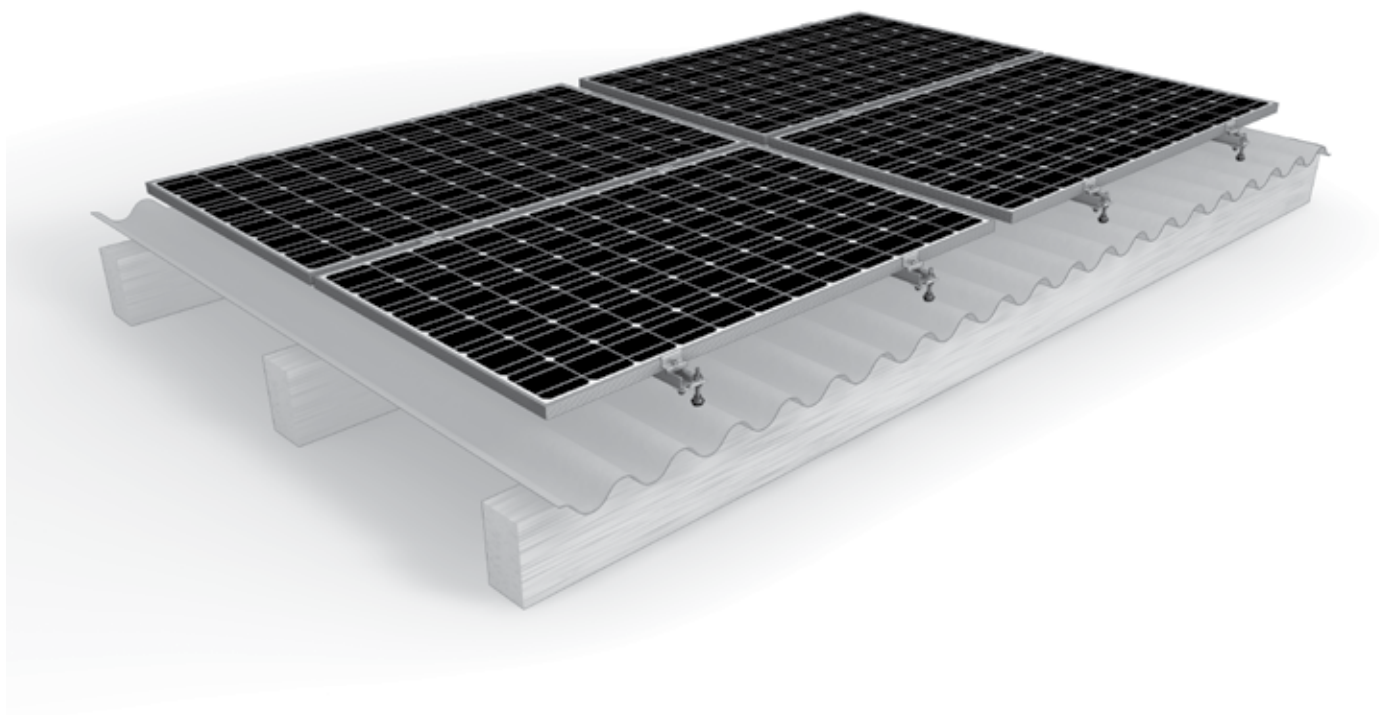


Mounting systems for solar technology



ASSEMBLY INSTRUCTIONS
HANGER BOLT

GB

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PARTNER WITH A SYSTEM

With sophisticated, fully developed product ideas and obvious customer-orientation, K2 Systems is your friendly partner in the field of mounting systems for solar technology. International customers appreciate the tried and tested designs for use on roofs and in outdoor and individual solutions.

Mounting systems from K2 Systems impress with their attractive design and many well thought-out details. High grade materials and quality workmanship guarantee outstanding functionality and durability.

Our products consist of few yet perfectly matching components - this reduces the amount of material used, simplifies assembly while saving time and money.

As an energetic, experienced company, and in keeping with the times, we benefit from cooperation as partners in order to ensure the dynamic development of our company. The experiences from the personal dialogue with our customers forms the basis for permanent optimisation of our range of products.

