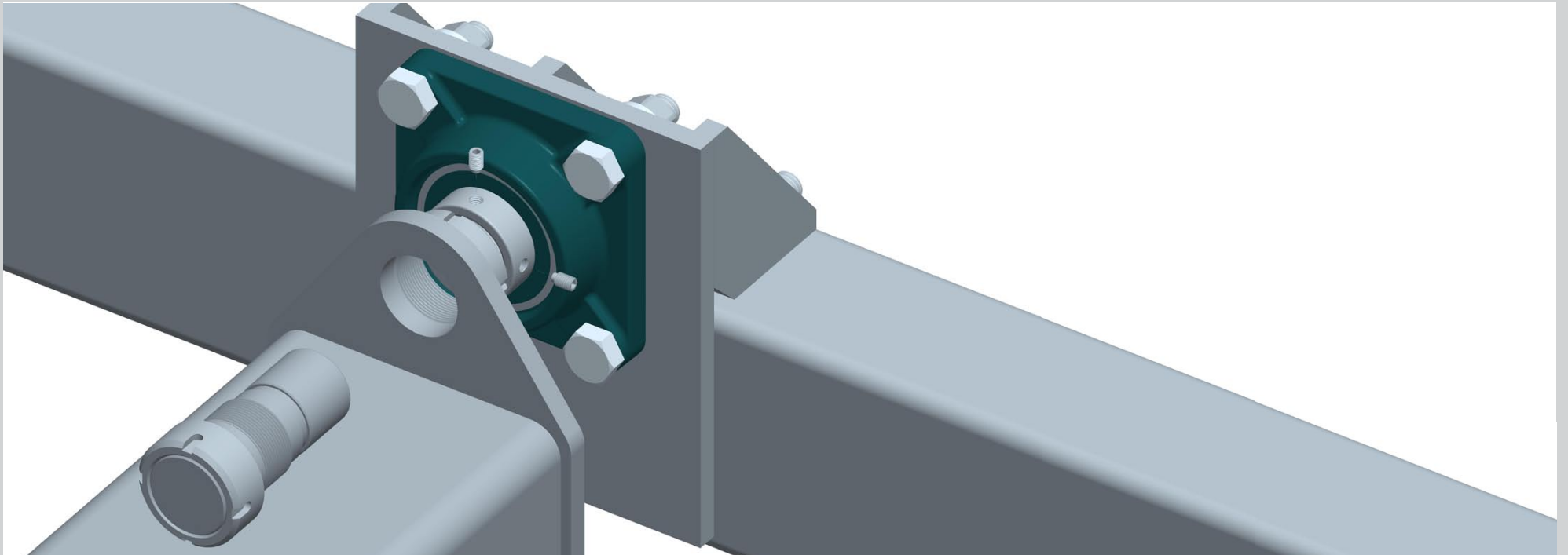
- Detailed picture





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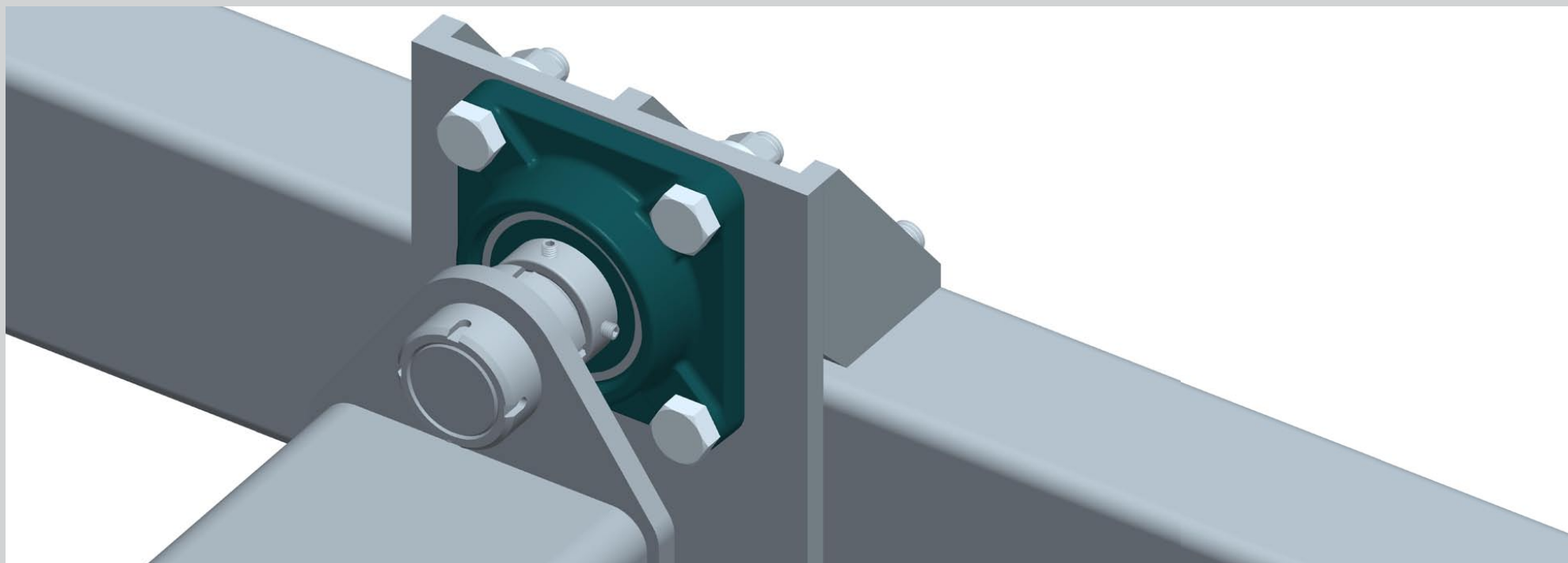
- Detailed picture





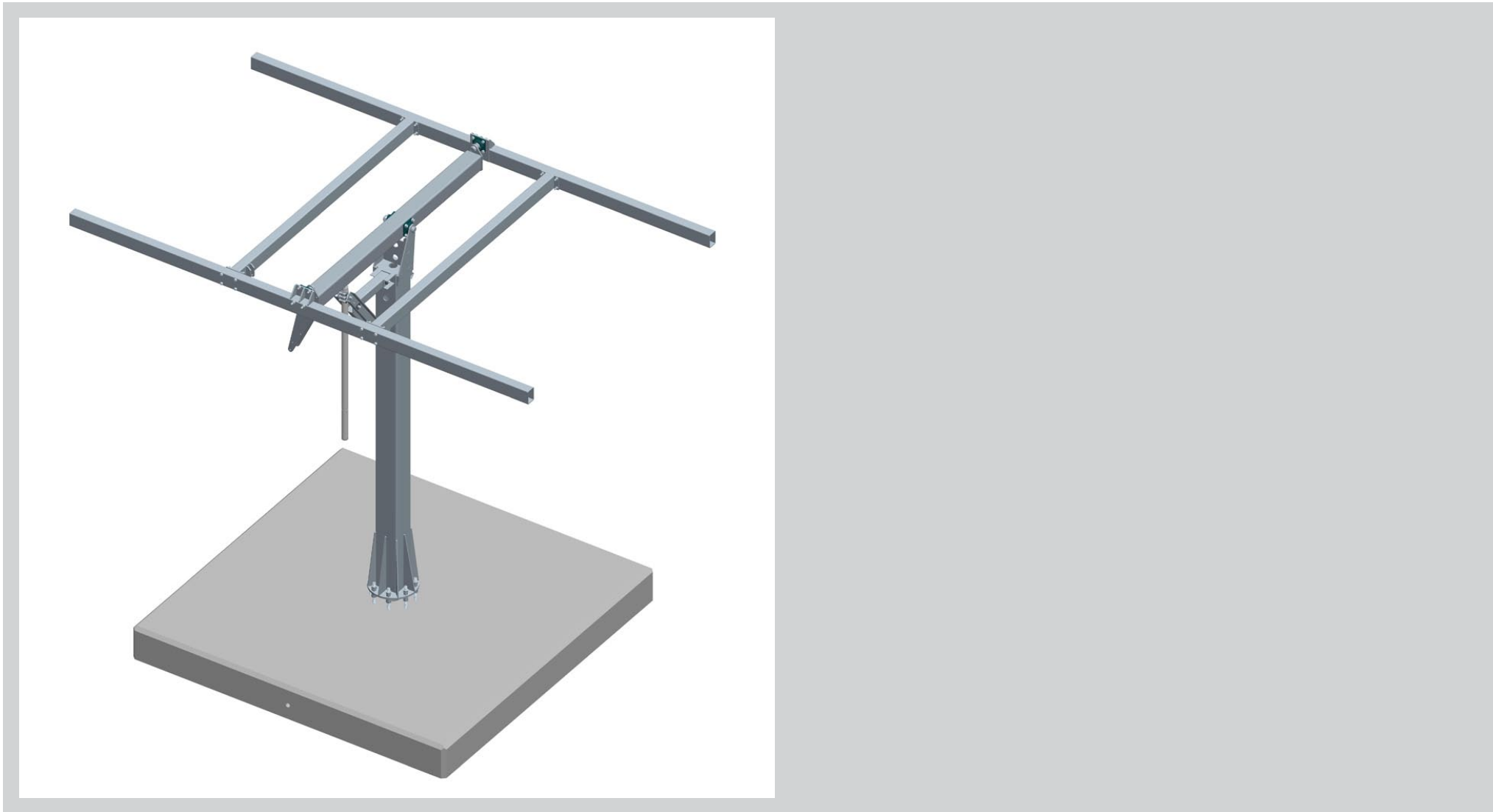
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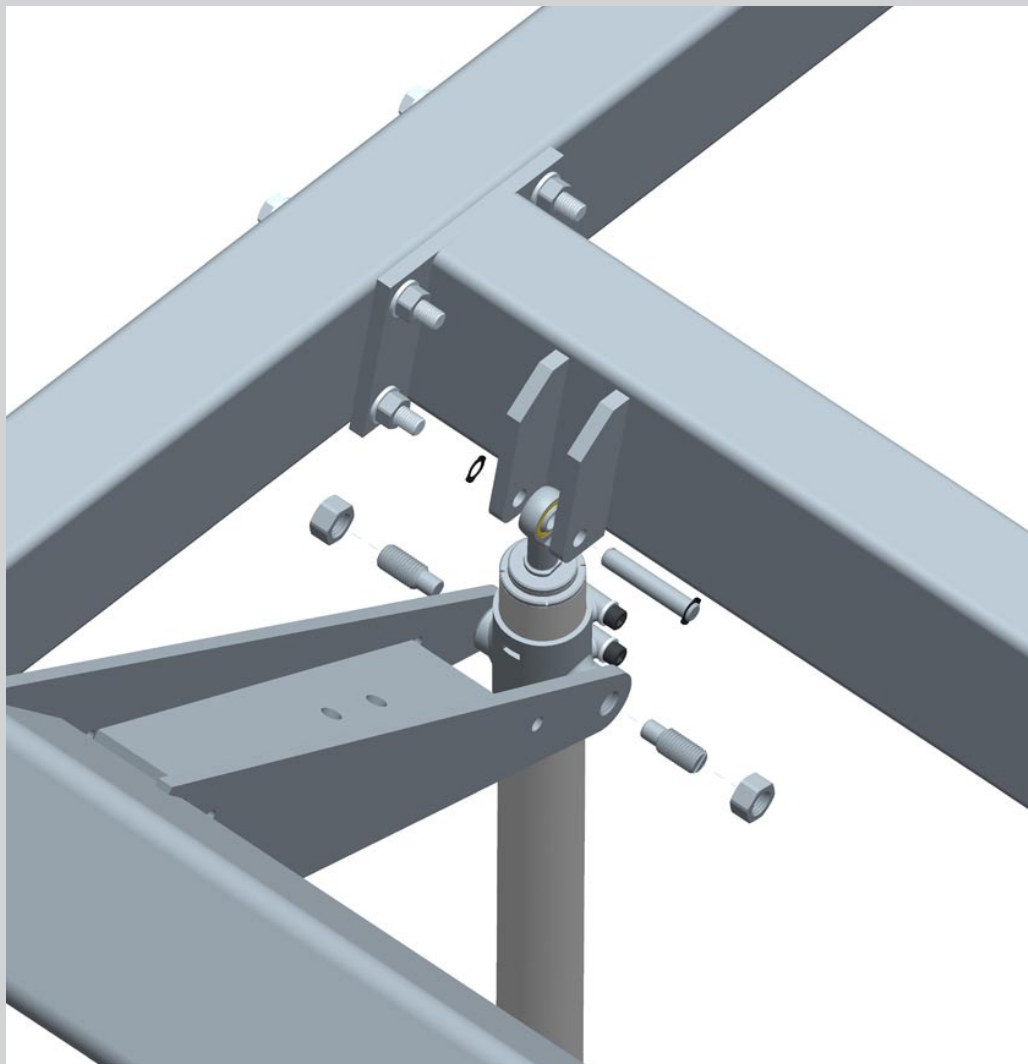
### STEP 9:

