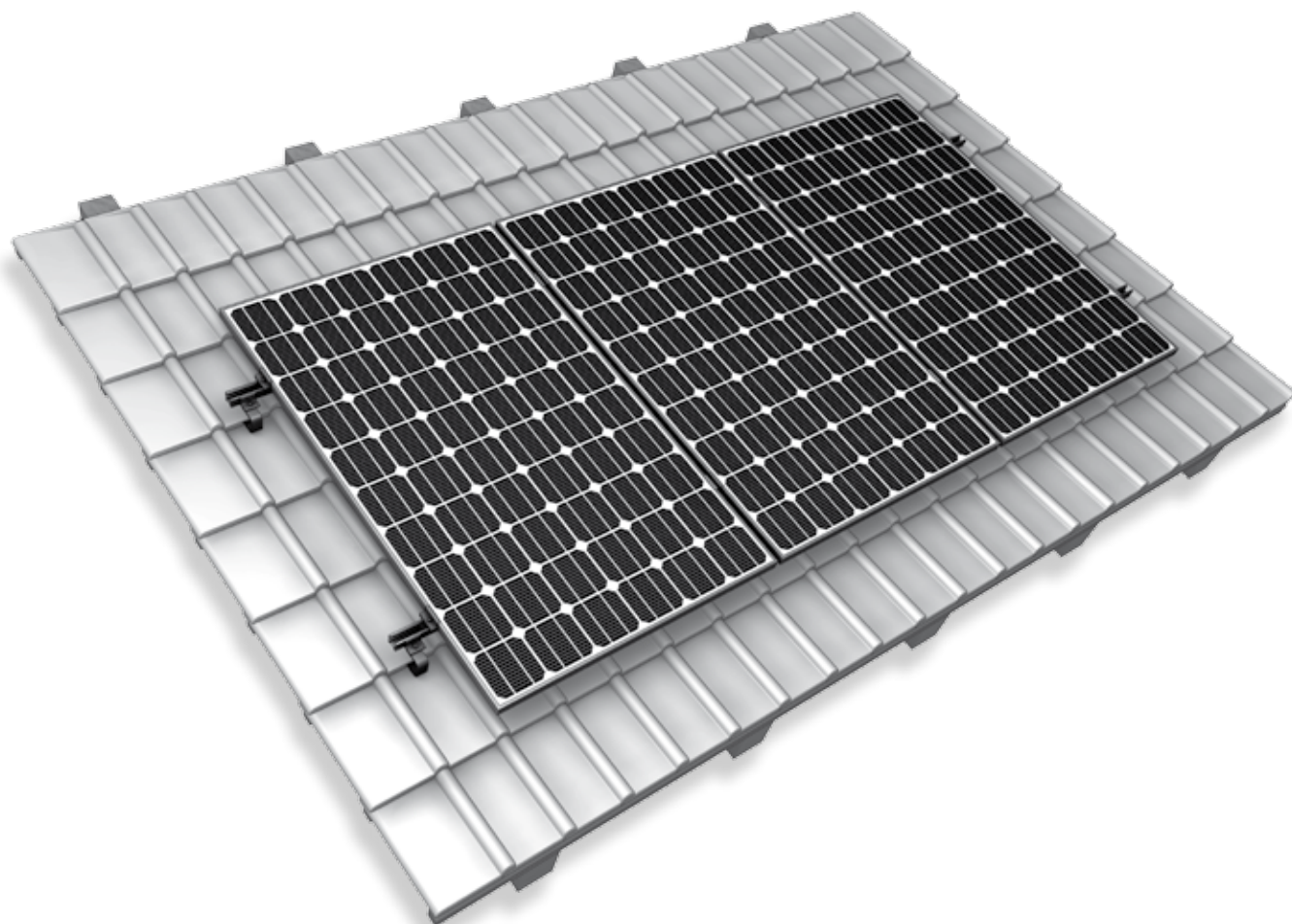


Mounting systems for solar technology



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 – FOUR CERTIFICATIONS

K2 Systems stands for secure connection, highest quality and precision. Our customers and business partners have already known that for a long time. And three 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.








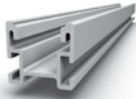

They can be viewed under www.k2-systems.com/en/downloads/product-information.html

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

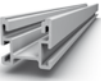



All system components listed in the following are essential for assembling the K2 Systems CrossHook 3S system. The piece quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.