The team of K2 Systems looks forward to a successful cooperation with you.

TESTED QUALITY – MULTIPLY CERTIFIED

K2 Systems stands for secure connection, highest quality and precision. Our customers and business partners have already known that for a long time. Independent institutes have tested, confirmed and certified our capabilities and components.



GENERAL SAFETY INSTRUCTIONS

Please be aware that our General Assembly Regulations must be adhered to.

They can be viewed under <http://www.k2-systems.uk.com/downloads/product-information.html>

In general, the following applies:

- ↪ Systems may only be installed and put into use by people who can ensure the proper carrying-out of the work due to their technical suitability (e.g. training or occupation) and/or experience.
- ↪ Before assembly, it must be checked that the product meets the local static requirements. For roof systems, the load-bearing capacity of the roof has to be checked in principle.
- ↪ National and local building regulations, standards and environmental regulations are always to be adhered to.
- ↪ Work safety and accident prevention regulations and corresponding standards and regulations of occupational associations are to be adhered to! In particular, it is to be ensured that:
 - Safety clothing is worn (especially safety helmets, work shoes and gloves).
 - For work on roofs, the regulations for working on roofs are to be adhered to (e.g. use of anti-fall guards, scaffolding with arrestor equipment from an eaves height of 3m etc.)
 - Presence of two people is vital for the entire course of the assembly, so that swift help can be ensured in the case of an accident.
- ↪ K2 mounting systems are constantly being developed further. Because of this, assembly procedures can change. Therefore, before assembly, always check that the assembly instructions are up-to-date under <http://www.k2-systems.uk.com/downloads/product-information.html>. We can also send you the latest version on request.
- ↪ The assembly instructions of the module manufacturer are to be adhered to.
- ↪ The grounding must be prepared on site (if necessary use lightning protection clamp).
- ↪ During the entire assembly time it is to be ensured that at least one copy of the assembly instructions is available on site.
- ↪ In the event of non-adherence to our General Safety Instructions and if competitor's parts are built in or attached, K2 Systems GmbH reserves the right to refuse liability.
- ↪ With disregarding our general installation and assembly instructions and not using all system components and assemblies according to these instructions as well when components are used, which were not obtained from us, K2 Systems is not liable for any resulting defects and damages. Warranty is excluded in such cases.
- ↪ If all safety instructions are adhered to and the system is correctly installed, there is a product warranty entitlement of 12 years! In this context we strongly recommend to also read our terms of guarantee which can be viewed under <http://www.k2-systems.uk.com/downloads/product-information.html>. We can also send them to you on request.
- ↪ The dismantling of the system takes place according to the assembly steps, in reverse order.
- ↪ K2 components made of stainless steels are available in different corrosion resistance classes. In every case, the expected corrosion exposure of each structure or component must be checked.

ESSENTIAL: THE MATERIALS REQUIRED

All system components listed in the following are essential for assembling the K2 Systems Hanger Bolt system. The piece quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.



K2 Hanger Bolt, pre-assembled

| item number
system-specific

The set consists of:

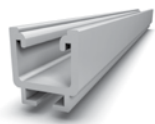
- 1 Hanger Bolt, stainless steel, WS 7 or 9 mm
- 3 Hexagon flange nut with serration, stainless steel
- 1 Rubber seal, EPDM
- 1 Washer, stainless steel
- 1 Adapter plate with long slot 11x39 mm, stainless steel



K2 Bridge

| item number
system-specific

Material: aluminium



Mounting Rail K2 SolidRail

| item number
system-specific

Material: aluminium EN AW-6063 T66
Mounting rail UltraLight, Light, Medium or Alpin



K2 Module End Clamp Standard Set

| item number
system-specific

The set consists of:

- 1 Module End Clamp Standard, Aluminium plate finished/ black anodized
- 1 Allen bolt M8, WS 6 mm, stainless steel A2
- 1 M K2 Slot nut with clip (1001643), stainless steel and PA
- 1 Lock washer S8 (1000473), stainless steel A2
- 1 spring, stainless steel



