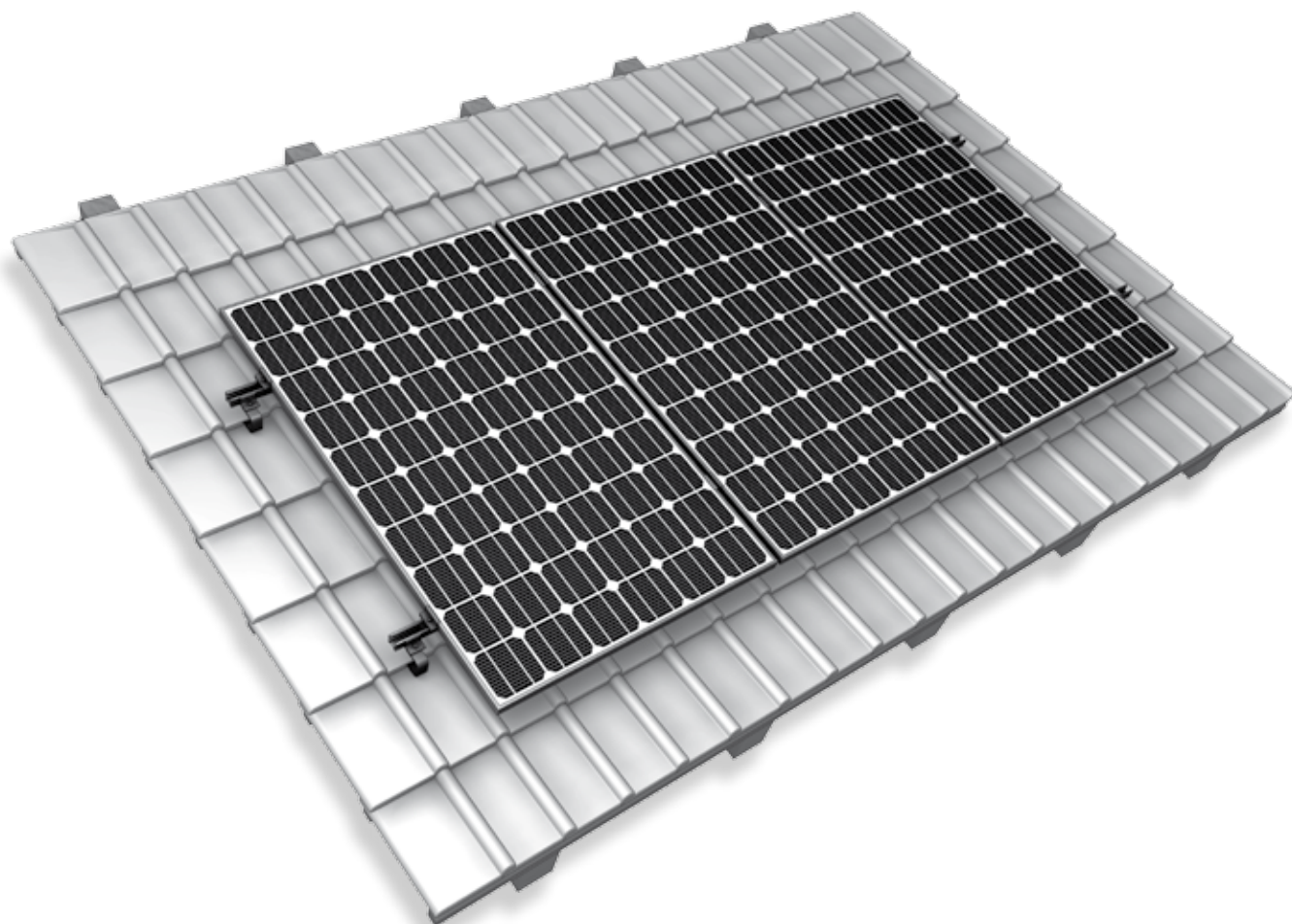


Mounting systems for solar technology



ASSEMBLY INSTRUCTIONS
CROSSHOOK 3S
CROSSHOOK 4S

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 – MULTIPLE CERTIFICATIONS

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.



Please refer to
<http://www.k2-systems.uk.com/downloads/certificates.html>
to download our quality and product certificates.

GENERAL SAFETY INSTRUCTIONS

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







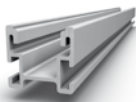

They can be viewed under www.k2-systems.com/en/downloads/product-information.html

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 www.k2-systems.com/en/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 www.k2-systems.com/en/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 CrossHook 3S system. The piece quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.