	<p>CrossHook 3S 2000133</p> <p>Material: Aluminium height under bracket: 40/47/54 mm</p>
	<p>Alternatively: CrossHook 4S 2000466</p> <p>Material: Aluminium height under bracket: 40/47/54 mm position bracket height adjusting range 30 mm</p>
	<p>Self-drilling timber screw, flat head Article number system-specific</p> <p>Material: Stainless steel</p>
	<p>Alternatively: For roof insulation, a self-drilling Wood screw with distance screw joint. Article number system-specific</p>
	<p>Climber 36/48 (with long slot) 1002286</p> <p>Material: Aluminium</p>
	<p>Hexagon socket head cap screw DIN 912 M8 Article number system-specific</p> <p>Climber mouting Material: Stainless steel, drive: SW 6</p>
	<p>Washer DIN EN 10151 1000473</p> <p>Material: stainless steel</p>
	<p>Mounting rail CrossRail 36 Article number system-specific</p> <p>Material: Aluminium</p>
	<p>Rail connector Set CrossRail 36 1002389</p> <p>Material: Aluminium</p>
	<p>Alternatively: Rail connector Set CrossRail 36 1002392</p>

ESSENTIAL: MATERIALS REQUIRED

	End clamps Set Standard Material: Aluminium	Article number system-specific
	Alternatively: End clamps Set XS	Article number system-specific
	Middle clamps Standard set Material: Aluminium	Article number system-specific
	Alternatively: Middle Clamp Set XS	Article number system-specific
	K2 Pad, spacer pad Material: Glass fibre reinforced polyamide	1002361

ADDITIONAL MATERIAL FOR CROSS BRACING

	Mounting rail CrossRail 36 Material: Aluminium	Article number system-specific
	M K2 slot nut Material: Stainless steel, plastic	1001643
	Alternatively, also slot nut made of galvanized steel can be used.	
	Climber 36/48 (with long slot) Material: Aluminium	1002286
	Hexagon socket head cap screw DIN 912 M8 x 25 for Climber mounting Material: Stainless steel, drive: SW 6	1000191

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.



Torque wrench
With mount for SW 6



Measuring tape



Cordless screwdriver
With mount for T-25



Angle grinder

CROSSHOOK SYSTEM ASSEMBLY: STEP BY STEP

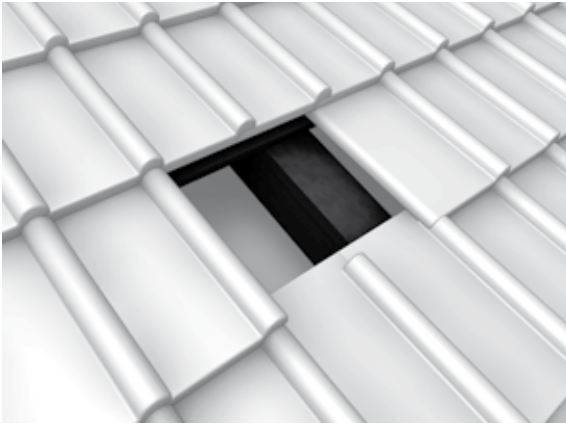
Please carefully read through all the steps first to ensure safe and correct assembly of the system. The required material is listed for each step. Should you have any problems during assembly or questions relating to the system please contact us on our

SERVICE HOTLINE: +49 (0) 7152-3560-0

IMPORTANT:

- The 'General Assembly Instructions' must be observed.
These can be viewed at www.k2-systems.com/en/downloads/product-information.html
- If you don't already have them, you can obtain access data for our customer area on request.
- 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.

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

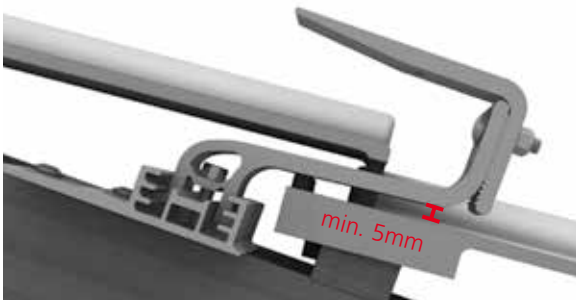
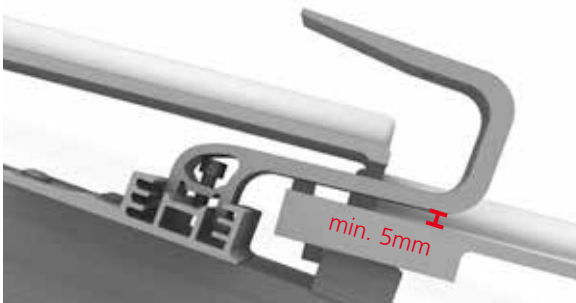
The roof fastener must be mounted with a minimum of 2 stainless steel timber screws on the wooden rafters (at least one screw per row of holes). Choosing the dimensions and position of the screws has to be carried out according to the applicable regulations. When using the Crosshooks 4S, an additional height adjustment of the bracket itself is possible. The bolt is tightened to 14Nm. 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. 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 5mm between the roof fastener bracket and the tile.

After adjusting the bracket fasten the Allen bolt. Torque moment 16Nm

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, Timber screw





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CROSSRAIL ASSEMBLY

The CrossRail is mounted on to the roof fastener using K2 Climbers. 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, M8 screw, CrossRail, Washer



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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 30mm.



