

Instructions

Educational PV system

Assembly and operating instructions

Third edition, August 2025

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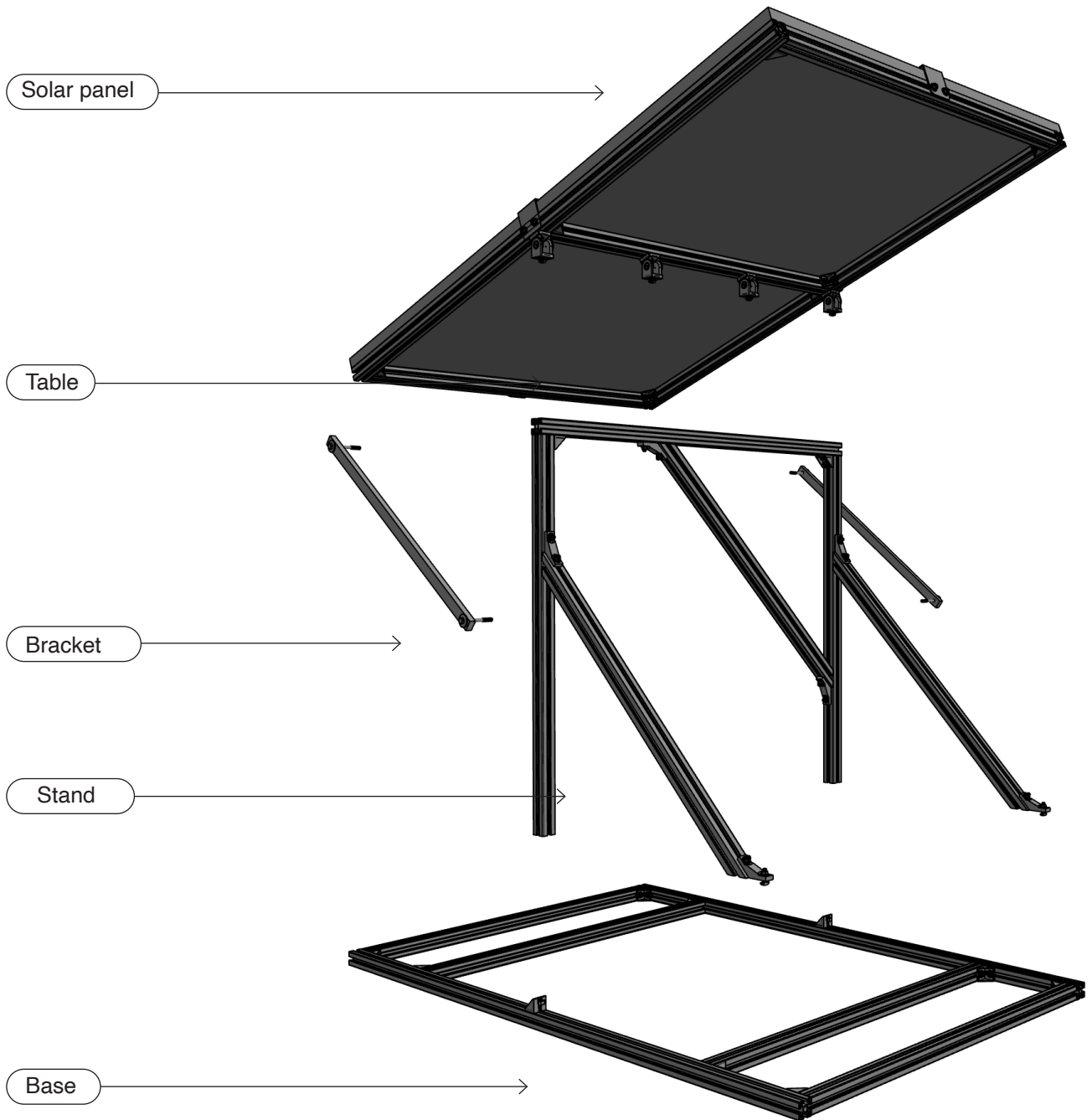
Educational PV-System

Installation & operating instructions

Content

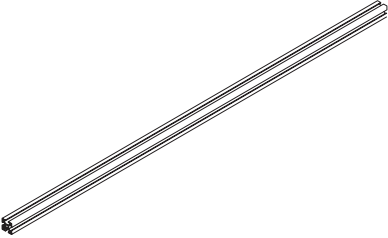
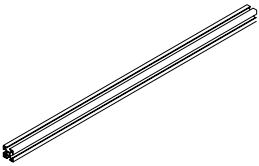
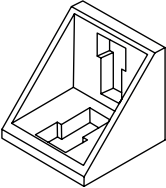
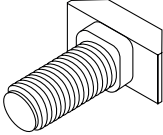
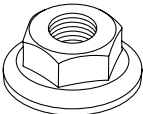
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01 Components



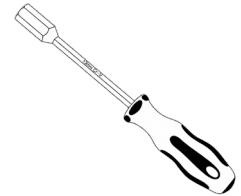
02 Assembly instruction for base

List of components for base

	Aluminium profile long (176.5 cm)	2x
	Aluminium profile short (106 cm)	4x
	90° Bracket	10x
	Hammer head screw M8 x 20	20x
	Collar nut M8	20x

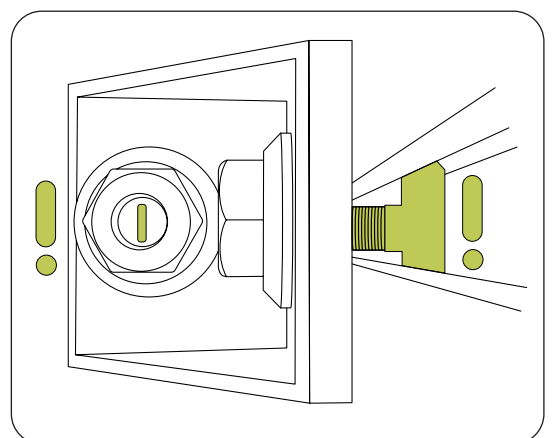
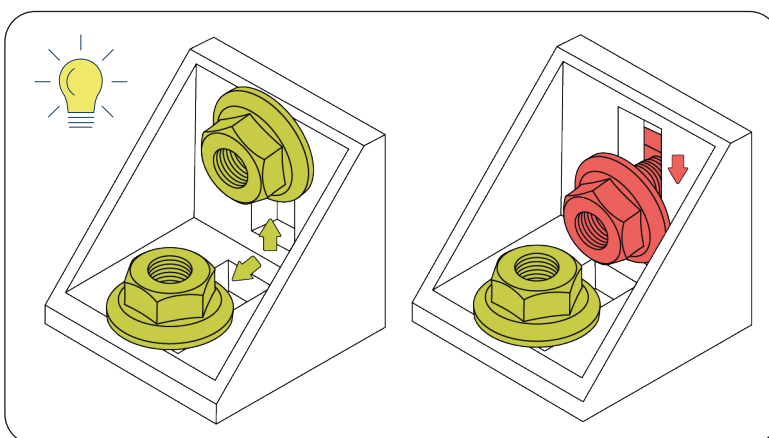
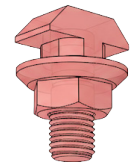
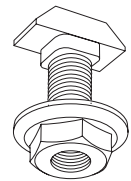
Tool

