

## ASSEMBLY INSTRUCTIONS

# MultiRail System



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## QUALITY TESTED – SEVERAL CERTIFICATIONS

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

Please find our quality and product certificates under:

[www.k2-systems.com/en/technical-information](http://www.k2-systems.com/en/technical-information)



# Werkzeugübersicht



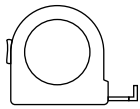
8 mm



6-30 Nm  
(4,5-22,2 lb-ft)



6 mm



≥3,0m



≥6,0m

# General safety information

Please note that our general mounting instructions must be followed at all times and can be viewed online at [www.k2-systems.com/en/technical-information](http://www.k2-systems.com/en/technical-information).

- The equipment may only be installed and operated by qualified and adequately trained installers.
- Prior to installation, ensure that the product complies with on-site static loading requirements. For roof-mounted systems, the roof load-bearing capacity must always be checked.
- National and local building regulations and environmental requirements must be adhered to.
- Compliance with health and safety regulations, accident prevention guidelines and applicable standards is required.
  - Protective equipment such as safety helmet, boots and gloves must be worn.
  - Roofing works must be in accordance with roofing regulations utilising fall protection safeguards when eaves height exceeds 3 m.
  - At least two people must be present for the duration of the installation work in order to provide rapid assistance in the event of an emergency.
- K2 mounting systems are continuously developed and improved and the installation process may thereby change at any time. Prior to installation consult our website at [www.k2-systems.com/en/technical-information](http://www.k2-systems.com/en/technical-information) for up-to-date instructions. We can send you the latest version on request.
- The assembly instructions of the module manufacturer must be adhered to.
- Equipotential bonding/grounding/earthing between individual parts is to be performed according to country specific standards, as well as national laws and regulations.
- At least one copy of the assembly instructions should be available on site throughout the duration of the installation.
- Failure to adhere to our general safety and assembly instructions and not using all system components, K2 is not liable for any resulting defects or damages. We do not accept liability for any damage resulting in the use of competitor's parts. Warranty is excluded in such cases.
- German law shall apply excluding the UN Convention on CISG. Place of venue is Stuttgart. Our General Terms of Business apply.
- If all safety instructions are adhered to and the system is correctly installed, there is a product warranty entitlement of 12 years! We strongly recommend reviewing our terms of guarantee, which can be viewed at [www.k2-systems.com/en/technical-information](http://www.k2-systems.com/en/technical-information). We will also send this information on request.
- Dismantling of the system is performed in reverse order to the assembly.
- K2 stainless steel components are available in different corrosion resistance classes. Each structure or component must be carefully checked for possible corrosion exposure.

# The following guidelines apply



The MultiRail system can be used without further testing by K2 systems in the following standard conditions. To calculate maximum distances between supports we recommend using our calculation tool K2Base. The system is also suitable for higher requirements. However, if a value exceeds the standard conditions, please contact K2 Systems.



## ROOF REQUIREMENTS

- Trapezoidal sheet thickness from 0.5 mm (steel and aluminium)
- steel grade min. S235 following DIN EN 10025-1
- Minimum tensile strength aluminium 165 N/mm<sup>2</sup>
- Min. 22 mm crest width, Plane support around the borehole:  $\varnothing \geq 20$  mm
- Roof pitch of: 5-75°



## STRUCTURAL REQUIREMENTS

- Sufficient holding force of the roof covering on the support or substructure



## IMPORTANT MOUNTING INSTRUCTIONS

- On-site general standards and regulations for lightning protection must be observed and consultation with a specialist to create a lightning protection concept is recommended (use lightning protection clamp if necessary).
- After a maximum of 13.6 m, thermal separation must be carried out and a new row of modules must be started with an end clamp.
- If the trapezoidal sheet is fastened with storm washers, please do not fasten the MultiRails on the storm washers! Spacing must be measured beforehand.
- Adhere to module manufacturer recommendations for clamping area and module installation (see module manufacturer instructions). – Tightening torque 14 Nm with M8 screw.
- Fixing of the MultiRails on trapezoidal sheet metal with thin sheet metal screws approved by the building authorities.

# Essential: The materials required

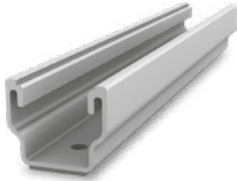
All system components listed in the following are essential for assembling the K2 Systems MultiRail system. The piece quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.