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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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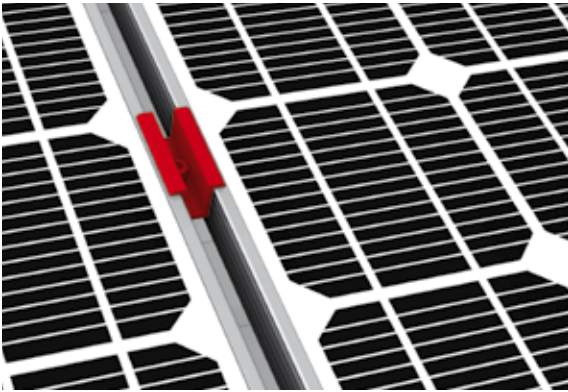
ATTACH MODULES

The slot nut M K2 is first inserted into the K2 CrossRail and rotated clockwise by 90 degrees. If the 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 end clamps and DIN 912 M8 as well as the slot nuts. Never mount end clamps directly on the rail joint or end of the rail! (Spacing: min. 20 mm from 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 Standard Middle Clamp

Use two standard middle clamps between two modules, which also need to be screwed with DIN 912 M8 in the slot nuts. **Pay attention to the mounting instructions by module manufacturer!** Tightening torque 14 Nm.

Required materials: Middle Clamp Set



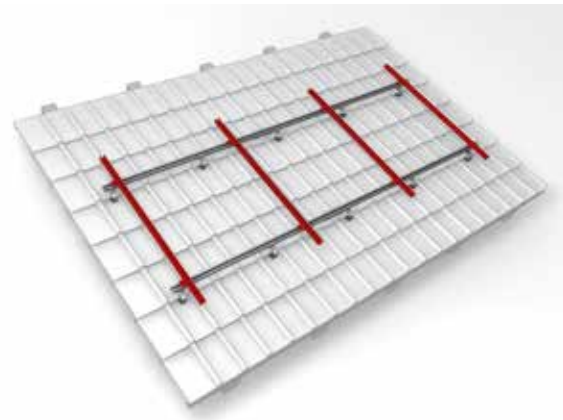
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Attaching with XS Middle Clamp

Use two XS middle clamps between two modules, which also need to be screwed with DIN 912 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

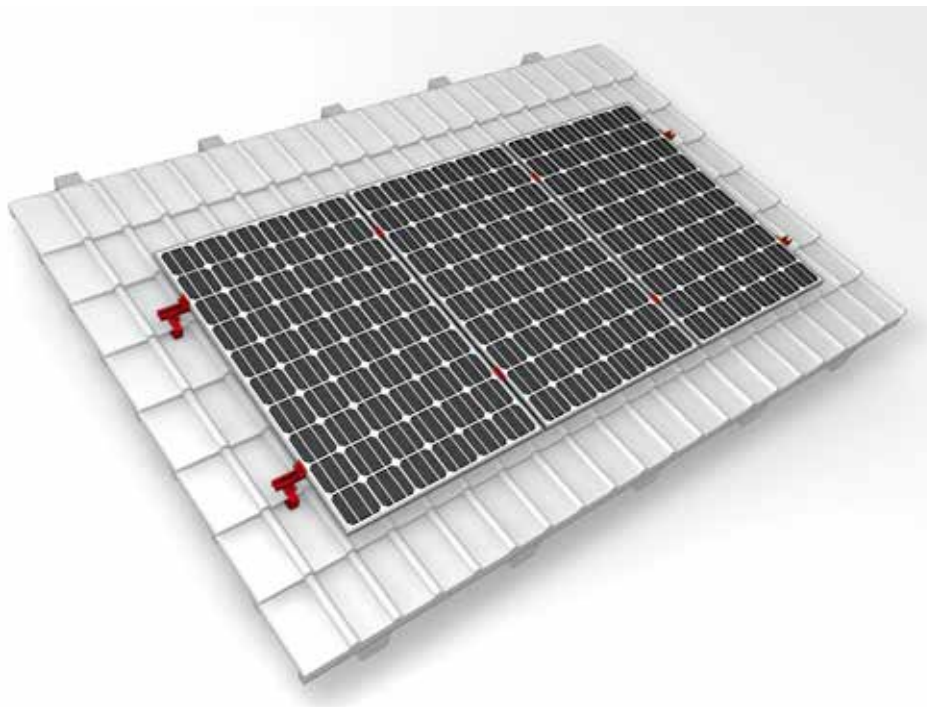


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MOUNT RAILS WITH CROSS BRACING

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

Required materials: CrossRail, Climber, M K2, Hexagon socket head cap screw M8, Washer



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. We are looking forward to receive your call on our

Service-Hotline +49 (0) 7152-3560-0

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

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Montageanleitung CrossHook35/45 | GB4 | 0713 | Änderungen vorbehalten
Product illustrations are exemplary illustrations and may differ from the original.