2x Ring wrenches 13

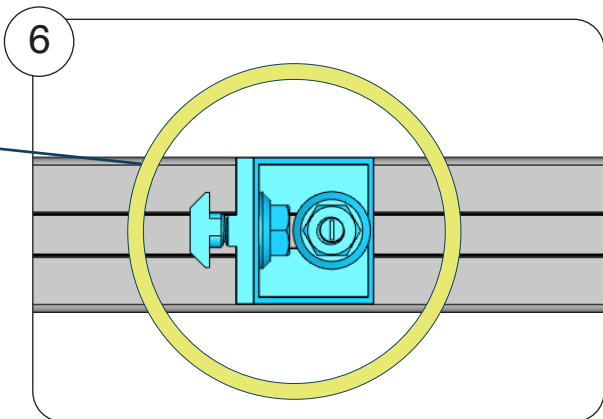
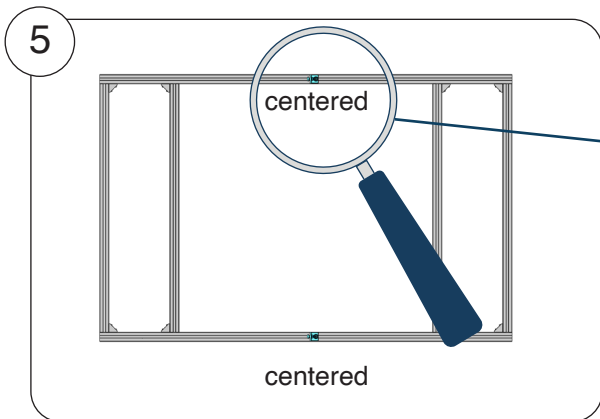
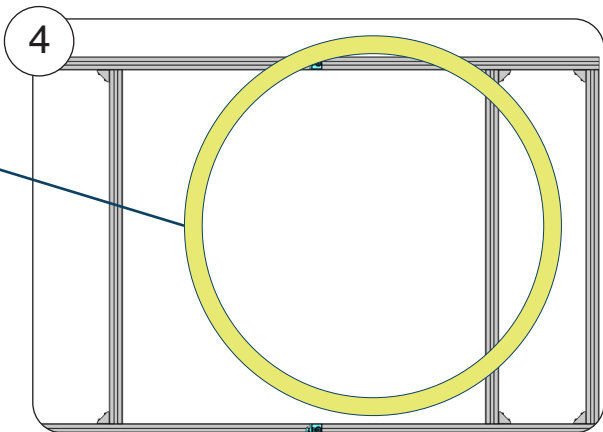
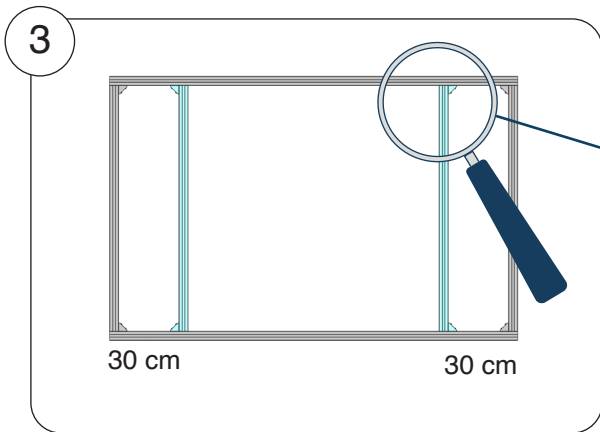
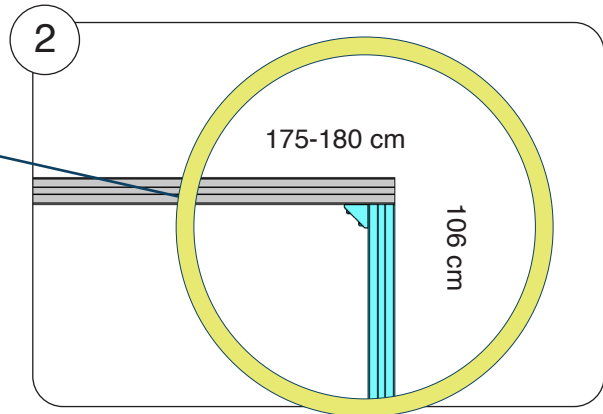
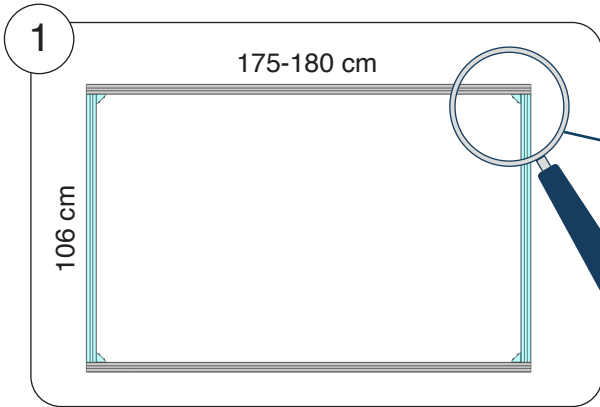


Preparation

20x

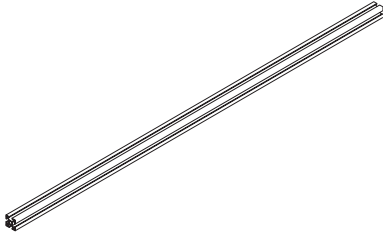
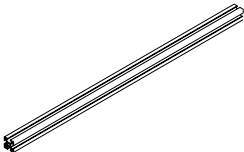
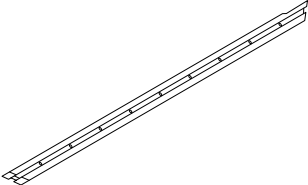
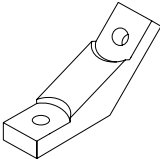
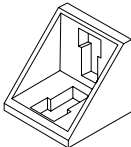
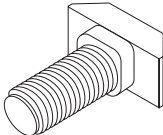
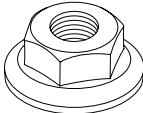


Carry heavy components together to prevent injuries.



03 Assembly instruction for stand

List of components for stand

	Aluminium profile long (114cm)	1x
	Aluminium profile short (100 cm)	2x
	beveled aluminium profile with holes (100 cm)	3x
	135° Brackets	6x
	90° Brackets	2x
	Hammer head screw M8 x 20	16x
	Collar nut M8	16x