- First assemble the slide clamp on linear motor as is shown.  
The screw tight with torque of 40 NM.
- Check that pin of screw is fully in the hole in slide clamp but take care that the slide clamp with linear motor still can rotate around the pin.





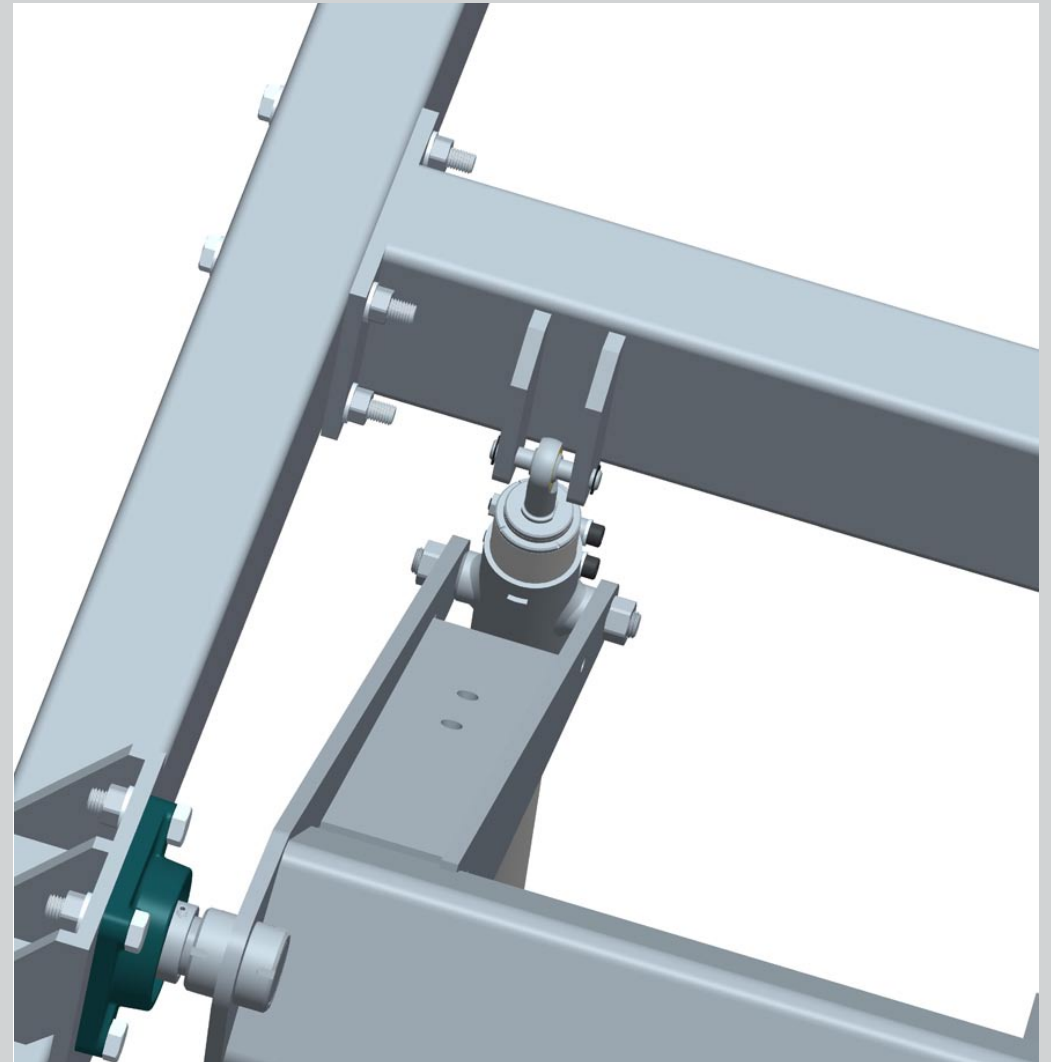
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- Detailed picture

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- Detailed picture



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P



### **STEP 10:**

- First assemble the junction box set with installed solar positioner and 2 pcs of cables for linear motor. The screw tight very gently, only so much that the box stay on.



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

- You need to instal the cables attached to junction box set on the construction and connect to the linear motors.
- Second install below the construction the short 2m cable which is elevation angle motor cable and connect with motor (EAM)
- Third you need 5Mm long cable and install throw the pole and concret block.

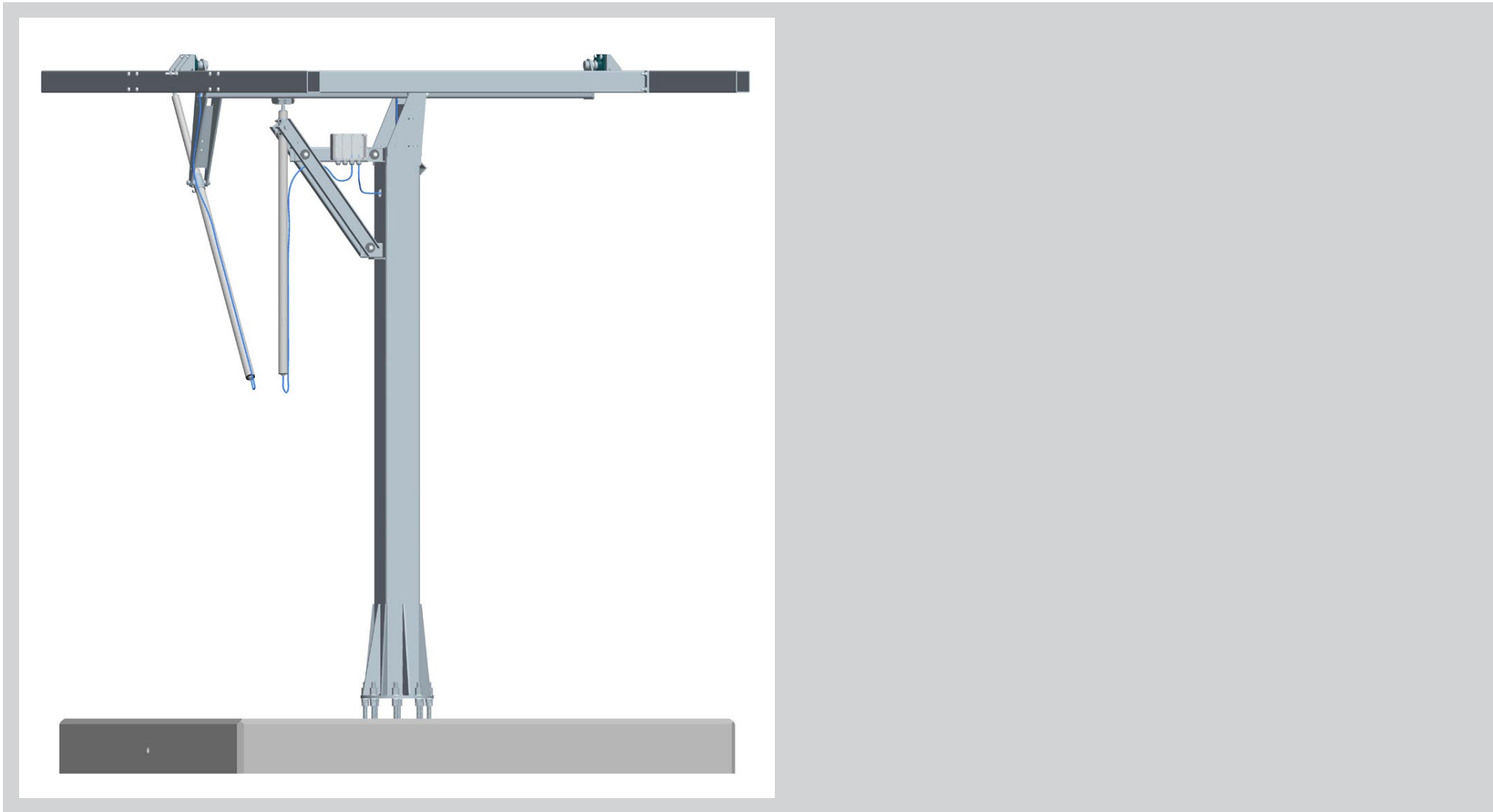
Note: Power supplay and comm. cable is not a part of tracker!

- Where to connect the cable in the junction box is written in the box. The drawing is added to box.
- Switch on power supplay and with help of buttons move both motors totaly in (together) so that the end switch stopes the movement.
- Connect the personal computer with the USB cable to USB port on solar positioner model "micro". Disable automatic tracking and make the reference position for both motors.
- Once all synchronisation is done, start the horizontal alignment for both axes then disconnect the computer and switch of power supplay.