K2 Module Middle Clamp Standard Set

| item number
system-specific

The set consists of:

- 1 Module Middle Clamp, Aluminium plate finished/ black anodized
- 1 Allen bolt M8, WS 6 mm, stainless steel A2
- 1 M K2 Slot nut with clip (1001643), stainless steel and PA
- 1 Lock washer S8 (1000473), stainless steel A2
- 1 spring, stainless steel

Alternatively: K2 Module Middle Clamp XS Set



K2 T-Bolt M10x30

Material: stainless steel A2
Head form: 28/15

| 1000041

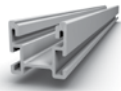


K2 Hexagon flange nut with serration M10

similar ISO 4161
Material: stainless steel, WS 15 mm

| 1000043

ADDITIONAL MATERIAL FOR CROSS BRACING



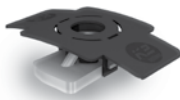
Mounting Rail K2 CrossRail 36

Material: aluminium EN AW-6063 T66

| item number
system-specific

Alternatively: Mounting Rail K2 CrossRail 48

| 1001980



M K2 slot nut with clip

Material: stainless steel and PA

| 1001643

Alternatively, also slot nut made of aluminium can be used.



K2 Climber 36/48

Material: aluminium EN AW-6063 T66

| 1002286



K2 Allen bolt

M8x25 DIN EN ISO 4762
Material: stainless steel A2, WS 6 mm

| 1000191



K2 Lock washer

DIN EN 10151
Material: stainless steel A2

| 1000473

AT A GLANCE: OVERVIEW OF THE TOOLS

K2 Systems mounting systems are designed to ensure effortless assembly. Only the tools that are required are not included in the scope of supply. Here we have listed them together for ease of reference.



Cordless screwdriver drill

With attachment for WS 7 mm or 9 mm (for hanger bolt)
(WS= wrench size)



Torque wrench

WS 6 mm
(WS= wrench size)



Jaw spanner

WS 15 mm



Chalk line



Measuring tape

IN GENERAL:

Please carefully read through all the steps first to ensure safe and correct assembly of the system. The required material is listed for each step.

- The grounding must be prepared on site and carried out in accordance to the respective national regulations.
- The General Installation Instructions must be adhered to.
These can be found at: <http://www.k2-systems.uk.com/downloads/product-information.html>
- The K2 Systems planning instructions in this document define the spacing you must leave between the module rows. Please adhere to this.
- Please check on-site that the roofing has a strong enough hold on the supporting structure and the substructure.

HANGER BOLT DESCRIPTION

The hanger bolt is available in different lengths and thicknesses. The hanger bolt is suitable for roofs with fibre cement profiles and timber substructures. An FZD seal is used to ensure that the roof cladding is waterproof.