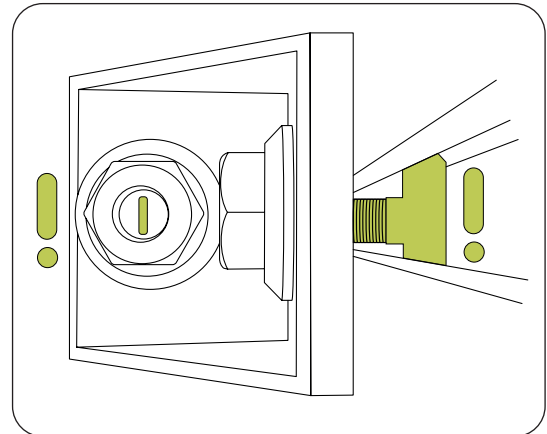
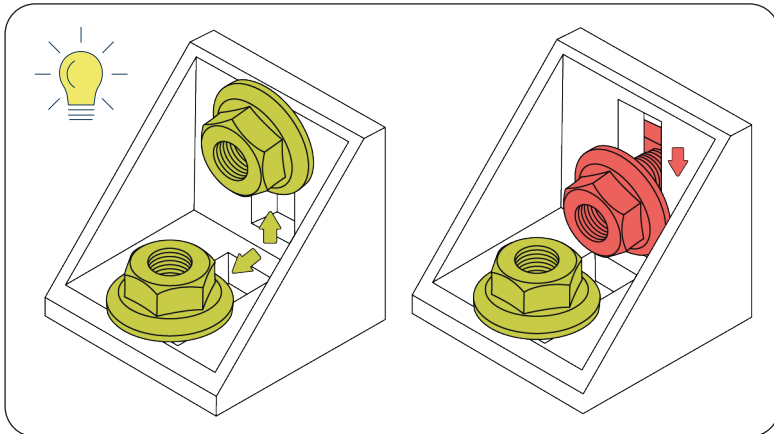
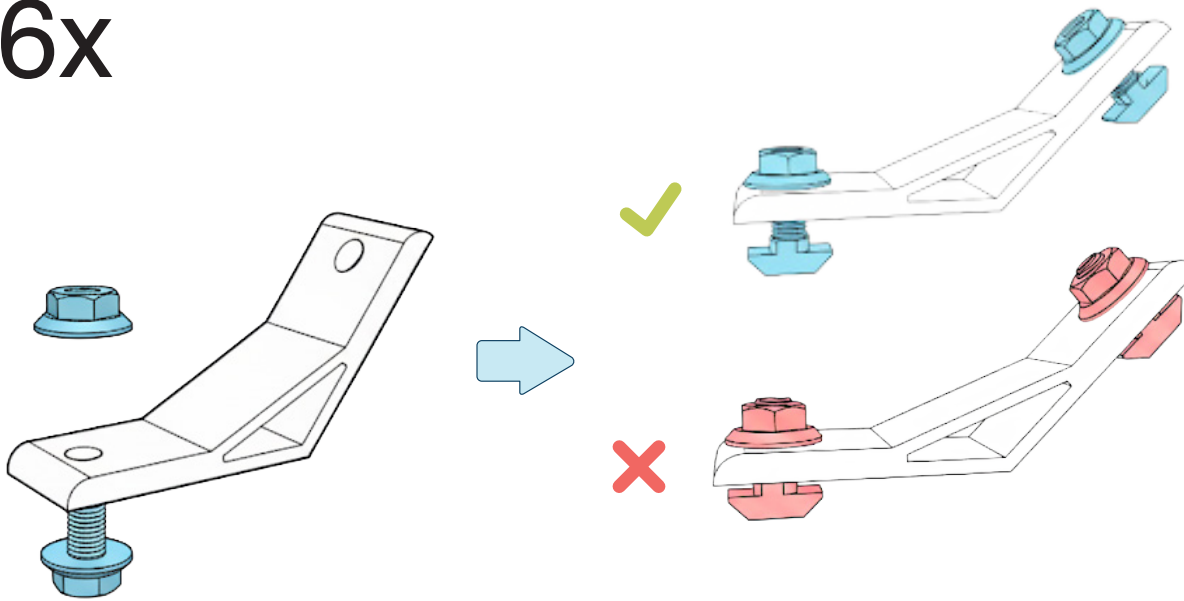
Tool

1x Ring wrenches 13



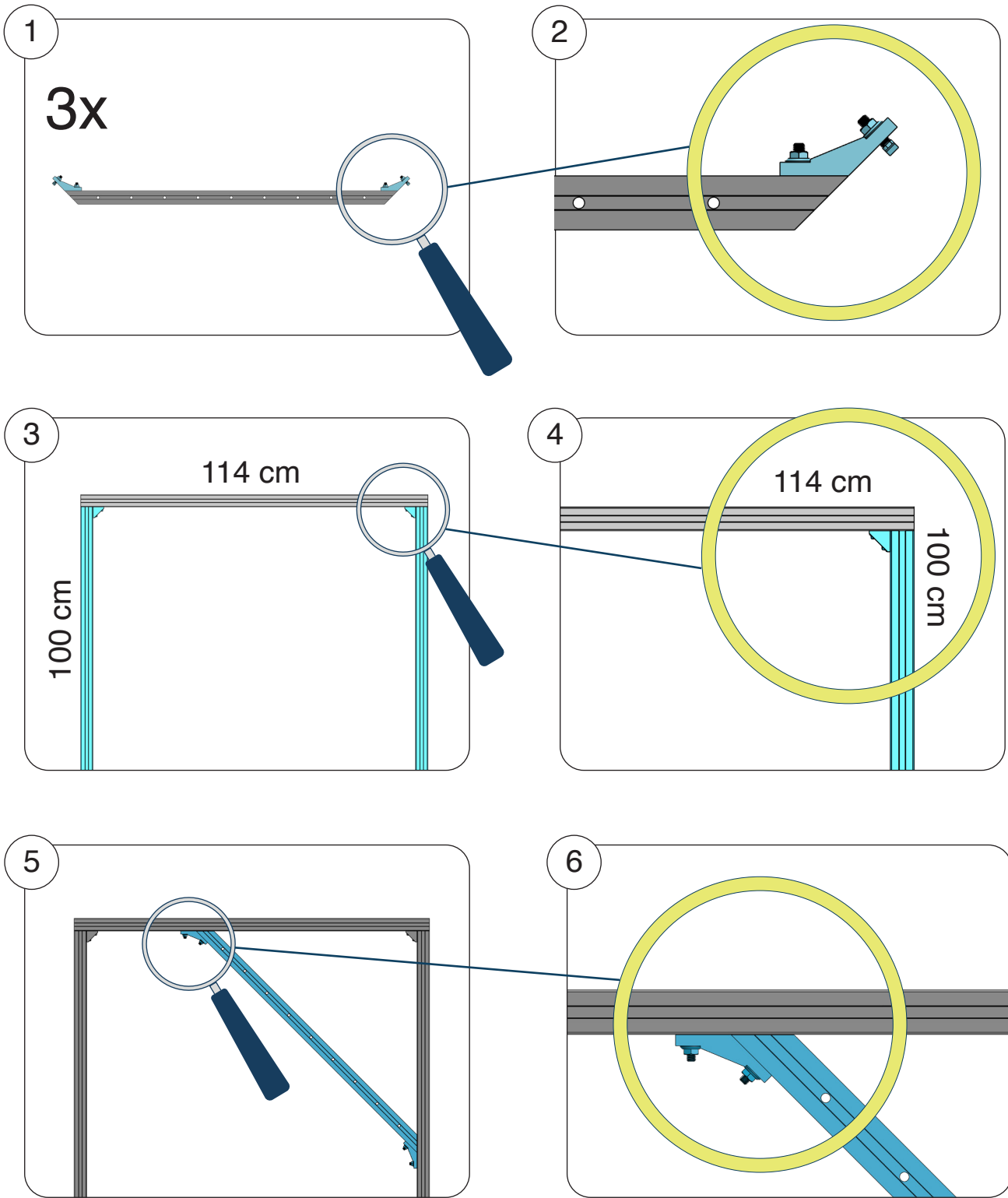
Preperation

6x



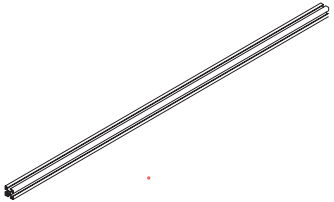
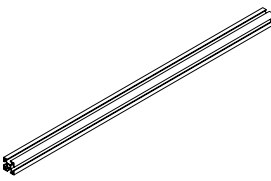
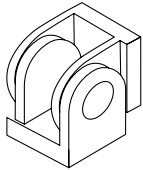
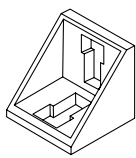
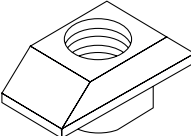
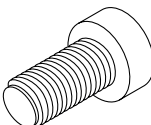
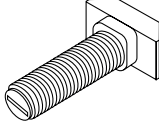
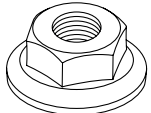
Carry heavy components together to prevent injuries.