## Mounting Rail K2 MultiRail 10

| 2001300

length: 100 mm  
Material: aluminium, EPDM



## Mounting Rail K2 MultiRail 25

| 2002793

length: 250 mm  
Material: aluminium, EPDM



## K2 Thread-forming tapping screw 6x25 mm

| 1005207

Material: stainless steel A2 (1.4301) EPDM; Z-14.1-4



## K2 Module End Clamp Standard Set

area of application: MultiRail 10 und MultiRail 25

| Article number  
system-specific

## Universal module end clamps OneEnd

area of application: MultiRail 25  
Module frame height: 30-42 mm

| 2002514



## Universal module clamps OneMid

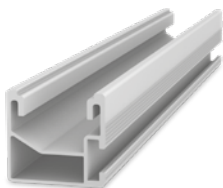
| 2003071

Module frame height: 30-42 mm

Alternative: Module middle clamps XS

| Article number  
system-specific

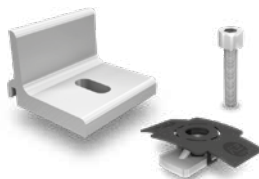
## ADDITIONAL MATERIAL FOR CROSS BRACING



### Mounting Rail K2 SingleRail 36

Material: aluminium EN AW-6063 T66

| Article number  
system-specific



### SingleRail Climber Set 36/48

Material: Aluminium EN AW-6063 T66, stainless steel A2

| 1006041

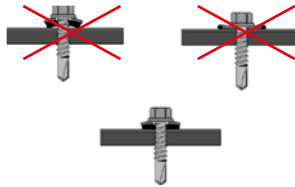
# Assembly

## 1 MOUNTING THE MULTIRAIL 10 OR 25

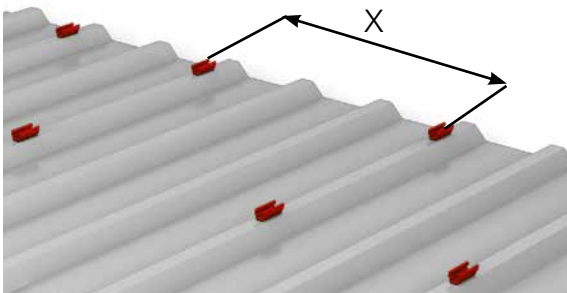


Use minimum two self-tapping screws to fasten the MultiRail rail to the center of the crest. Minimum width of the crest: 22 mm (Support surface of the high crest). The EPDM seal under the rail may be compressed to a maximum of 50%. The seal of the screw should not be too tightly compressed. Fix rail along the centre of the crests and tighten screw/washer carefully until flush.

Materials required: K2 MultiRail 10 or 25, Thread-forming tapping screw 6x25



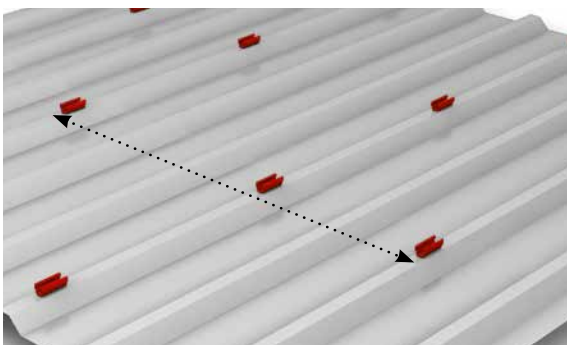
## 2 MEASURING THE RAILS



The horizontal spacing  $X$  of the MultiRail rails is defined by the dimensions of the modules and their maximum clamping range. Since  $X$  is a multiple of the distance between the Crest distance, it must be ensured that this corresponds to the permissible clamping range of the modules.

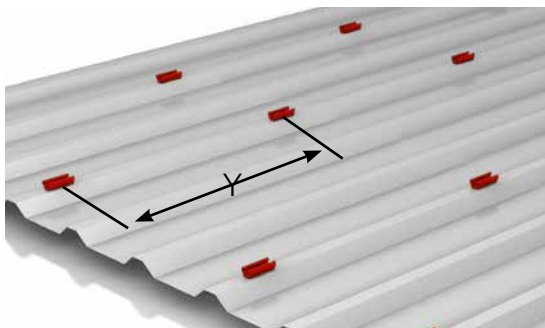
Use a chalk line to align the rails in a row.