	K2 CrossHook 3S 2000133 height under bracket: 40/47/54 mm Material: aluminium
	Alternatively: K2 CrossHook 4S 2000466 height under bracket: 40/47/54 mm position bracket height adjusting range 30 mm Material: aluminium
	K2 Self-drilling wood screw round head Article number system-specific Material: stainless steel A2, bit TX 25 for M6, TX 40 for M8
	Alternatively for roof insulation: Article number system-specific K2 Self-drilling timber screw, round head, 2 threads Material: stainless steel A2, TX 25
	K2 Climber 36/48 1002286 Material: aluminium EN AW-6063 T66
	K2 Bolts with serrated under head 2001732 M8x25 according to DIN 912/ EN ISO 4762 Material: stainless steel A2, WS 6 mm
	Mounting Rail K2 CrossRail 36 Article number system-specific Material: aluminium EN AW-6063 T66 Alternatively: Mounting Rail CrossRail 48
	K2 CrossRail 36 Rail connector Set 1002389 The set consists of: → 1 Rail connector (1002284), aluminium → 4 T-Bolt M8x20 (1002387), stainless steel A2 → 4 Hexagon flange nut with serration M8 (1000043), stainless steel A2 Alternatively: K2 CrossRail 48 Rail connector Set 1002392



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 bolt with serrated under head M8, WS 6 mm, stainless steel A2
- 1 M K2 Slot nut with clip (1001643), stainless steel and PA
- 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 bolt with serrated under head M8, WS 6 mm, stainless steel A2
- 1 M K2 Slot nut with clip (1001643), stainless steel and PA
- 1 spring, stainless steel

Alternatively: K2 Module Middle Clamp XS Set



K2 Pad Spacer

| 1002361

Material: glass fibre reinforced PA



K2 EndCap CrossRail 36

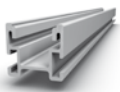
| 1004767

Material: glass fibre reinforced PA

Alternatively: K2 EndCap CrossRail 48

| 1004768

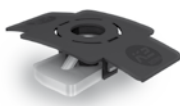
ADDITIONAL MATERIAL FOR CROSS BRACING



Mounting Rail K2 CrossRail 36

| Article number
system-specific

Material: aluminium EN AW-6063 T66



M K2 slot nut with clip

| 1001643

Material: stainless steel, PA

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



K2 Climber 36/48

| 1002286

Material: aluminium EN AW-6063 T66



K2 Bolts with serrated under head

| 2001732

M8x25 according to DIN 912/ EN ISO 4762

Material: stainless steel A2, WS 6 mm

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

With mount for TX 25 or TX 40



Torque wrench

WS 6 mm
(WS= wrench size)



Measuring tape



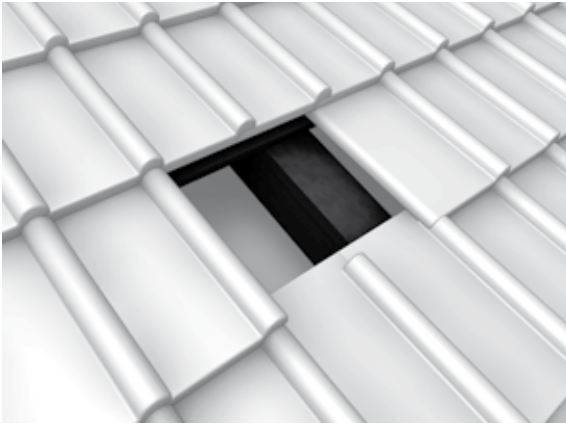
Angle grinder

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 Assembly Instructions' must be observed.
These can be viewed at: <http://www.k2-systems.uk.com/downloads/product-information.html>
- In the case of high snow loads the roof fastener boom must be supported with suitable measures (base plate) to avoid tile breaking.
- In the case of on-roof insulation or counter lathing, special screws must be used, to guarantee an even distance screw joint.
- Due to thermal expansion, we recommend to break the rows after 20 m, however, no further than 24.4 m. The minimum spacing for separation between the two K2 rails is 3-5 cm.
- The roof hook is not a climbing aid. Do NOT climb or step on the roof hooks during the install.

CROSSHOOK SYSTEM ASSEMBLY: STEP BY STEP



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UNCOVER RAFTERS (REMOVE TILES)

The rafters, on which the roof fasteners are to be mounted, must be exposed. The height of the roof fastener must be checked and adjusted if necessary.