Stand



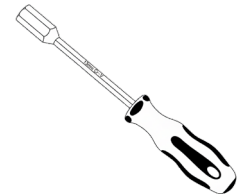
04 Assembly instruction for table

List of components for table

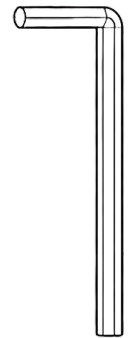
	Aluminium profile long (176.5 cm)	2x
	Aluminium profile short (106 cm)	3x
	Pivot joint	4x
	90° Bracket	8x
	Hammerhead nut M8	8x
	Hexagon socket head cap screw M8 x 15	8x
	Hammer head screw M8 x 20	16x
	Collar nut M8	16x

Tools

2x Ring
wrenches 13

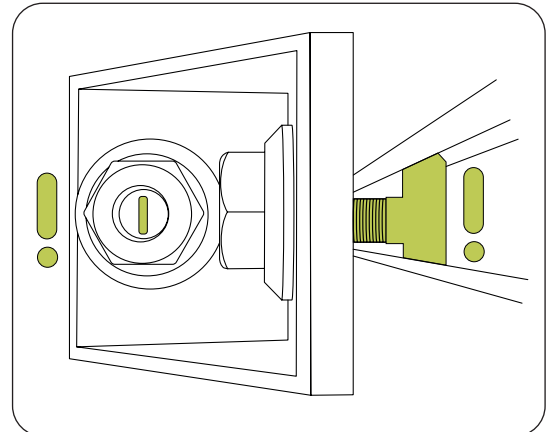
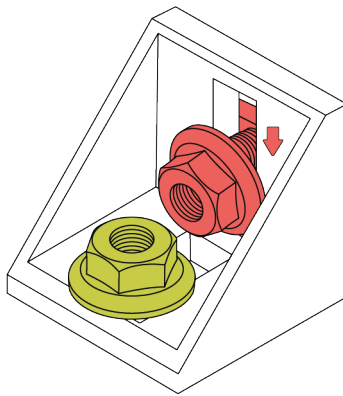
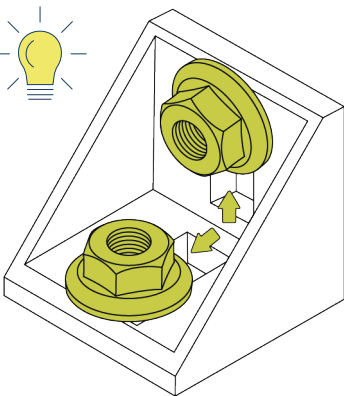
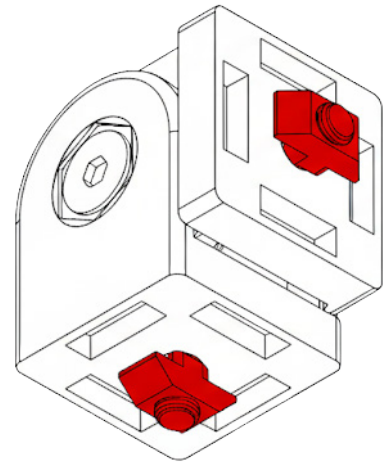
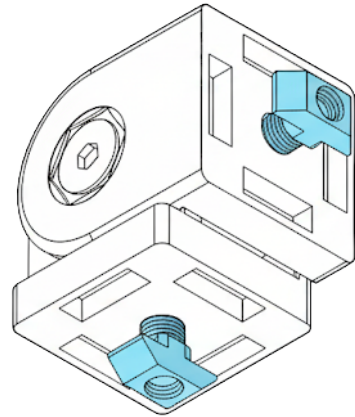
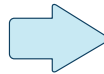
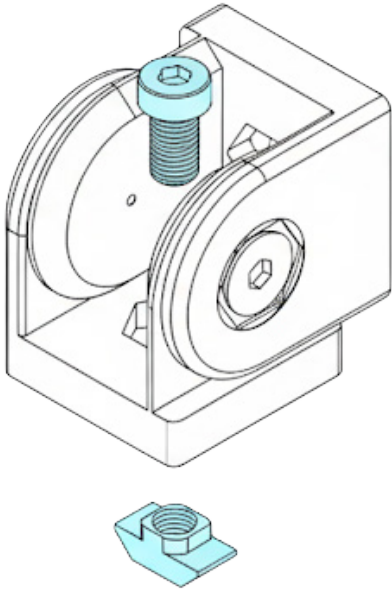


2x Allen
keys



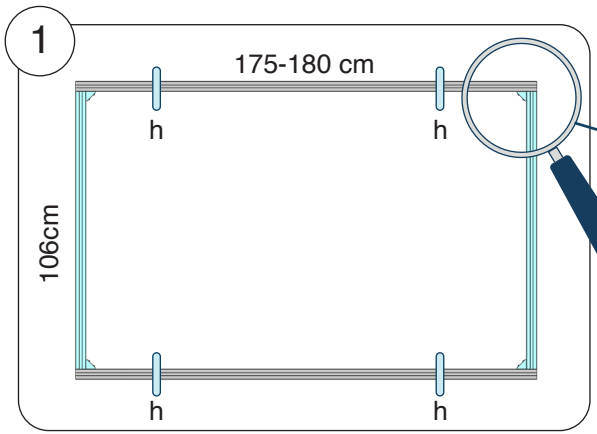
Preperation

4x

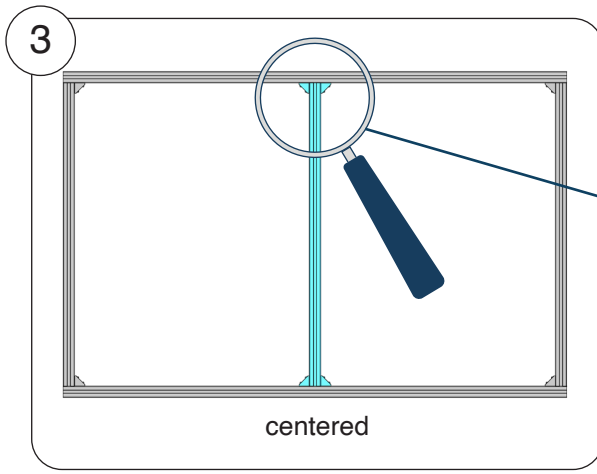
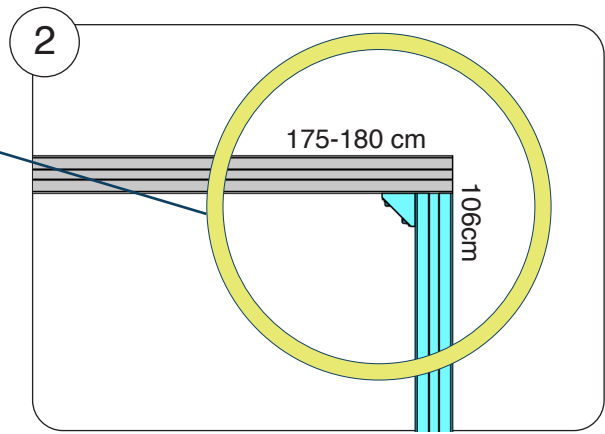


Carry heavy components together to prevent injuries.