M10/M2 x length A2 screw with hexagonal recess



Self-locking nut similar ISO 4161



Adapter plate with elongated hole 11 x 39 mm, A2



Self-locking nut similar ISO 4161



Thread



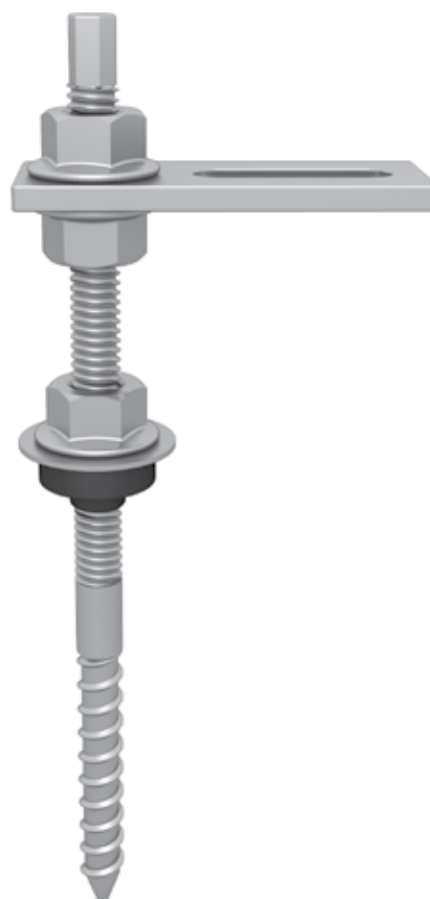
Self-locking nut similar ISO 4161



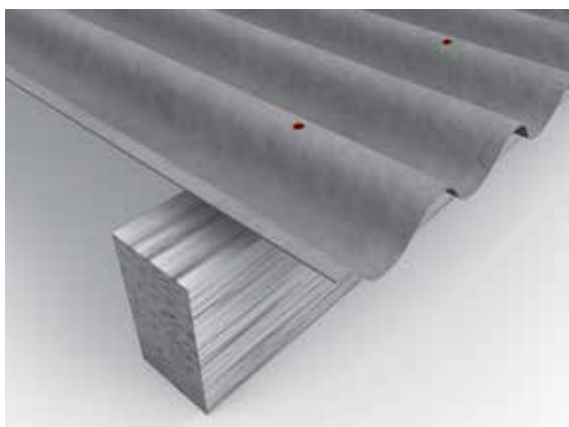
Washer



FZD sealing washer



ON-ROOF SYSTEM HANGER BOLT ASSEMBLY: STEP BY STEP



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PRE-DRILL HOLES IN FIBRE CEMENT PROFILE AND TIMBER SUBSTRUCTURE

Measure the screw distances according to statics or K2 base. Check position of purlins and pre-drill through the fibre cement profiles into the purlins.

Fibre cement profiles:
The pre-drilled diameter in the fibre cement profiles must always be greater than the diameter of the solar fastener.

DRILLING DIAMETER TABLE

Material substructure	Pre-drill diameter fibre cement profile	Pre-drill diameter timber substructure
Hanger Bolt \varnothing 10 mm	14 mm	7 mm
Hanger Bolt \varnothing 12 mm	15 mm	8,5 mm



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ATTACH HANGER BOLT

Before mounting the solar fastener, remove any burr from the surface of the profile sheets. Insert the hanger bolt into the pre-drilled hole and screw in.

Additional Information:
Do not overtighten the hanger bolt, the seal must be slightly compressed and rest on the entire surface.

Materials required: hanger bolt



WRONG



CORRECT



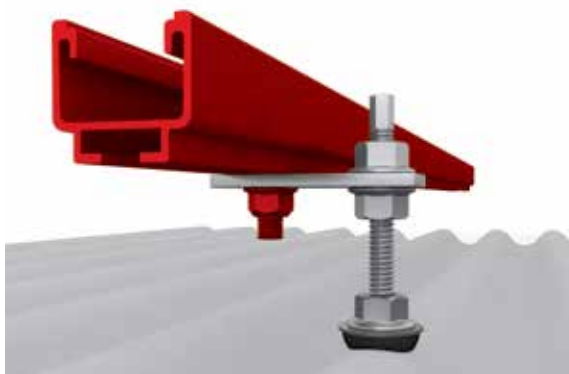
WRONG



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ADJUST ADAPTER PLATE

Screw the self-locking nut into the required position below the adapter plate to set the height of the adapter plate. After proper adjustment of the adapter plate, tighten the upper self-locking nut.

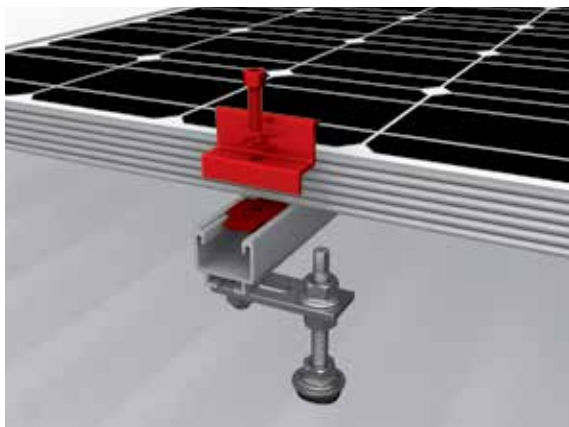


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MODULE CARRIER RAIL ASSEMBLY