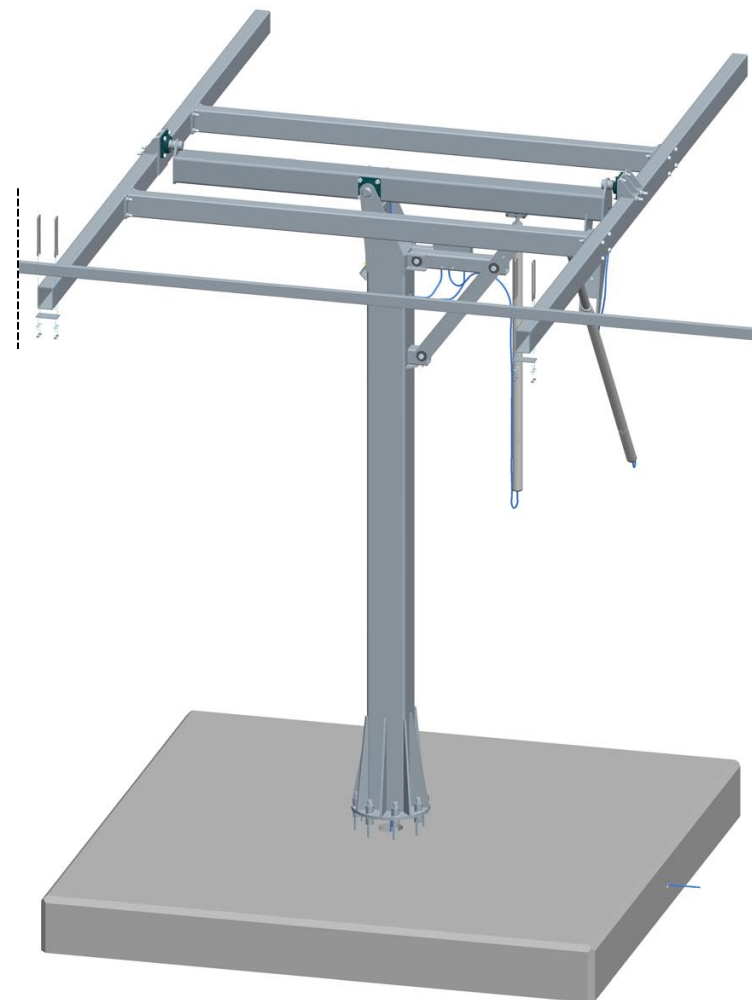
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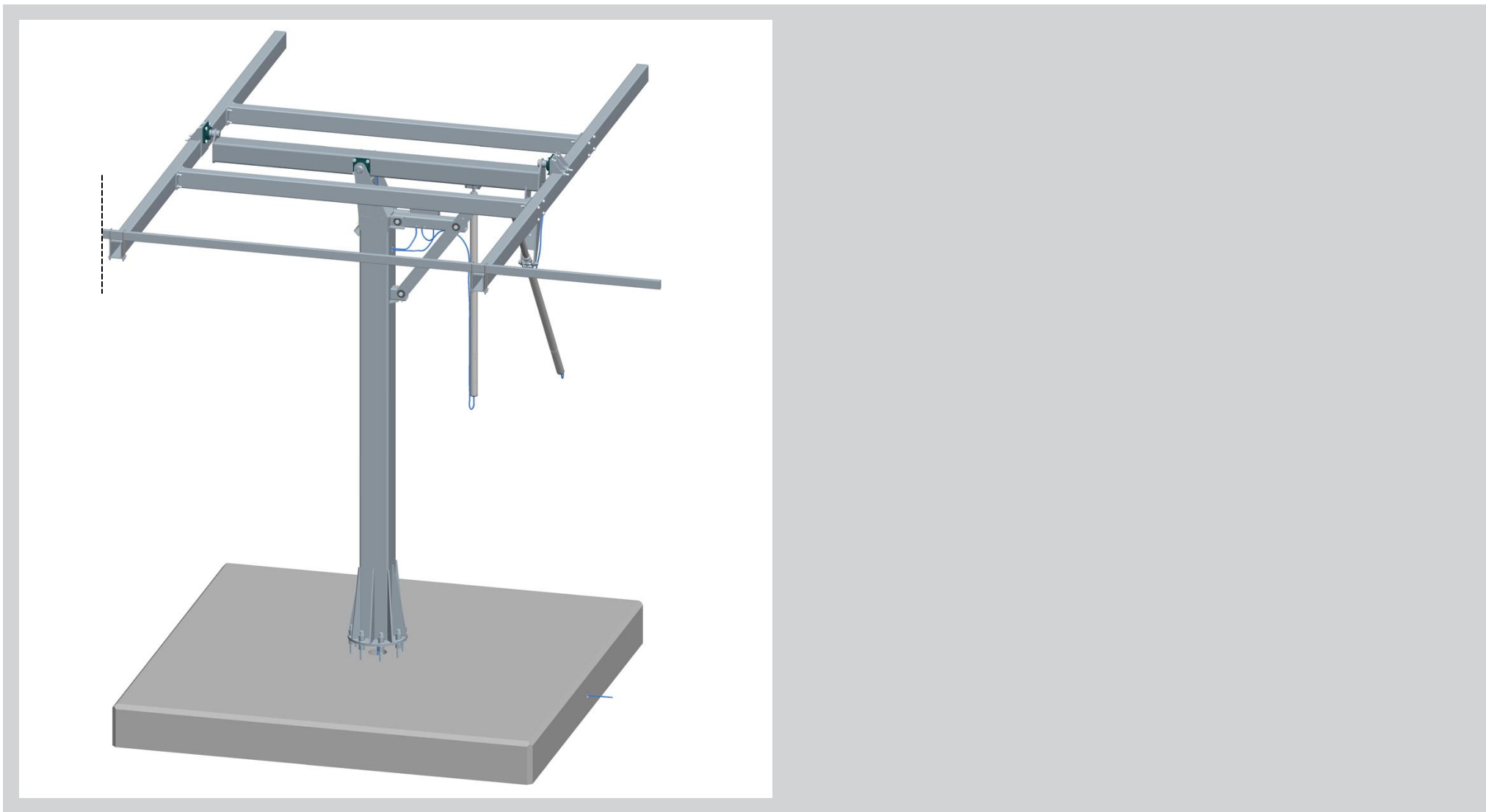
### STEP 11:

- On horizontally positioned HPK subconstruction you need to mount the 6 pieces of tubes.
- Fix it with the fitting material as is shown