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ASSEMBLE ROOF FASTENER

The roof fastener must be mounted with a minimum of two stainless steel timber screws on the wooden rafters (at least one screw per row of holes). Choosing the dimensions and position of the screws has to be carried out according to the applicable regulations. This also applies to on-roof insulation or counter lathing. Horizontally align the roof hook hangers in order to get into the hollow of the tile. Untighten the Allen bolt in the bracket.

After adjusting the bracket fasten the Allen bolt.

Torque moment 16 Nm. If the bracket will sit right at the edge of the baseplate make sure the bracket is at least flush with the baseplate edge.

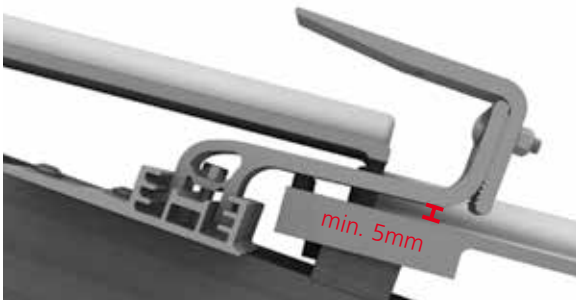
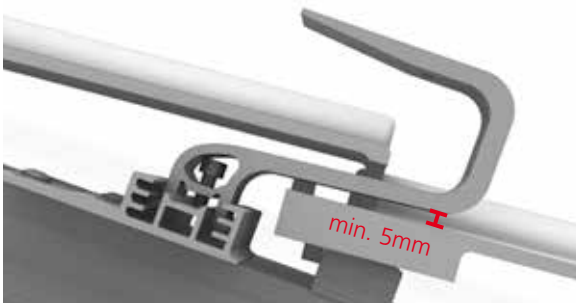
Flex deck tiles and lower tiles in the area of the hanger. The top edges of a horizontal row must be at the same height.

The roof fasteners must be mounted in such a way that there is a minimum spacing of 5 mm between the roof fastener bracket and the tile.

When using the Crosshooks 4S, an additional height adjustment of the bracket itself is possible. The bolt is tightened to 14 Nm.

(The amount of roof fasteners that need to be mounted depends on roof requirements and will be specified when order is placed.)

Required materials: K2 CrossHook 3S / 4S, K2 Self-drilling wood screw round head





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CROSSRAIL ASSEMBLY

The CrossRail is mounted on to the roof fastener using K2 Climbers and K2 Bolts with serrated under head. Tightening torque 16 Nm. Due to thermal expansion, we recommend to break the rows after 20 m, however, no further than 24.4 m. The minimum spacing for separation between the two K2 rails is 3 - 5 cm.

Required materials: K2 Climber, Bolt with serrated under head M8x25, CrossRail



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PADS FOR HEIGHT ADJUSTMENT

Smaller unevenness is offset by one or more stacked K2 Pads.

Required materials: K2 Pad

Alternatively: Assembly with CrossHook 4S.
Height adjustment 30 mm.



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RAIL CONNECTOR ASSEMBLY

Lay CrossRail on joint with rail connector and connect with 4 T bolts and self-locking nuts. The rail joint may not be in the range of the roof fastener. Tightening torque 16 Nm.

Required materials: Rail connector set

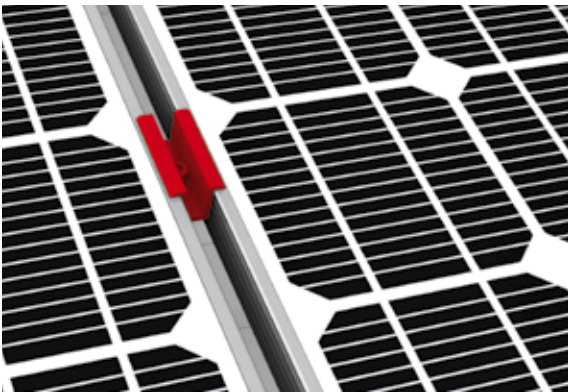


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ATTACH MODULES

The M K2 slot nut is first inserted into the K2 CrossRail and rotated clockwise by 90 degrees. If the module end clamps and middle clamps are delivered as a set, the entire set must be fixed to the rail in the same way. Attach module to the mounting rails according to the manufacturer's instructions. Attach module at the end of each row with module end clamps and allen bolt M8 as well as the M K2 slot nuts. Never mount module end clamps directly on the rail joint or end of the rail! (Spacing: min. 20 mm from module end clamp). **Pay attention to the mounting instructions by module manufacturer!** Tightening torque 14 Nm.