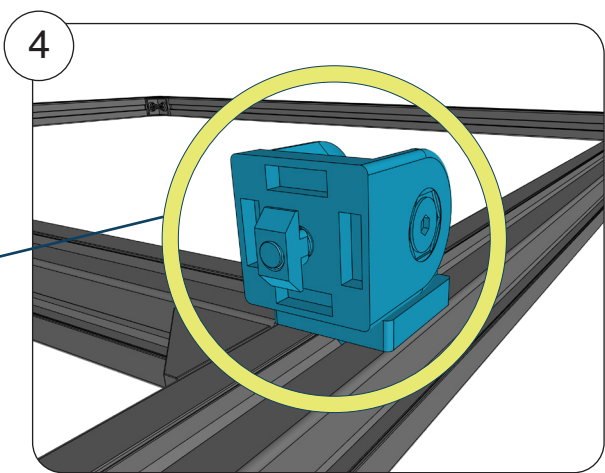
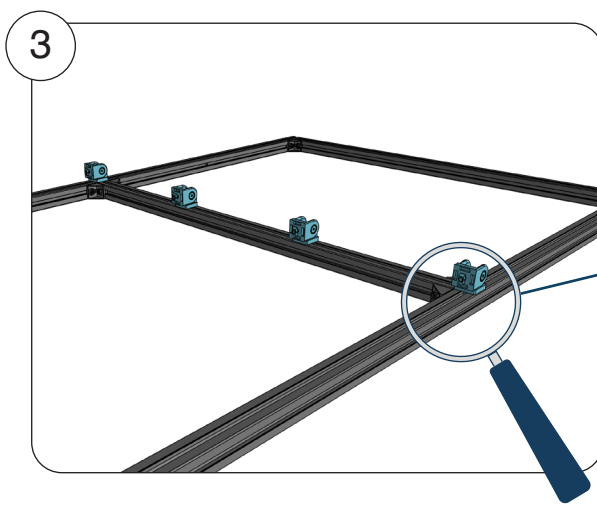
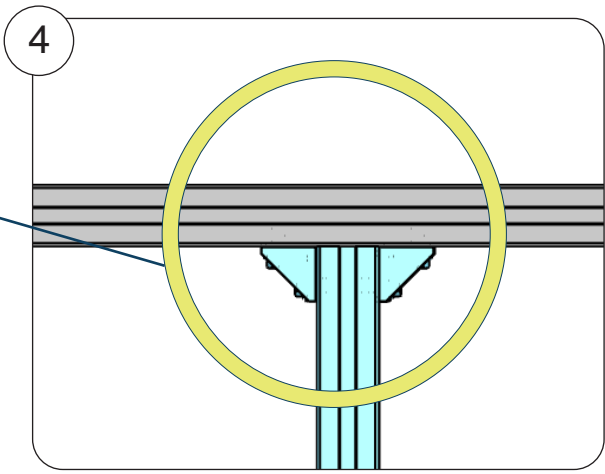
Table



h = horizontal holes



centered



05 Assembling the components

Stand + Base

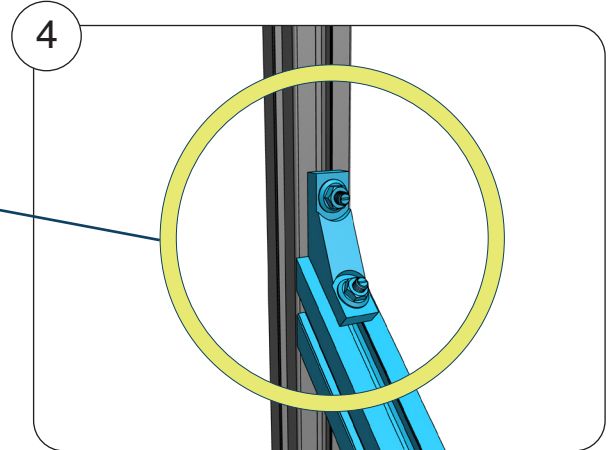
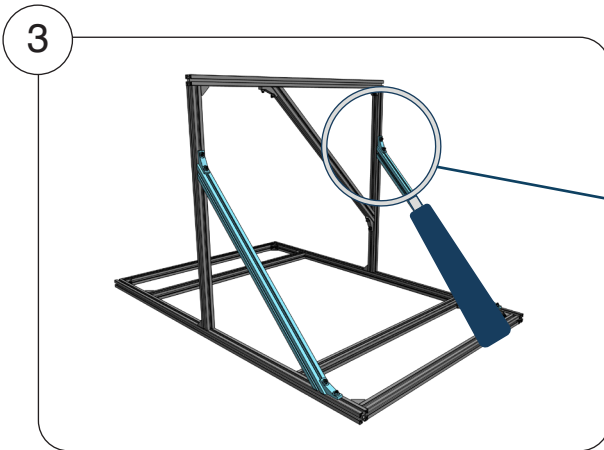
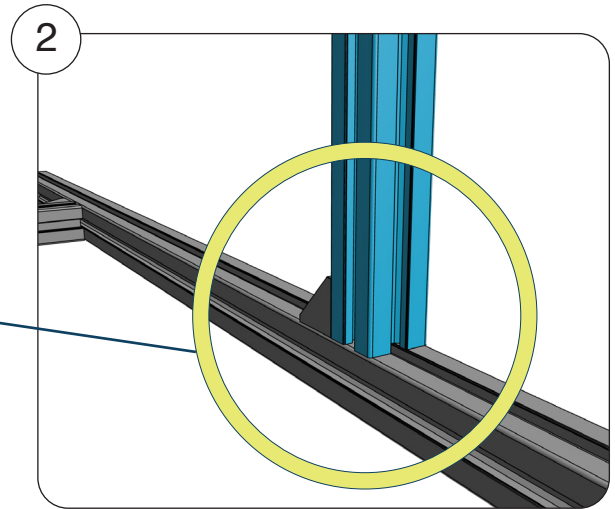
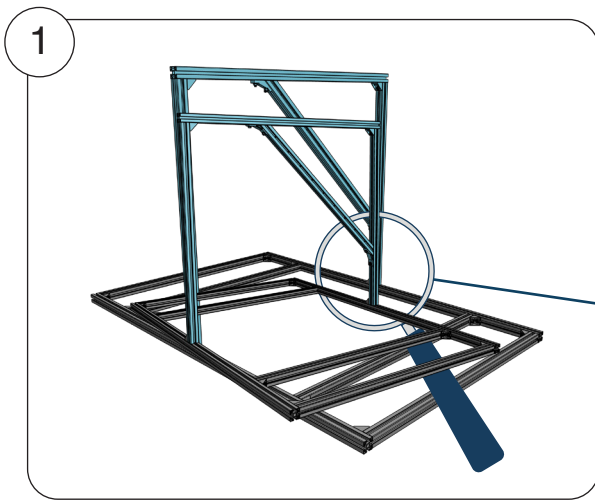
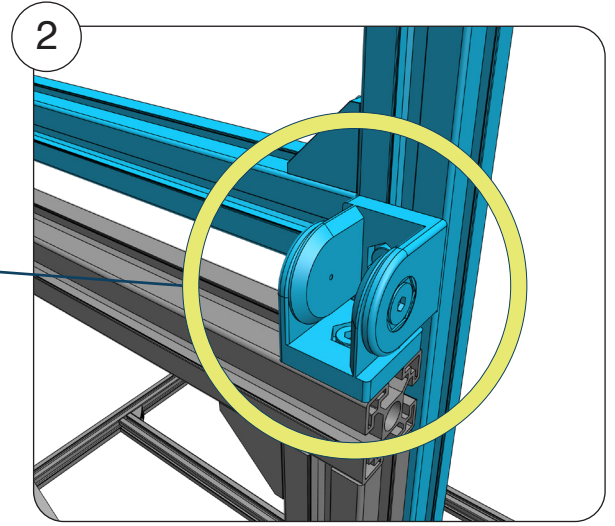
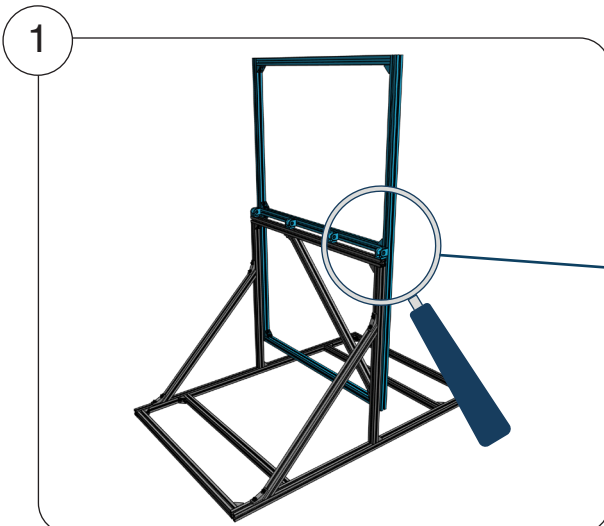
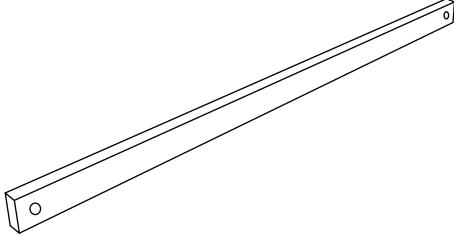
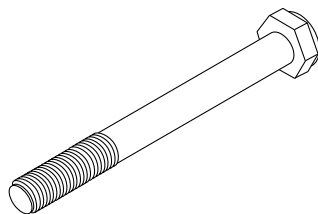
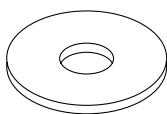
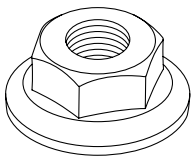