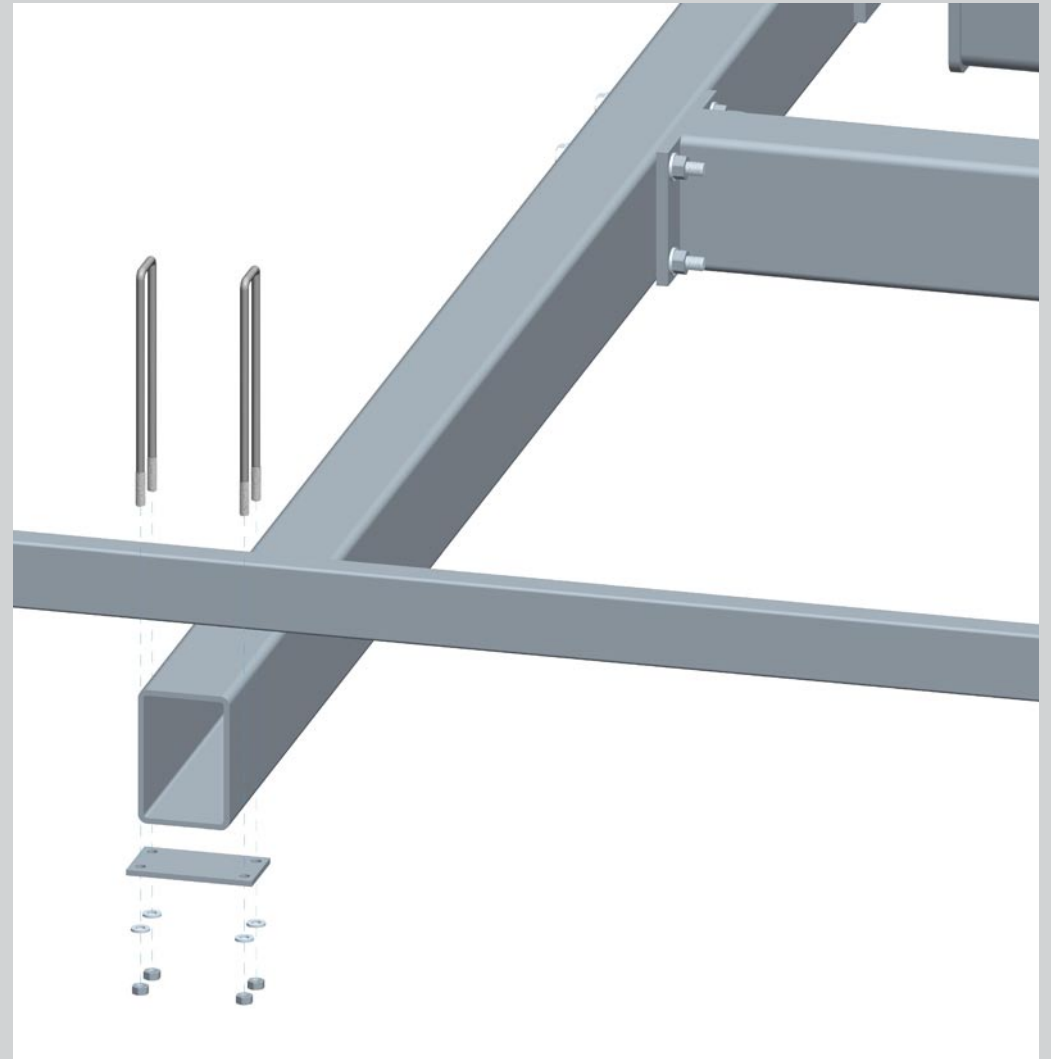


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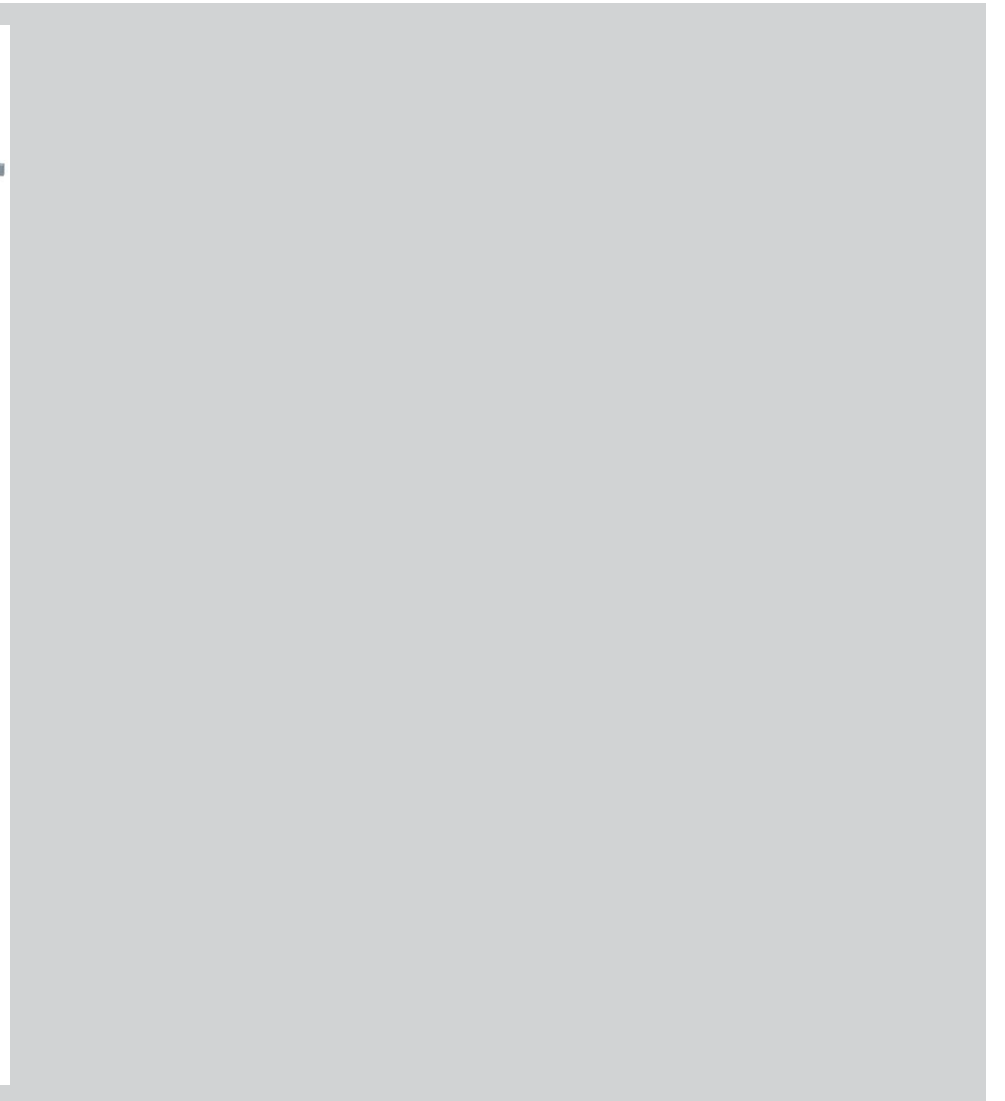
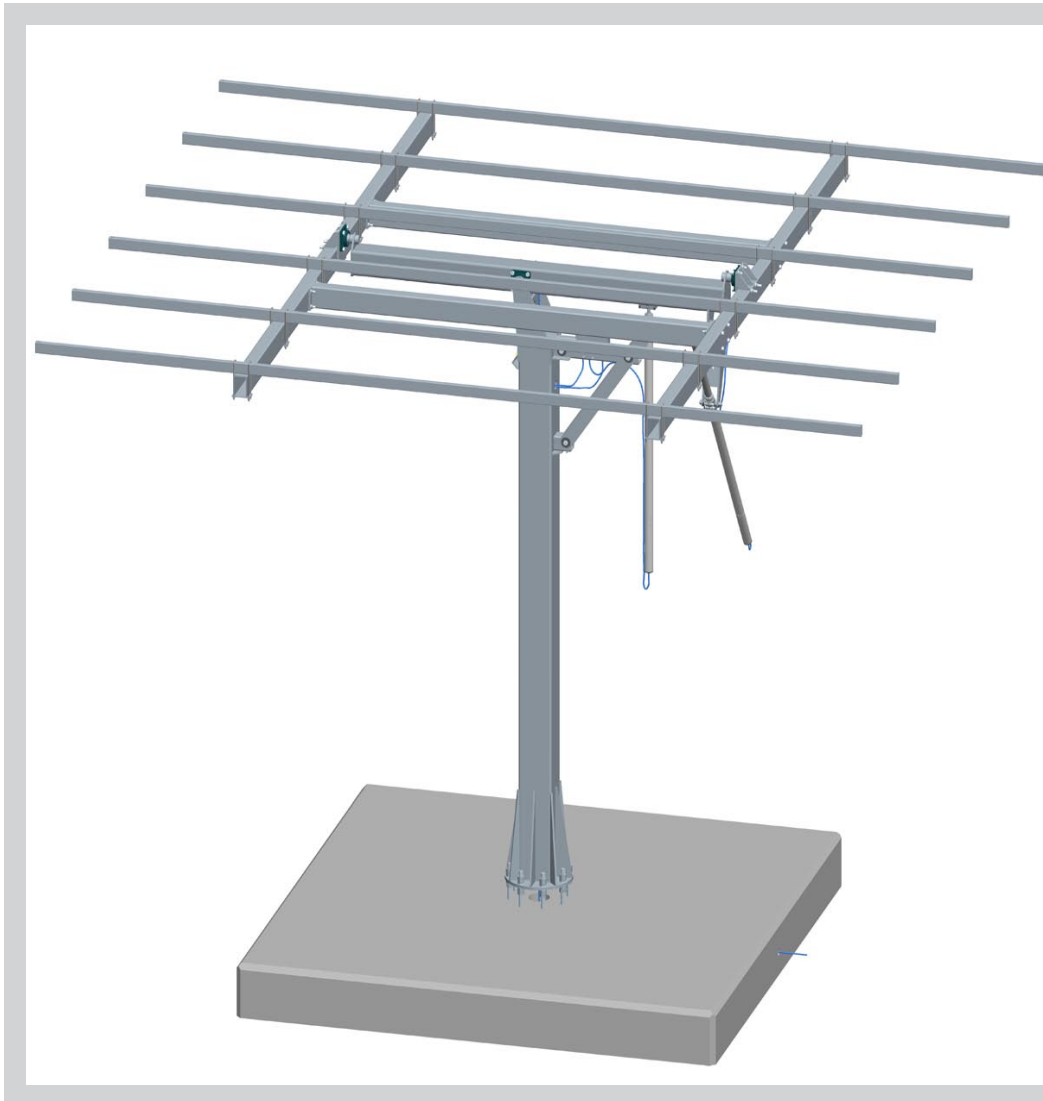
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- Detailed picture





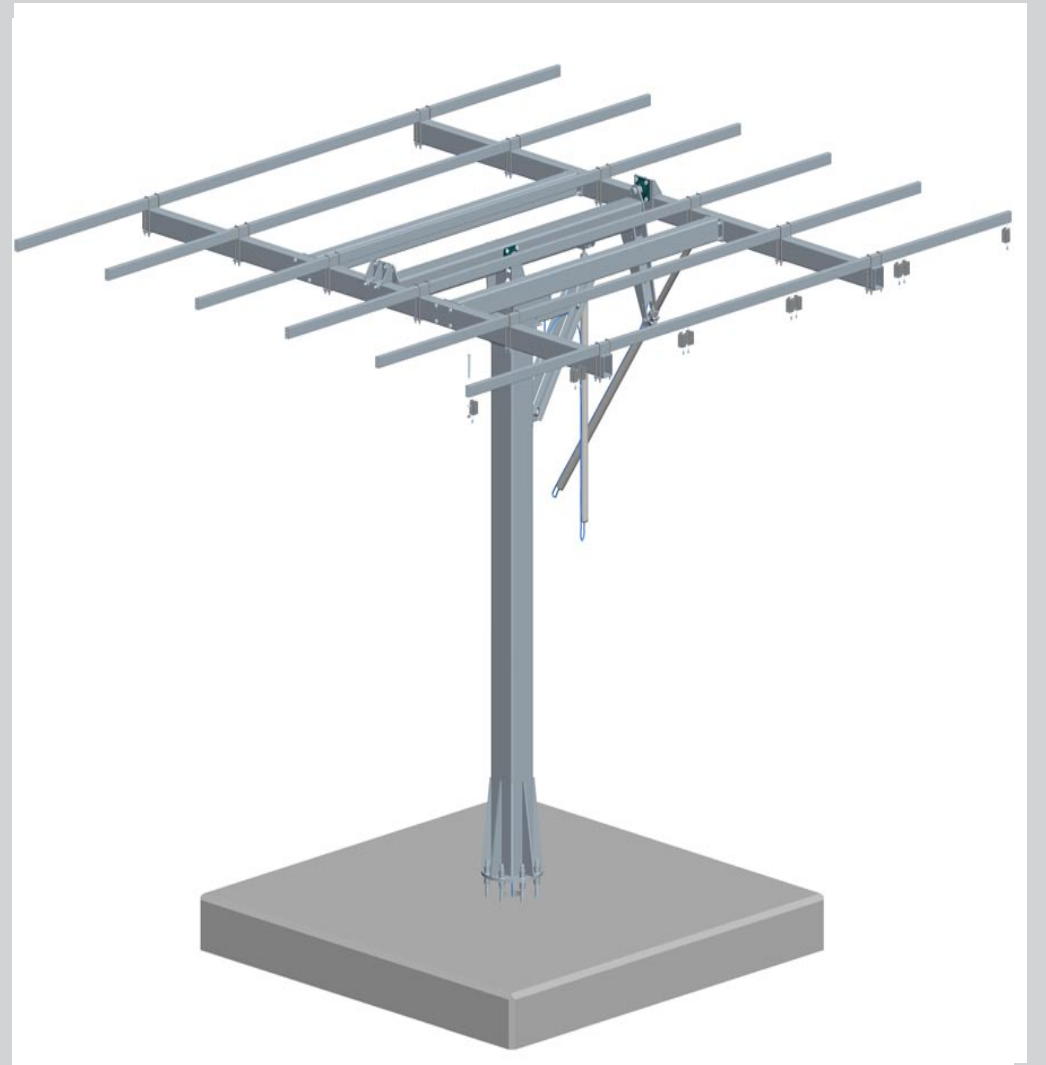
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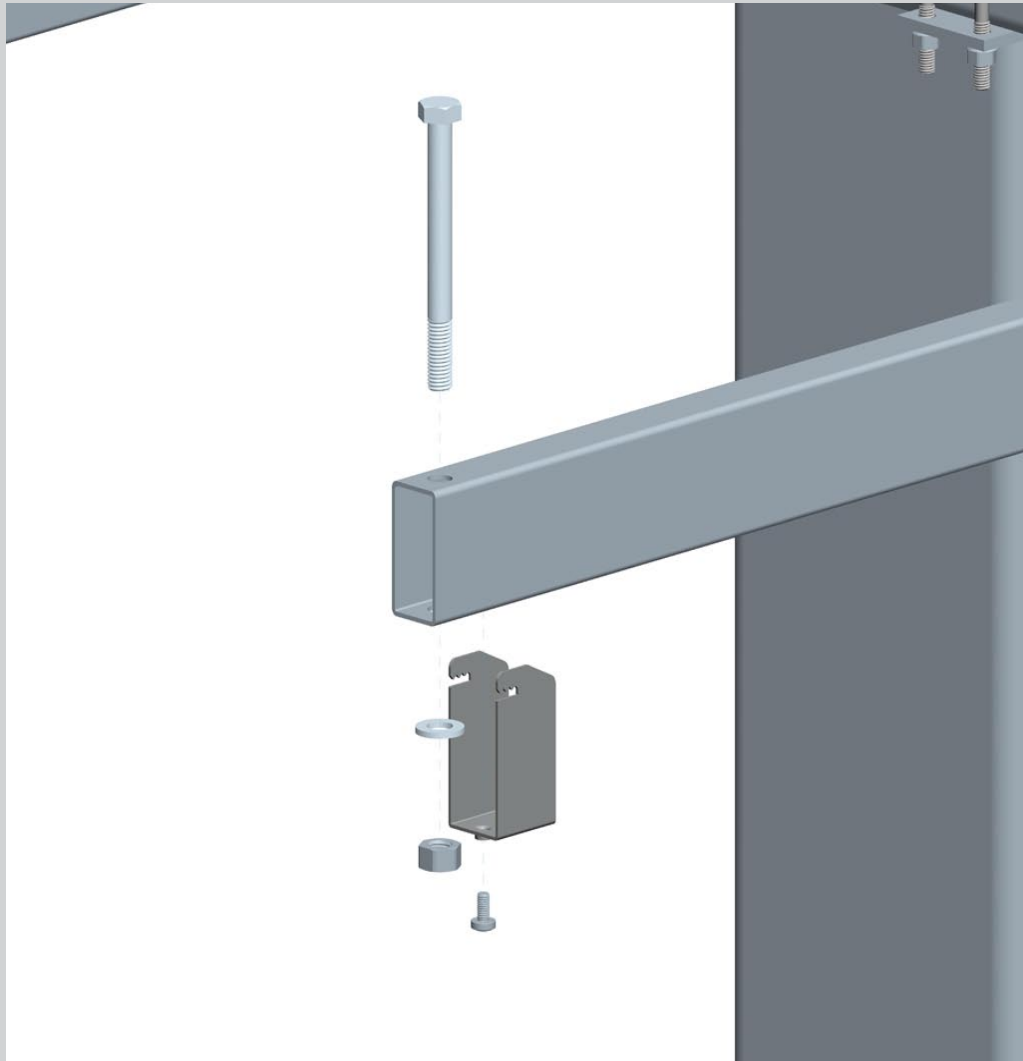
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### STEP 12:

- Grab solar panel with the solar tootherd clamp and fix it with screw as is shown, four times for one panel at each cross point.
- Repeat this 15 times for 15 solar panels.