Required materials: End Clamp Set



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ATTACH MODULE GAPS

Attaching with Module Middle Clamp Standard

Use two standard module middle clamps between two modules, which also need to be screwed with allen bolt M8 in the M K2 slot nuts. **Pay attention to the mounting instructions by module manufacturer!** Tightening torque 14 Nm.

Required materials: Module Middle Clamp Set



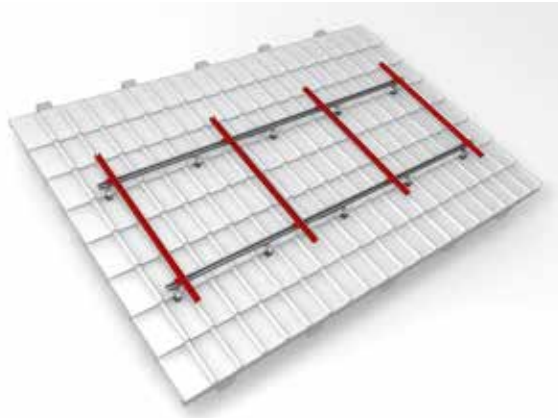
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Attaching with XS Middle Clamp

Use two XS middle clamps between two modules, which also need to be screwed with allen bolt M8 screws in the slot nuts. The XS middle clamps will need longer screws than the standard middle clamp. Tightening torque 14 Nm.

Required materials: Middle Clamp Set XS

ALTERNATIVE SYSTEM DESIGNS (CROSS BRACING) WITH CROSSRAIL

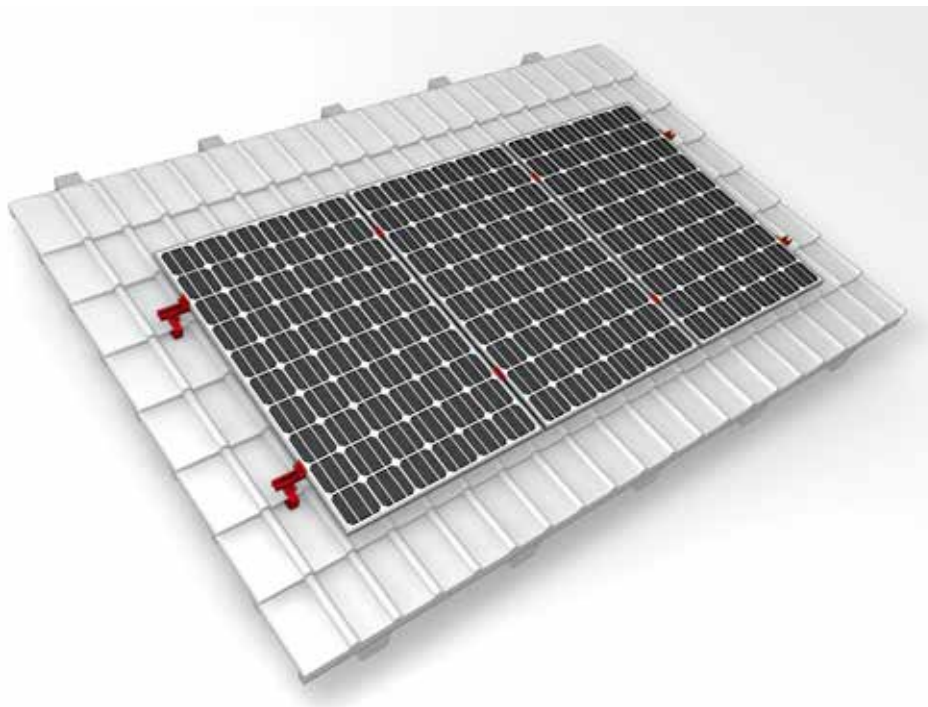


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MOUNT RAILS WITH CROSS BRACING

In cross bracing, the upper rail position is fitted using the M K2 slot nut, climber and bolt with serrated under head M8 to the desired location, with appropriate spacing. Tightening torque 16 Nm.

Required materials: CrossRail, Climber, M K2, Bolt with serrated under head M8



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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Montageanleitung CrossHook35/45 | GB6 | 0715 | Änderungen vorbehalten
Product illustrations are exemplary illustrations and may differ from the original.