Table + standbase



06 Assembling the bracket

List of components for bracket

	Aluminium profile with holes	2x
	Hexagon head screw M8 x 80	4x
	Washer	4x
	Collar nut M8	4x



Carry heavy components together to prevent injuries.



Two people hold the table at a slight angle while two others attach the brackets to the stand.

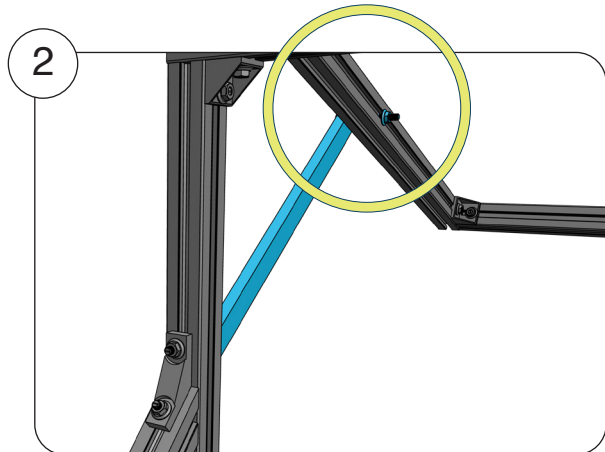
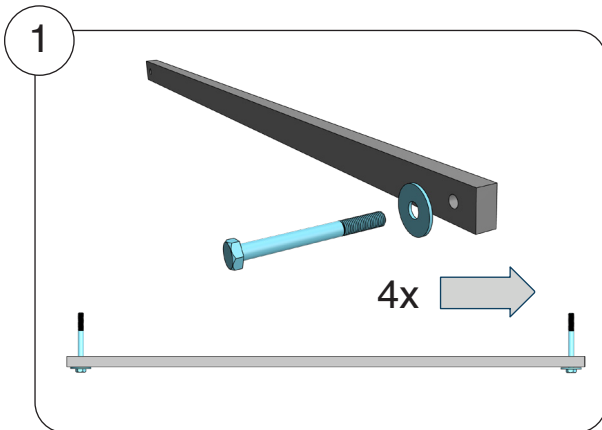


When attaching the Aluminium to the table, make sure that it can still be rotated and only screw it tight after it has been attached to the stand.

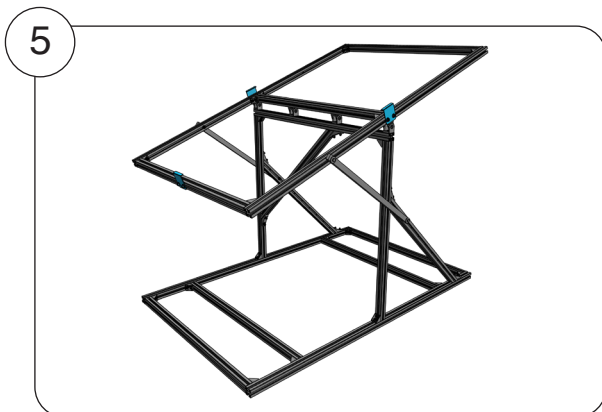
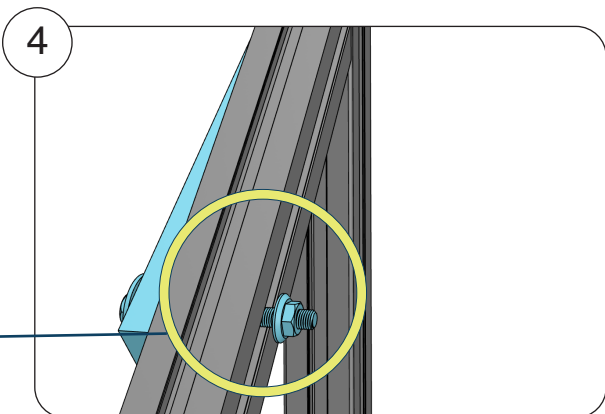
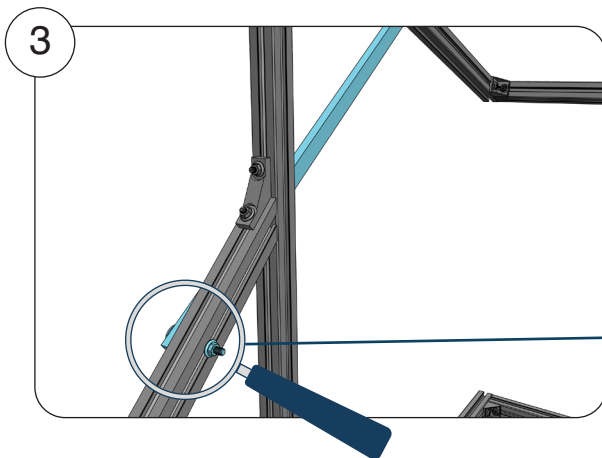


In the following steps, we will align and secure the table. Make sure that the table is tilted toward the sun and use the corresponding holes in the base for this purpose.