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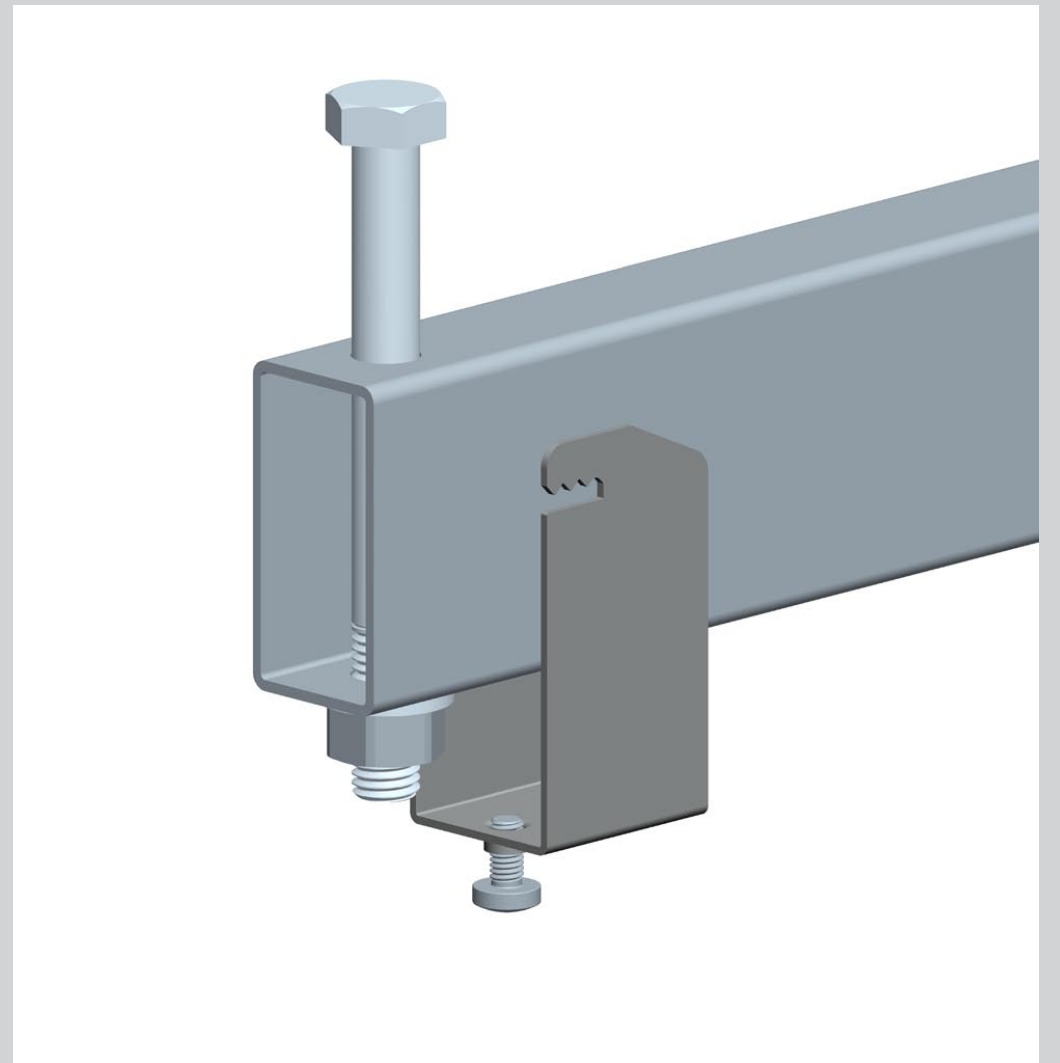


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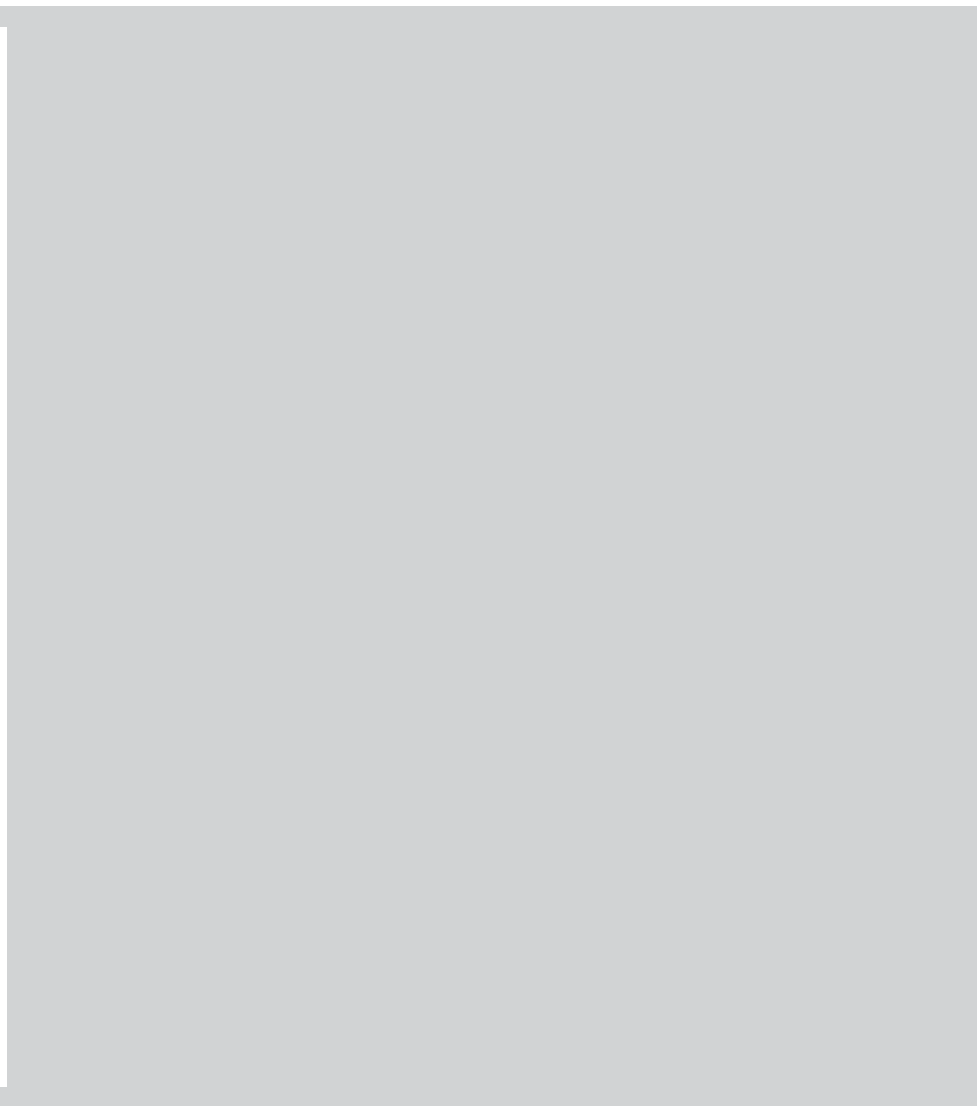
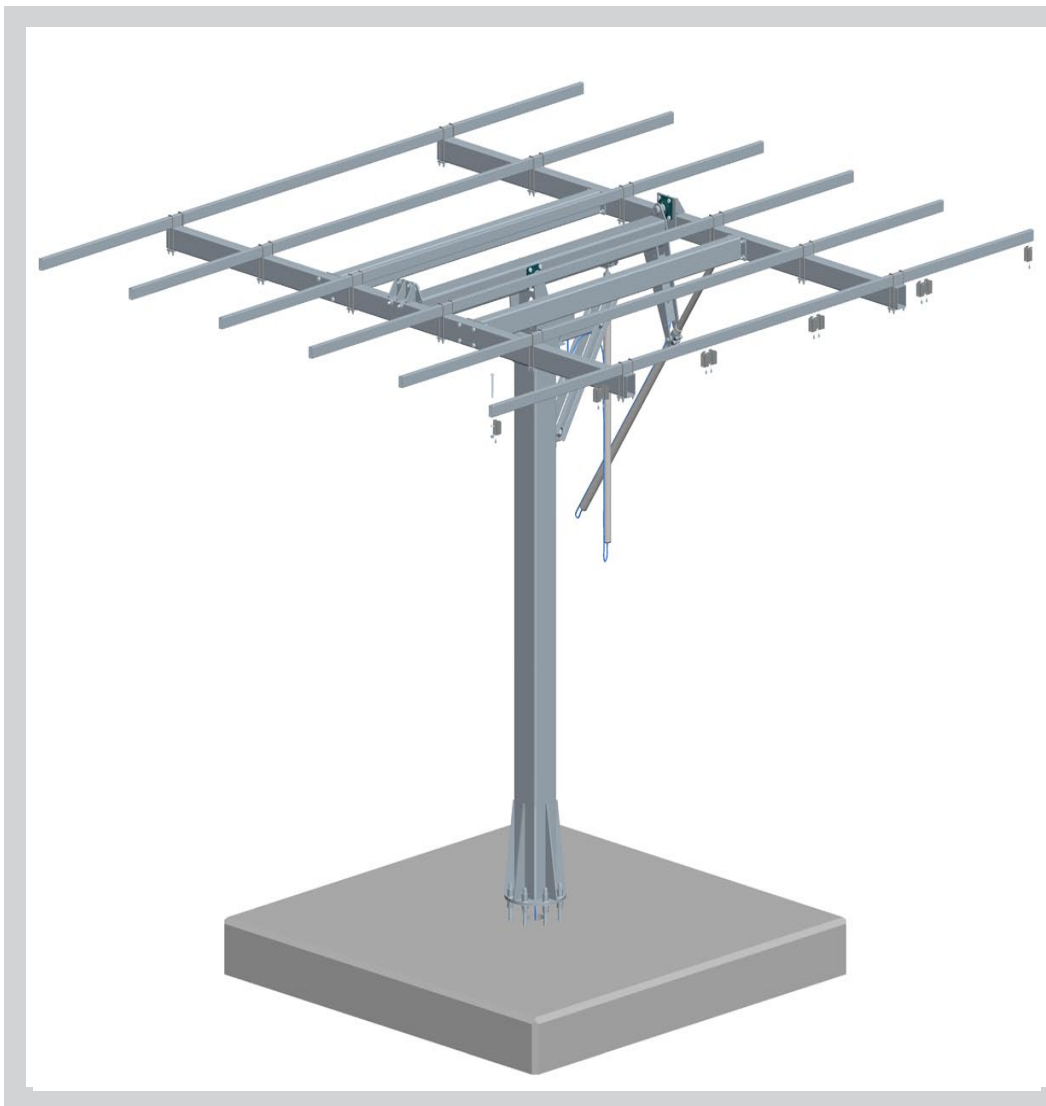
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- On tubes mount solar panel as is shown.
- Grab solar panel with the solar tootherd clamp and fix it with screw as is shown, four times for one panel at each cross point.
- Repeat this 15 times for 15 solar panels.