Materials required: K2 MultiRail 10 or 25, Thread-forming tapping screw 6x25





### 3 MEASURING AND FASTENING THE OTHER RAILS



The vertical spacing  $Y$  of one row of rails is approx. Module width + width of the middle clamp used.

For XS: module width + 13 mm

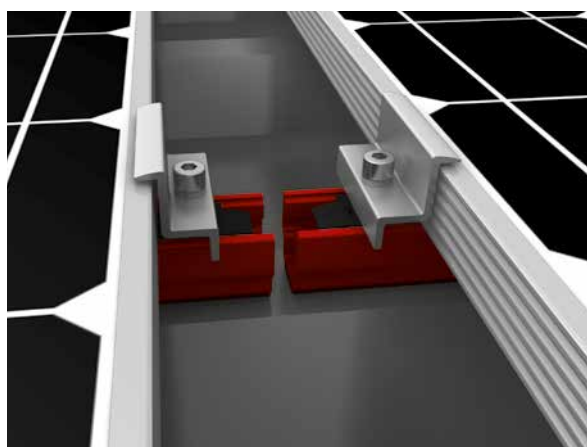
For OneMid: module width + 20 mm

Repeat steps 1 and 2 to assemble the other rows.

Materials required: K2 MultiRail 10 or 25, Thread-forming tapping screw 6x25



### 4 PLEASE NOTE IMPLICITLY:

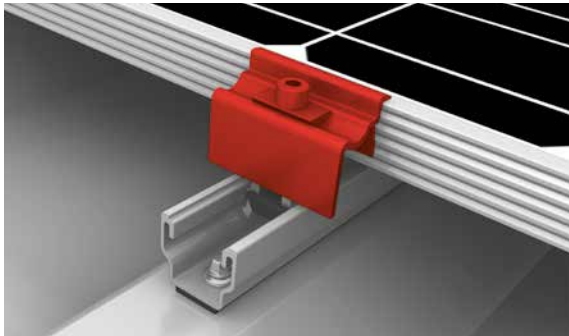


After 13.60 m (length of a module row in high crest's direction) a thermal separation must be installed. For this reason, two rails have to be fixed one above the other on the same crest with a minimum distance of 10 mm. Fasten Module End Clamps as per Step 5. If the clamping range of the module used allows it, the next MultiRail can also be mounted offset on the next crest to also achieve a thermal cut.

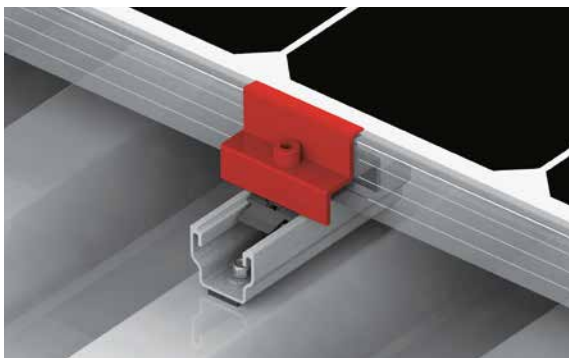
Without using a cross layering of rails only a layout with modules in landscape is allowed.

# Assembly

## 5 ATTACH MODULE GAPS



Fix the module in place at the end of a row with universal module end clamp OneEnd. Click the Stance in the notches from the MultiRail. Make sure that the terminals are always mounted centrally on the MultiRail 25.



Alternatively (for MultiRail 10) use the standard end clamp. Insert the MK2 nut into the mounting rail and turn clockwise by 90 °. Place clamps on the module frames and fix them. Make sure that the terminals are always mounted centrally on the rail (MultiRail 10 and 25!). Pay attention to the mounting instructions by module manufacturer!