After inserting into the lower chamber of the rail, the T-bolt is turned 90 degrees counter-clockwise. Ensure correct position of the T-bolt. Secure the statically correct K2 SolidRail on the adapter plate with an T-bolt M10x30 and tighten. Tightening torque: 32 Nm

Materials required: Mountingrail SolidRail, T bolt M10x30, self-locking nut M10



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FASTEN MODULE

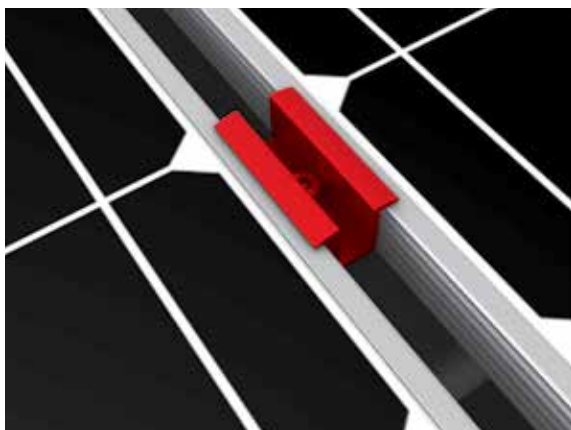
First of all, insert the M K2 slot nut in the SolidRail and turn 90° clockwise. If the module end and middle clamps are supplied as a set, please fix the whole set in the rail. Fasten the solar modules into the rails according to the manufacturer's information.

Each module at the end of a row is to be fastened with module end clamps and Allen bolts M8 and M K2 slot nuts. Never mount end clamps directly onto the rail joint or rail end! (Distance: min. 20 mm from rail end!)

Please also note the fastening guidelines of the module manufacturer!

Tightening torque moment 14 Nm.

Materials required: module end clamp set



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FASTEN MODULES WITH MIDDLE CLAMP SETS

Between two modules, each time use two module middle clamps standard, which are to be bolted with Allen bolts M8 in the M K2 slot nuts.

Never mount module middle clamps directly onto the rail joint or rail end! (Distance: min. 20 mm from module middle clamp)

Please also note the fastening guidelines of the module manufacturer!

Tightening torque moment 14 Nm.

Materials required: module middle clamp standard set



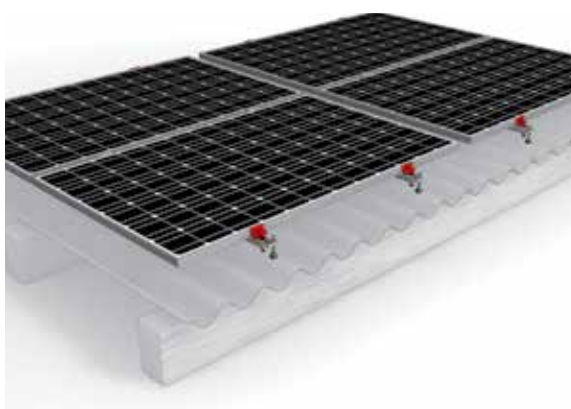
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FASTEN MODULES WITH XS MIDDLE CLAMP SETS

Between two modules, each time use two XS module middle clamps, which are also to be bolted in the M K2 slot nuts with Allen bolt M8. With the XS module middle clamp, longer bolts are required than for the module middle clamp Standard.

Tightening torque moment 14 Nm.

Materials required: module middle clamp XS set



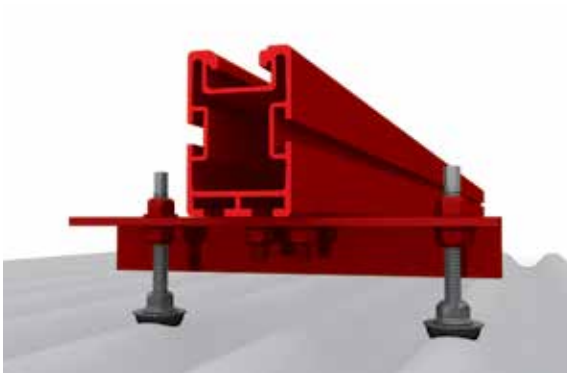
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SPECIFICS OF ASSEMBLY

Additional information:

- It is important to ensure that the module end clamps are mounted at a minimum distance of 2 cm to the end of the rail.