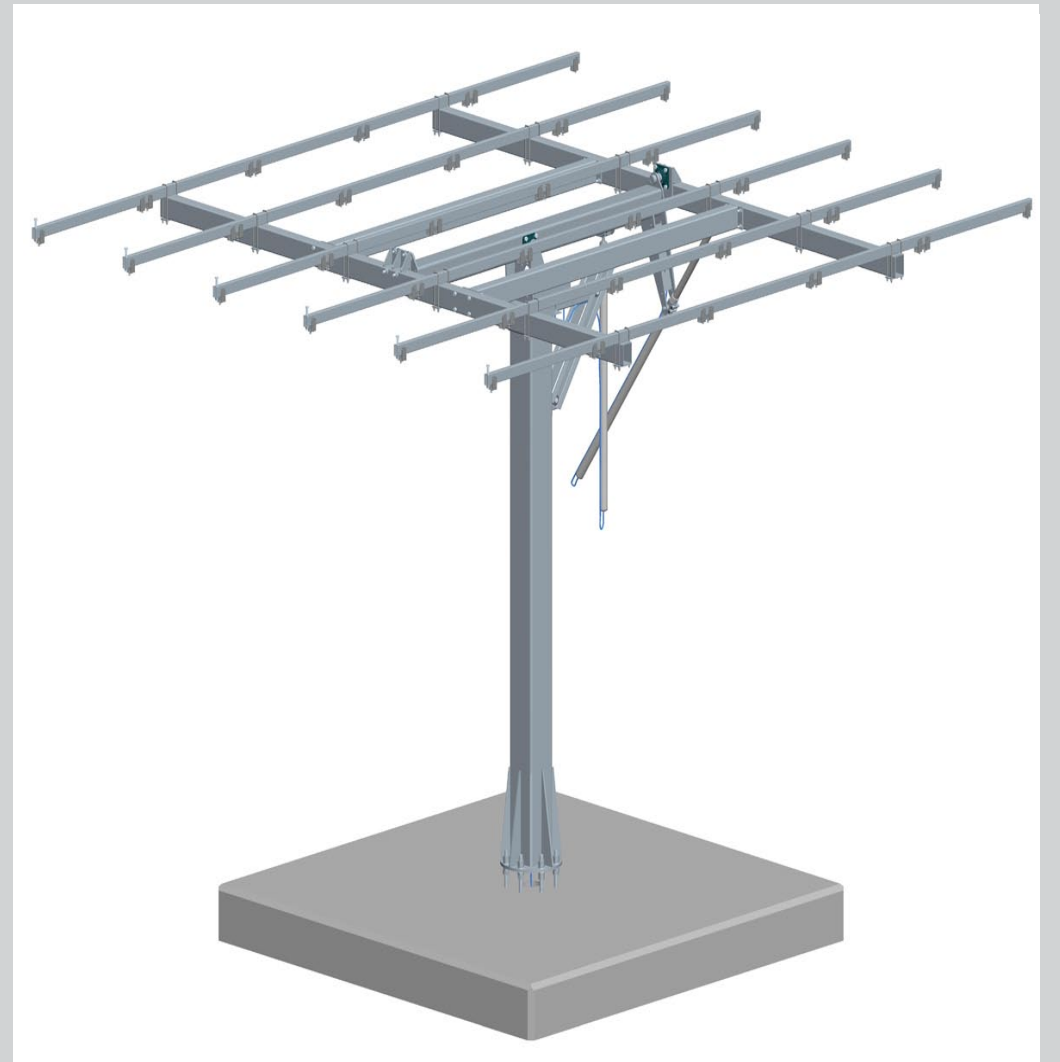


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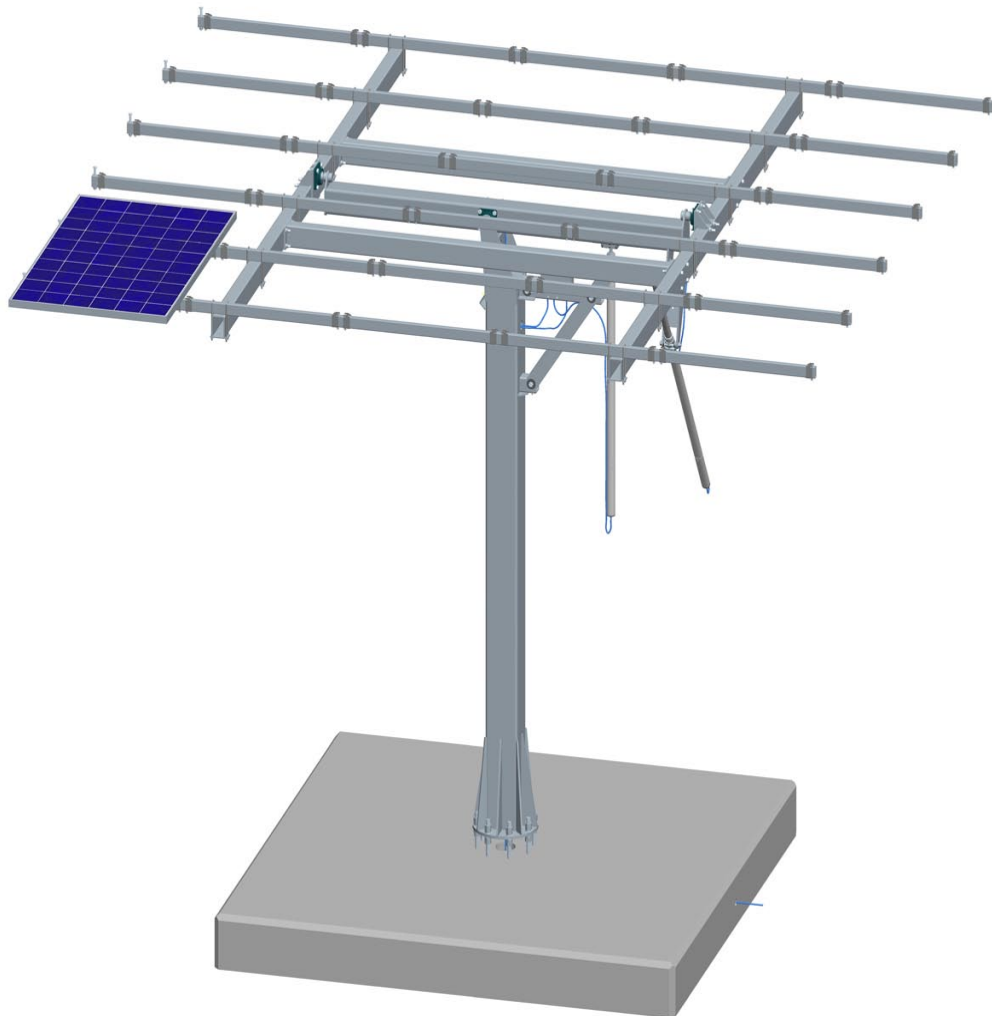




Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P



### Step 13:

- Take the panel and fix it as is shown

## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

- Detailed picture



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P



- Detailed picture

## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P

- Finished construction



## Manual for installation and usage of Solar Tracker 2-Axis ST44M3V15P



- Finished construction



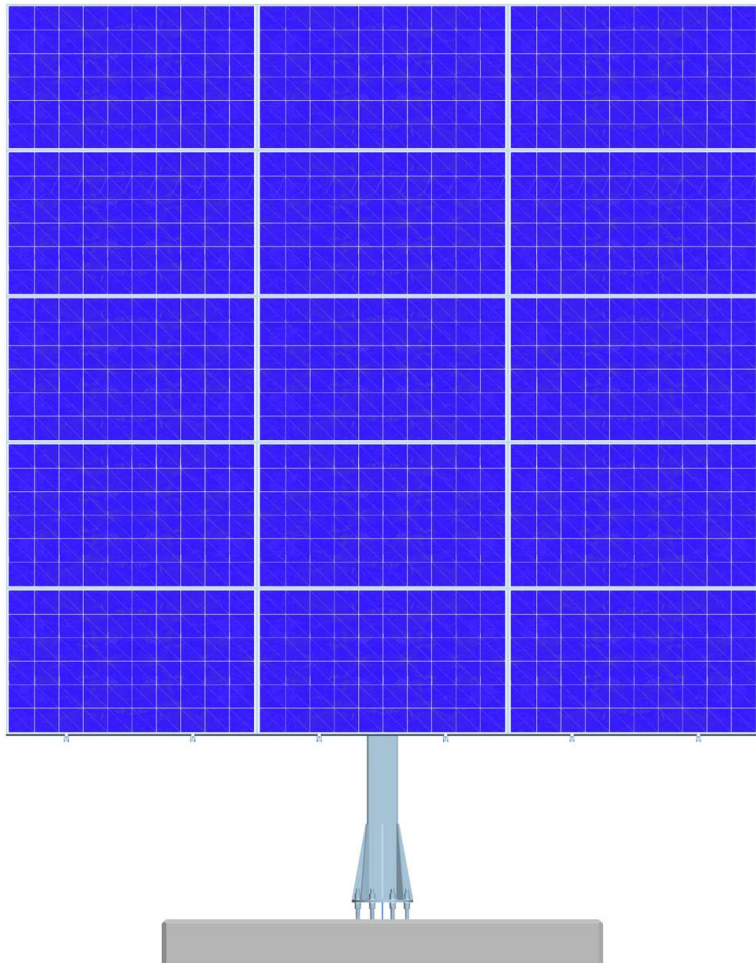
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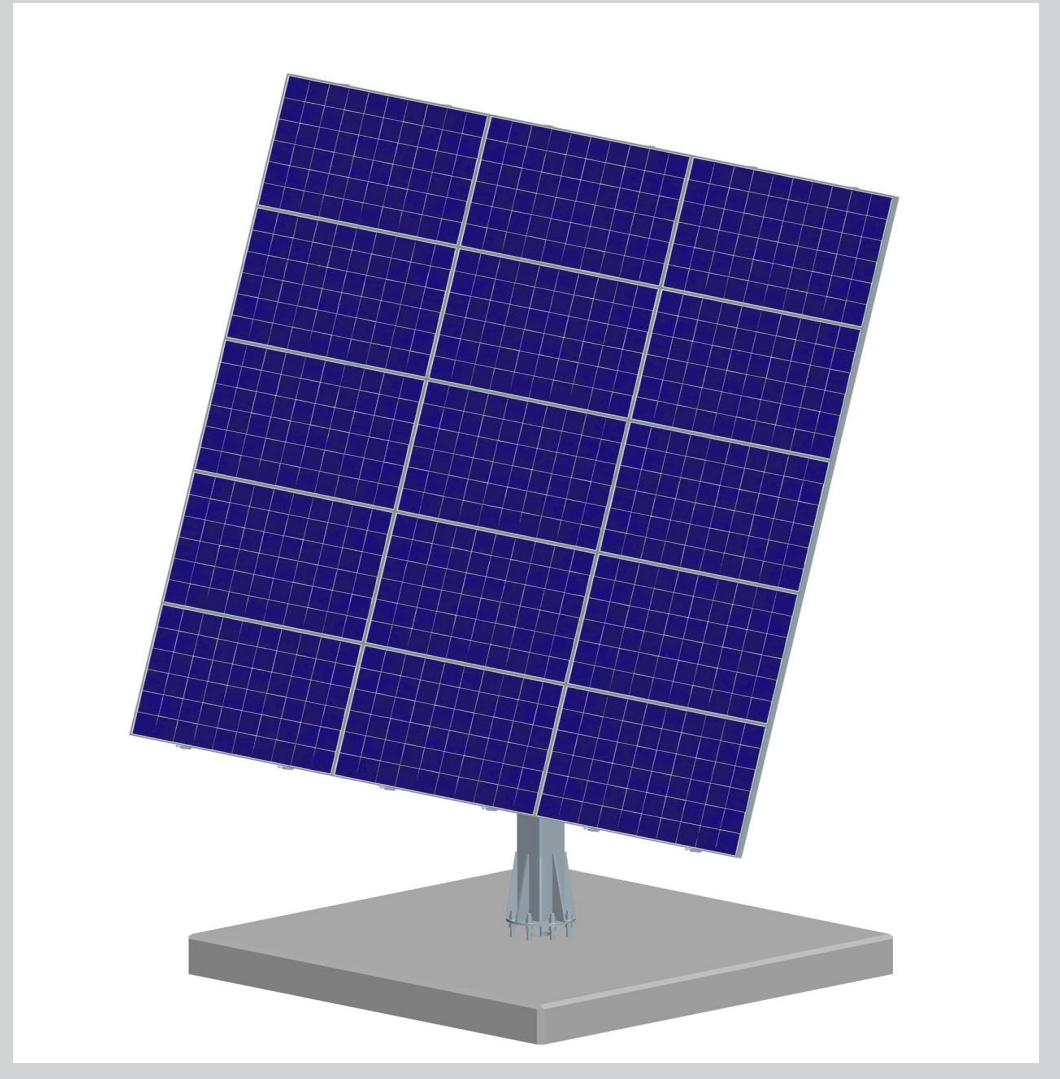
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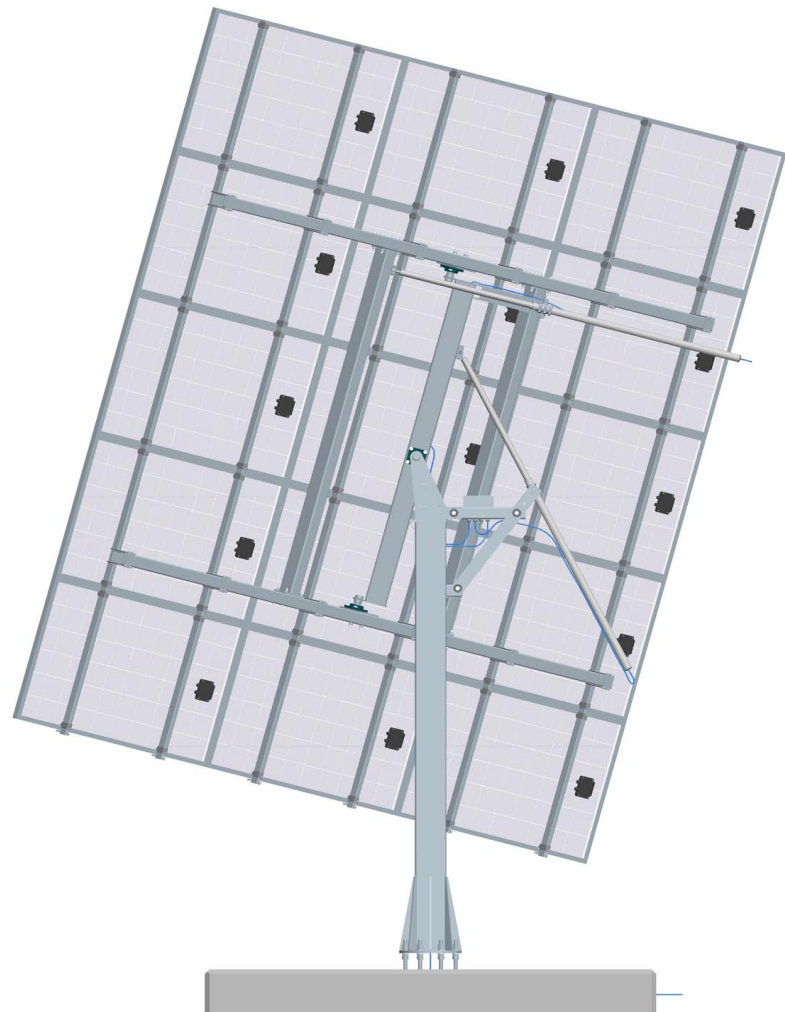
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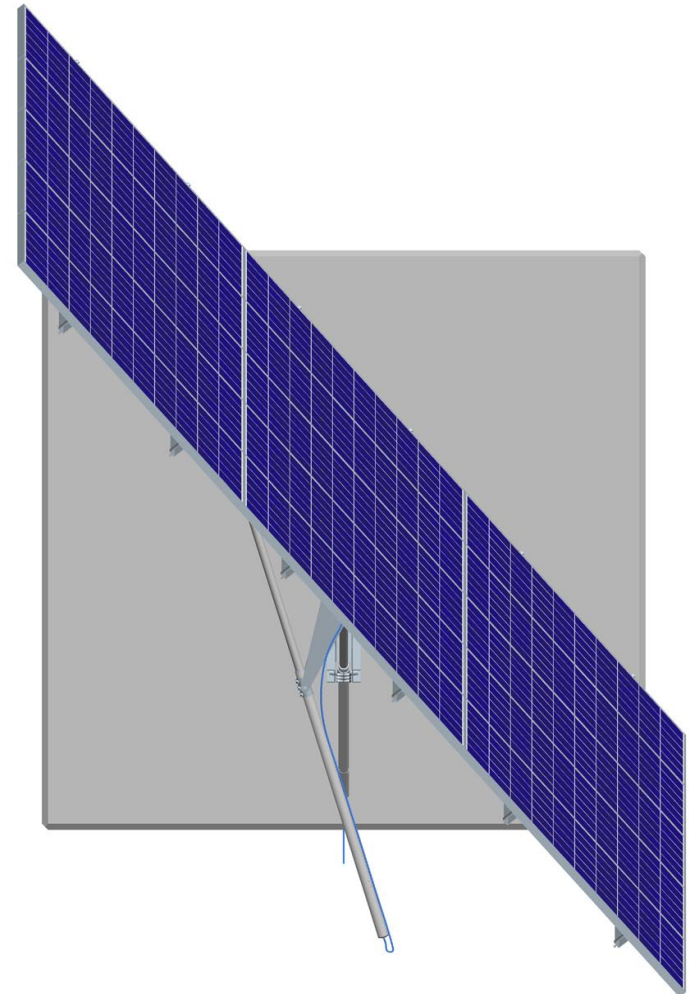
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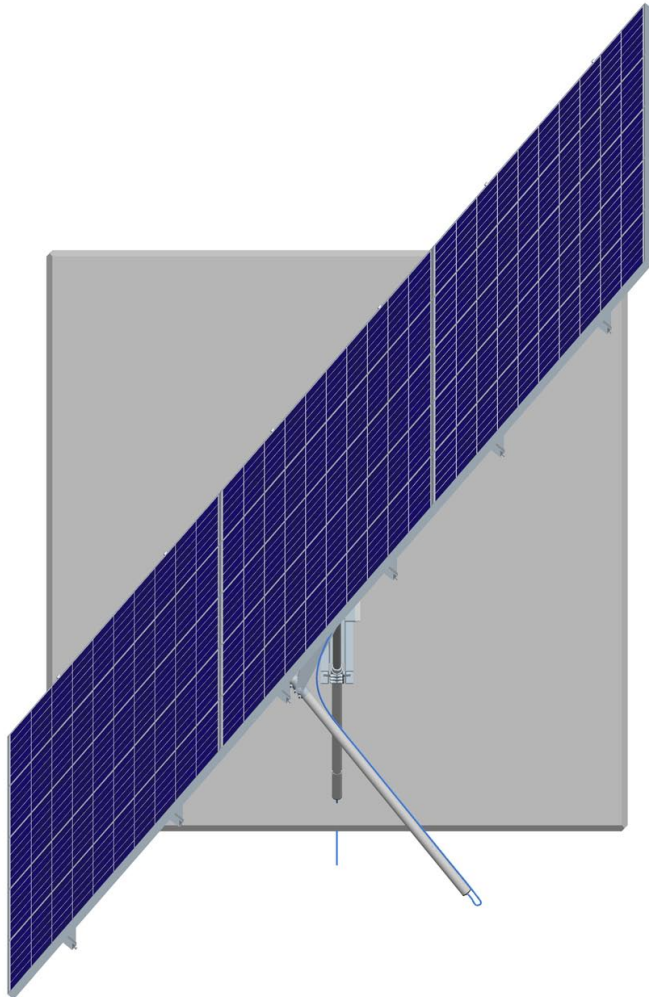
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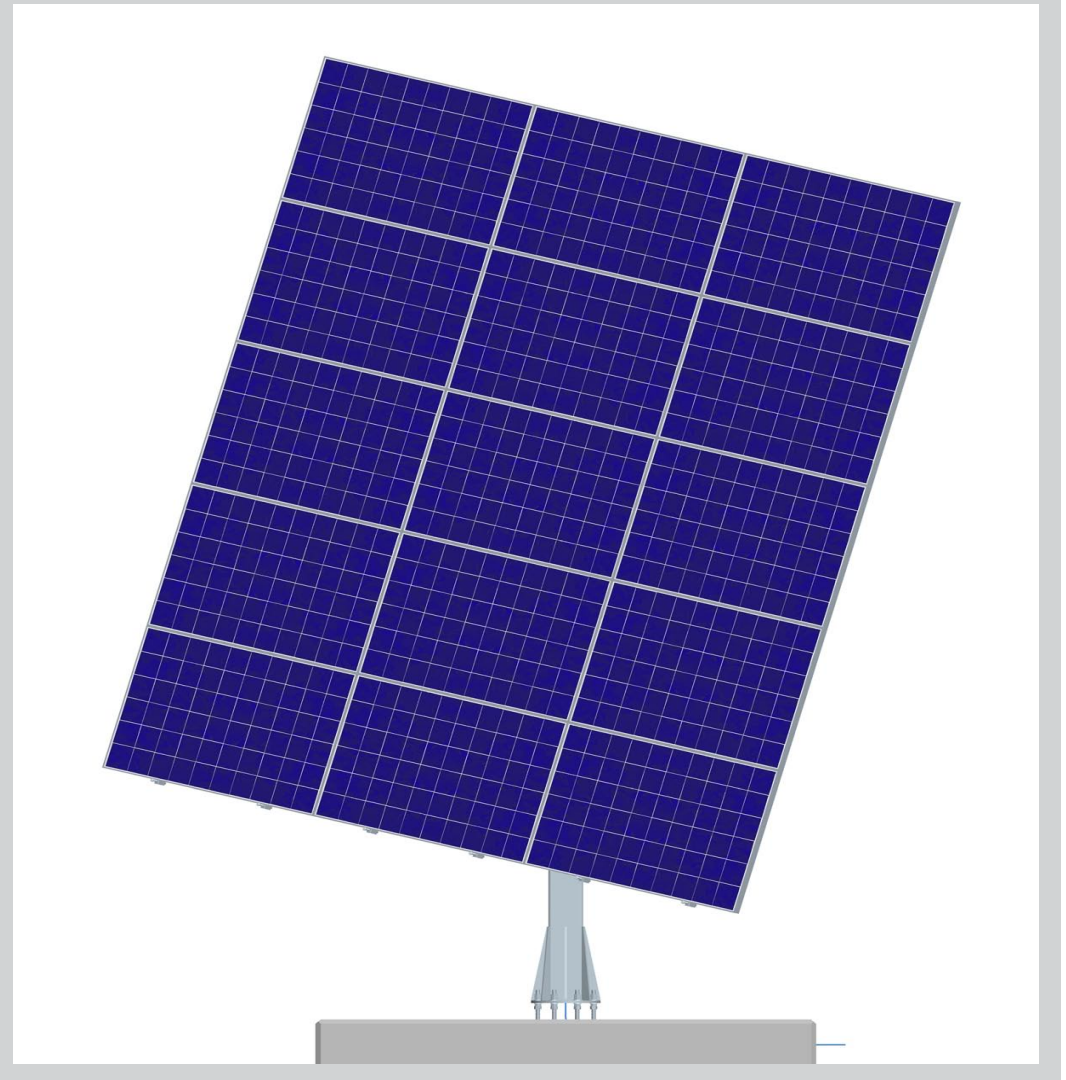
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- Finished construction