First attach the bracket to the table

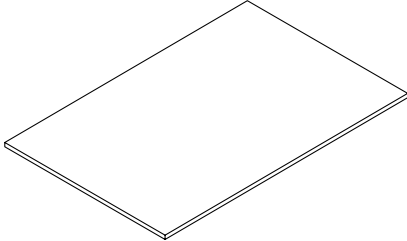
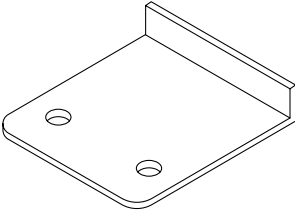
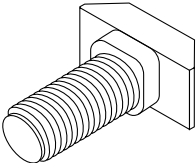
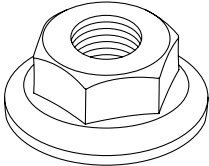


Then secure the bracket to the base



07 Assembling the solar panel

List of components for solar panel

	Solar panel	1x
	Mounting bracket	4x
	Hammer head screw M8	8x
	Collar nut M8	8x



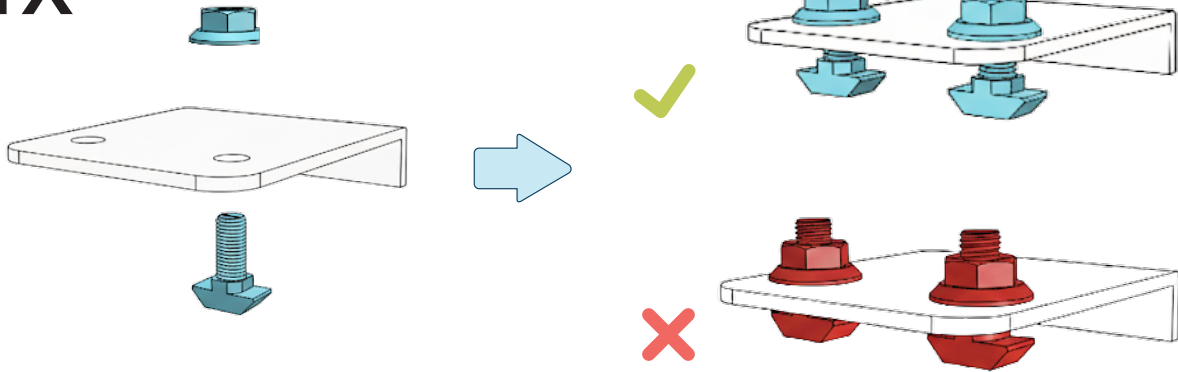
Carry heavy components together to prevent injuries.



When attaching the PV module, make sure that the cables do not get caught on the metal edges.

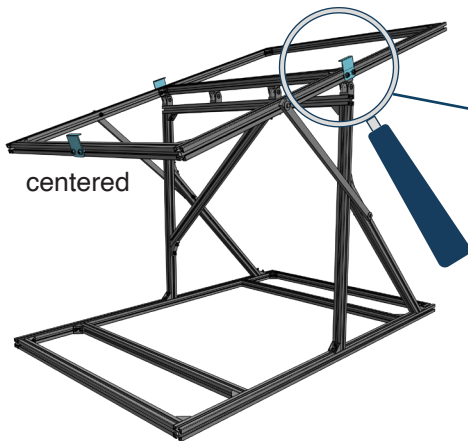
Preparation

4x

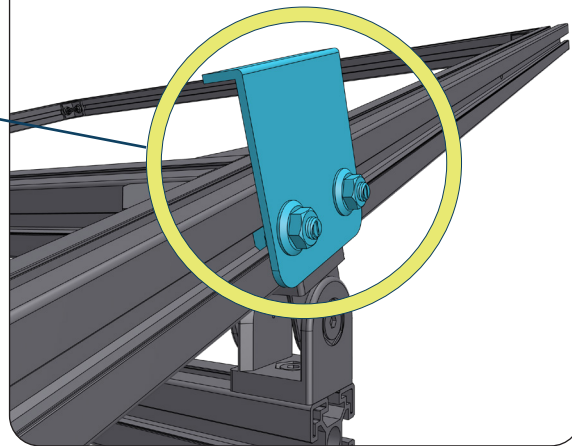


Solar panel

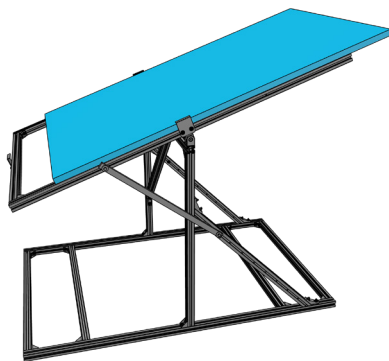
1



2



3

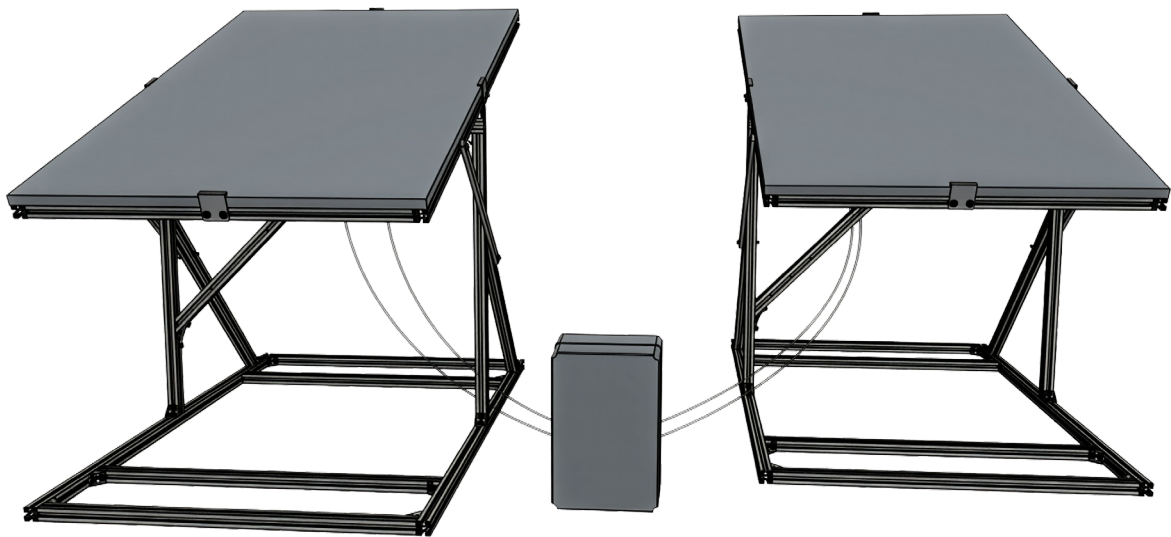


4



08 Electrical box

Electrical box



The electrical box should be positioned as centrally as possible between the PV systems. Discuss with your class and your teacher: Which circuit is best for you and why? What are the advantages and disadvantages of series and parallel circuits? You will find the circuit diagrams for both variants on the following pages.