ALTERNATIVE SYSTEM ASSEMBLY WITH K2 BRIDGE



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MOUNT K2 BRIDGE

The K2 Bridge is mounted on two hanger bolts instead of the adapter plate in order to achieve greater span lengths. The statically correct K2 SolidRail is fastened to the Bridge using one or two T-bolts M10x30.

Materials required: 2 mounted hanger bolts, K2 Bridge, T-bolt M10x30

ALTERNATIVE SYSTEM ASSEMBLY (CROSS BRACING) WITH CROSSRAIL



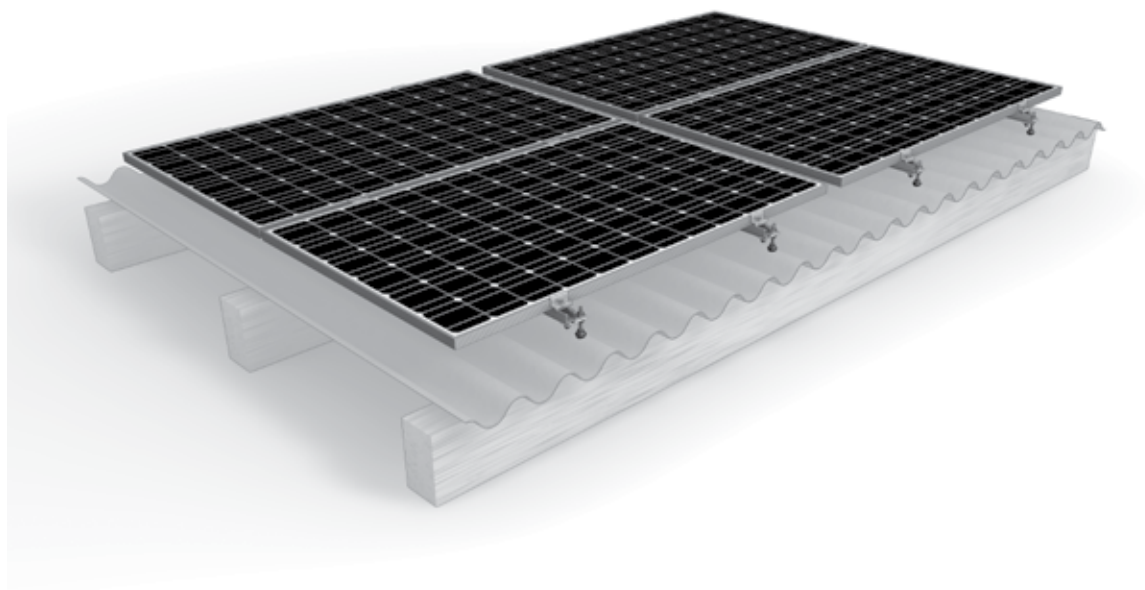
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MOUNT RAILS IN CROSS BRACING

The upper rail position in the cross bracing is mounted at the desired place using the Climber, M K2 slot nut and allen bolt M8x25 at the appropriate spacing. Tightening torque 16 Nm.

Materials required: CrossRail, Climber, M K2, allen bolt M8x25, lock washer

FULLY MOUNTED



Ready!

THANK YOU FOR CHOOSING A K2 MOUNTING SYSTEM.

Systems from K2 Systems are fast and simple to install. We hope these instructions have helped you in this. Please contact us if you have any questions or suggestions for improvements. All contact details can be found at:

<http://www.k2-systems.uk.com/contact.html>

Our General Terms of Business apply. Please refer to <http://www.k2-systems.com/en/gsc.html>. German Law shall apply excluding the UN Convention on CISG. Place of venue is Stuttgart.

Mounting systems for solar technology



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