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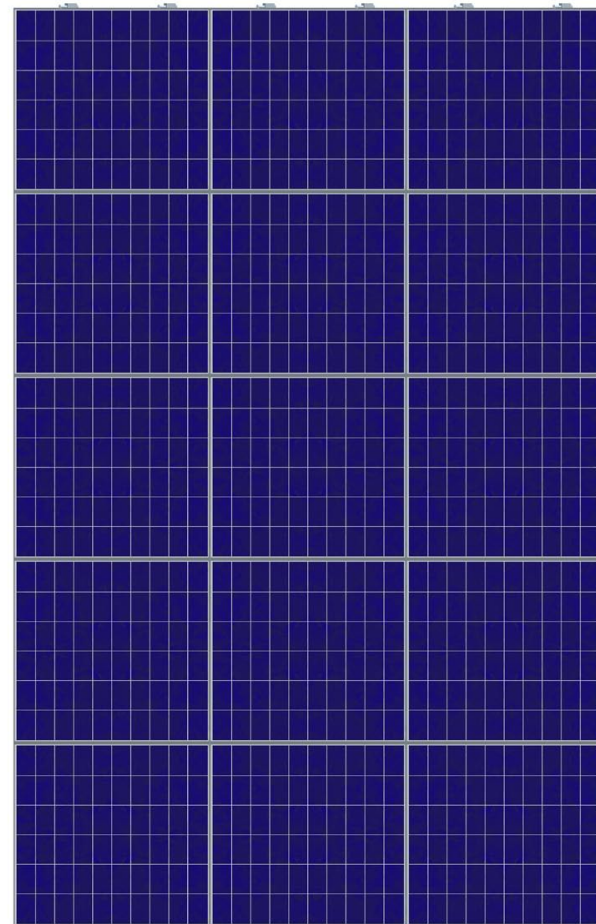
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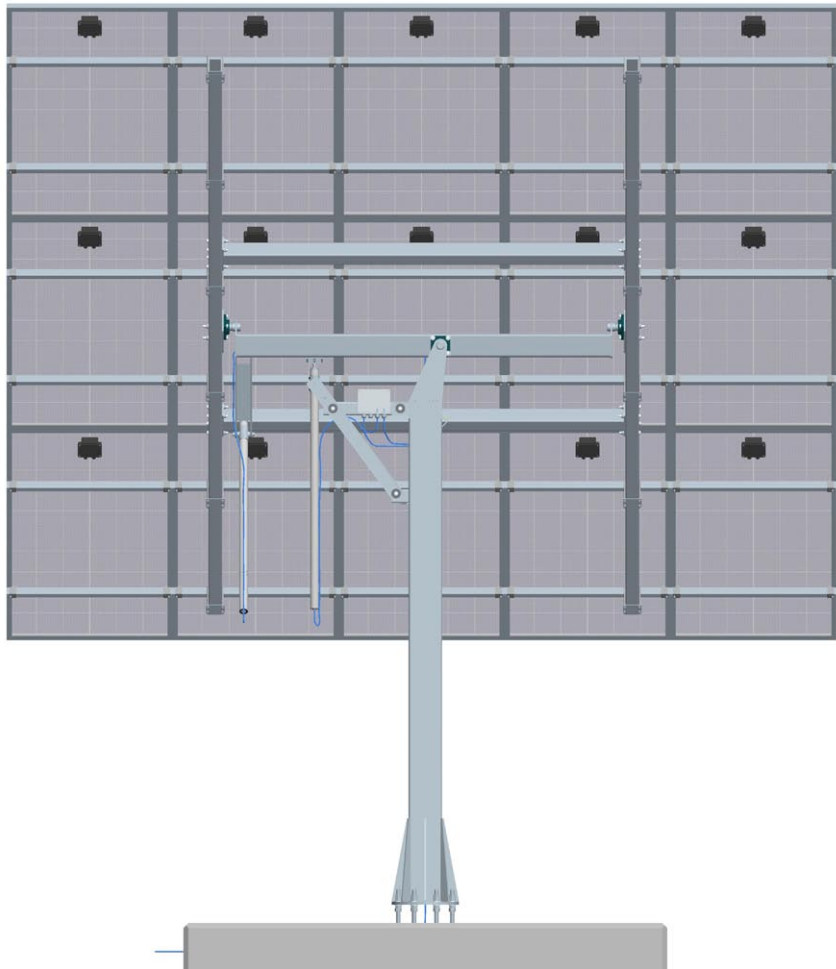


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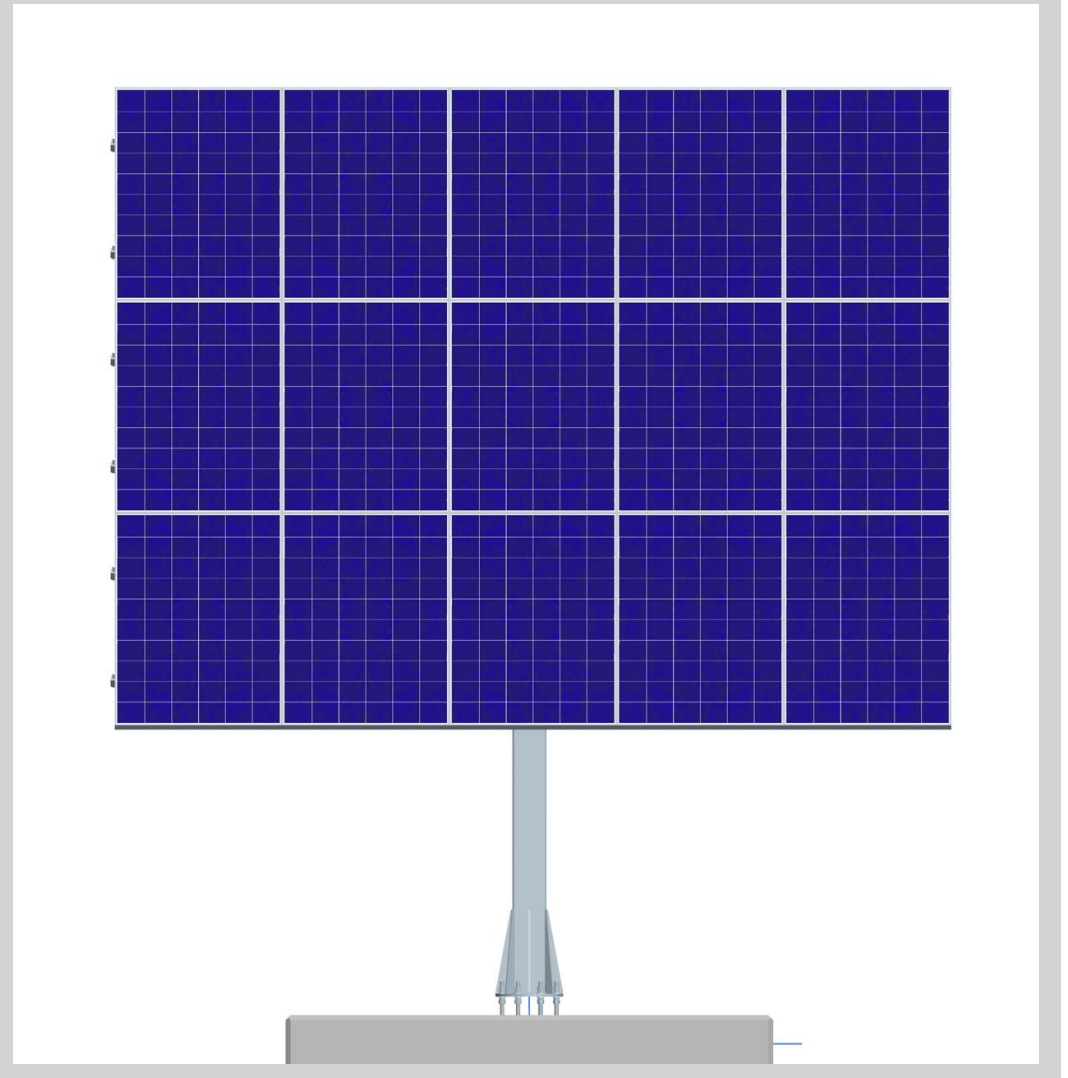


- Finished construction



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- Finished construction



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