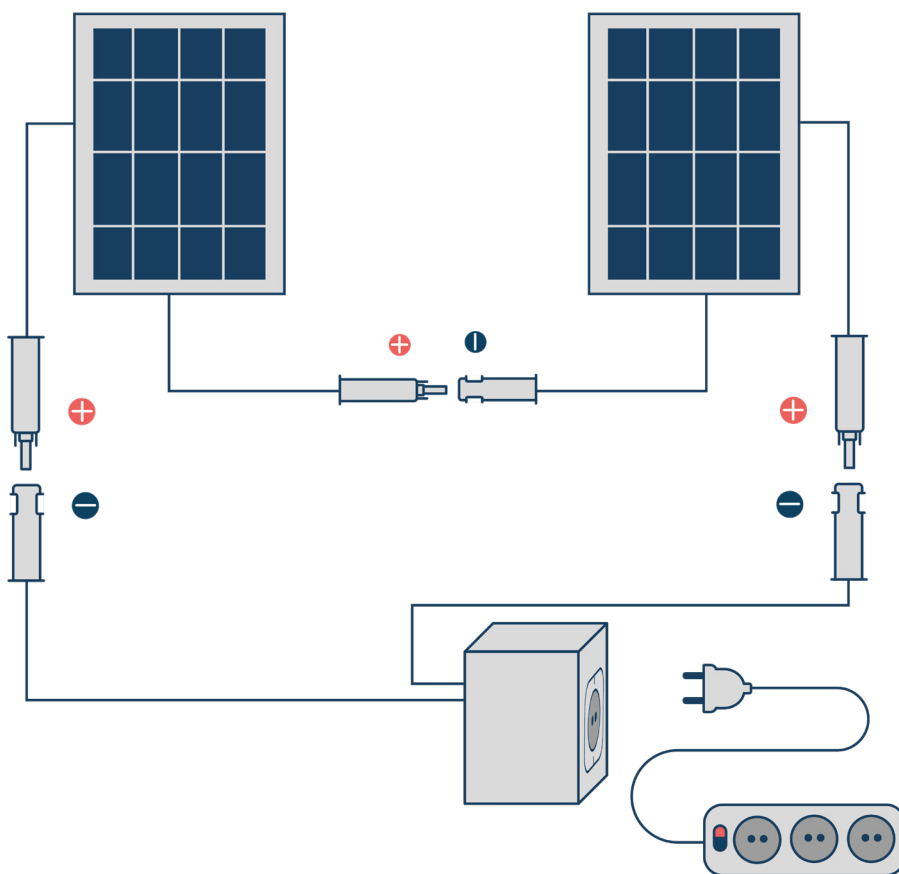
Carry heavy components together to prevent injuries.

09 Initial setup

Series connection



When installing the electronic components, check for damage on the cable and ensure proper use to avoid injury from electric shock.

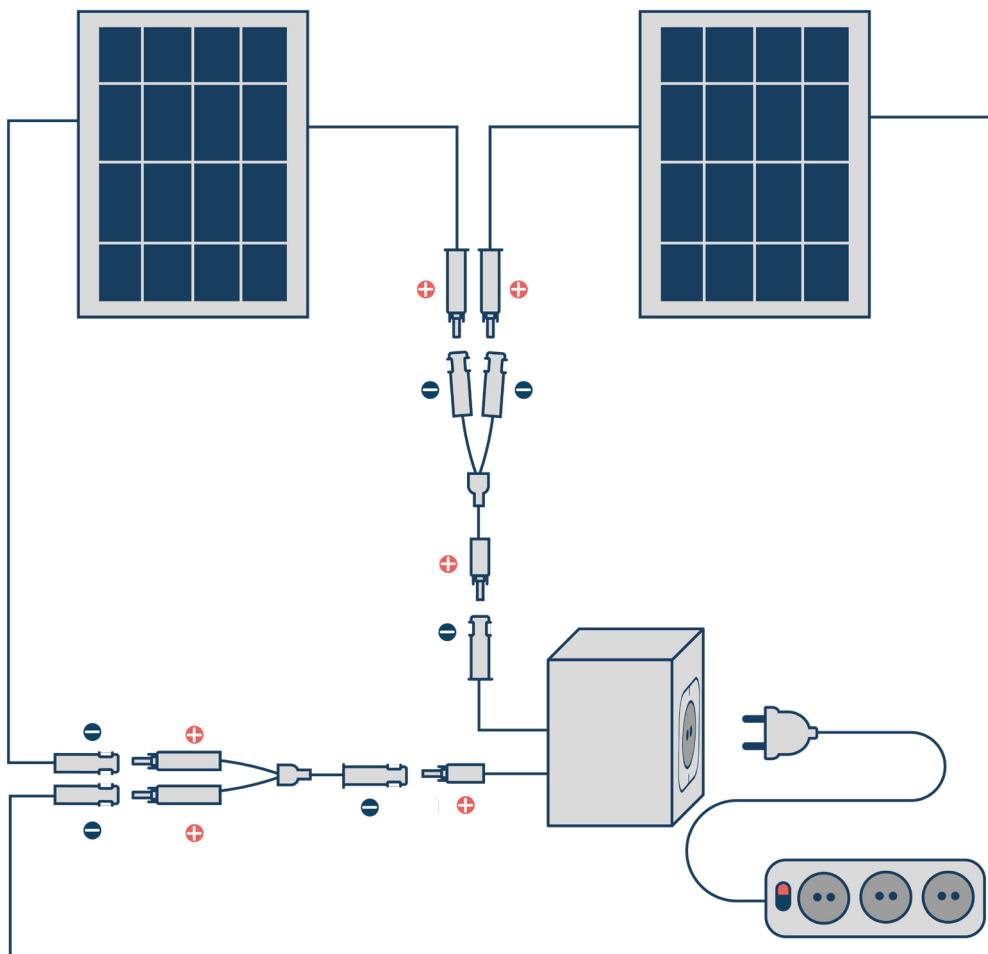


Connect the cables from the electrical box to the PV modules in series as shown to enable a circuit. The solar system is now ready for operation. It offers a maximum output of approx. 350 watts. You can now operate several devices, such as one or more electronic instruments, chargers, or a popcorn machine, via a multiple socket.

Parallel circuit



When installing the electronic components, check for damage on the cable and ensure proper use to avoid injury from electric shock.



Connect the cables of the electrical box in parallel with the PV modules as shown in order to create an electrical circuit. The solar system is now ready for operation. It provides a maximum output of approximately 350 watts. Using a power strip, you can now operate several devices, such as one or more electronic instruments, chargers, or even a popcorn machine.