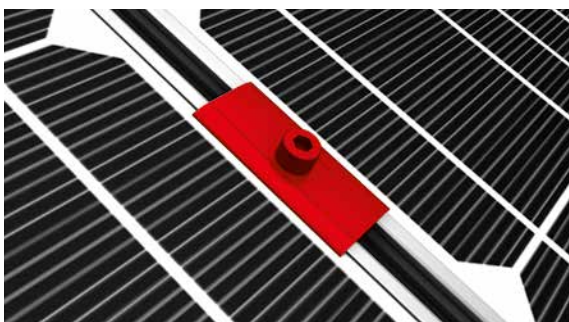
Tightening torque 14 Nm.

## FIX MODULE GAPS



Use two universal module middle clamp OneMid between two modules. Click the Stance in the notches. Place clamps on the module frames and fix them. Make sure that the terminals are always mounted centrally on the rail (MultiRail 10 and 25!).

Tightening torque 14 Nm.

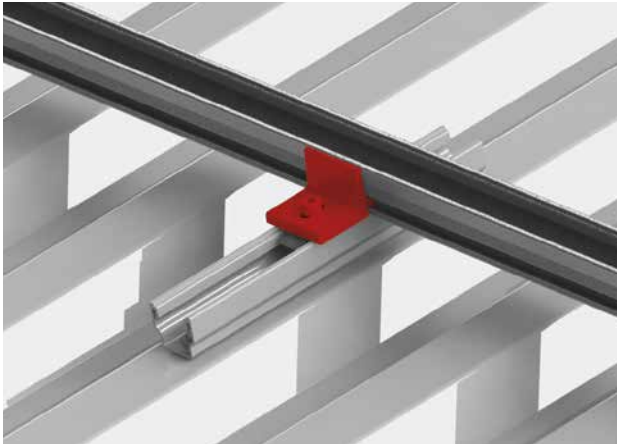


Alternatively: Use two XS middle clamps between two modules. Insert the MK2 nut into the mounting rail and turn clockwise by 90 °. Place clamps on the module frames and fix them.

Tightening torque 14 Nm.

## ALTERNATIVE SYSTEM DESIGNS

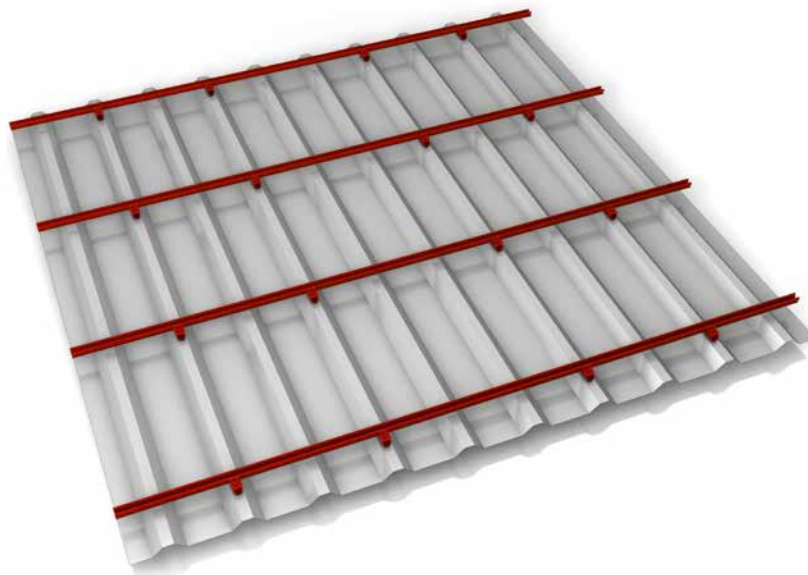
### CROSS BRACING WITH SINGLERAIL



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. Only the MultiRail 25 may be used for the cross connection. The Climber must be mounted in such a way that the screw is fastened to the middle of the rail.

After a maximum of 13.6m, thermal separation must take place and a new module row must be started.

Tightening torque 16 Nm.



## THANK YOU FOR CHOOSING A K2 MOUNTING SYSTEM.

Systems from K2 Systems are quick and easy to install. We hope these instructions have helped. Please contact us with any questions or suggestions for improvement.

Our contact data:

- ▶ [www.k2-systems.com/en/contact](http://www.k2-systems.com/en/contact)
- ▶ **Service Hotline: +49 (0)7159 42059-0**

German law shall apply excluding the UN Convention on CISG.  
Place of venue is Stuttgart.

Our General Terms of Business apply. Please refer:  
[www.k2-systems.com](http://www.k2-systems.com)

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