



## ASSEMBLY INSTRUCTIONS

# S-Dome 2.0 System



# Content

▶ Tools overview	3
▶ General safety information	4
▶ Required Materials	6
▶ Assembly	9
▶ Notes	17

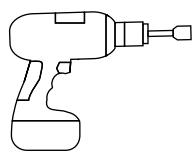
## QUALITY TESTED – SEVERAL CERTIFICATIONS

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)



# Tools overview



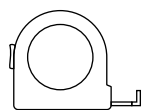
6mm



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



6mm



≥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 S-Dome 2.0 System can be installed under the following conditions. Please clarify in advance whether the manufacturer authorises clamping on the short side. For the module list, please contact your account manager or [www.k2-systems.com](http://www.k2-systems.com).



## ROOF REQUIREMENTS

- ▶ This system can be used on all established flat roof constructions with a pressure resistant substrate and a roof pitch of up to 5°. From a roof pitch of 3.1°, the system must be fixed mechanically. See installation instructions for roof anchors.
- ▶ The roof surface must be clean and dry. Roof irregularities must be corrected or removed where appropriate.
- ▶ The coefficient of friction of the roof must be determined on-site.  
See video [https://youtu.be/os-Cedx\\_QEk](https://youtu.be/os-Cedx_QEk)



## STATIC REQUIREMENTS

- ▶ Sufficient roof structure load-bearing capacity, as well as insulation pressure capacity
- ▶ For framed modules with a frame height of 30-50 mm
- ▶ Permissible module dimensions: length 1386-2067 mm, width 950-1100 mm

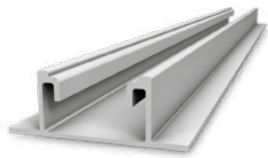


## IMPORTANT MOUNTING INSTRUCTIONS

- ▶ 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).
- ▶ External influences that act on this system are only reflected in the design of the ballast to a limited degree. For instance, unevenness, thermal elongation, moss, water accumulation and ageing of the sheeting cannot be considered, although these factors might also precipitate system displacement under certain circumstances. We recommend you check whether the system requires additional mechanical attachment, as the impact of these influences may be greater on slanted roofs.
- ▶ The inclination of the Dome system is 10°.
- ▶ A minimum distance to the roof edge of 600 mm must be observed.
- ▶ At least two modules must be assembled discontinuous to use this mounting system.
- ▶ Ensure a thermal separation (distance between module blocks) after a maximum of 11 m in the module row direction and in the direction of the base rail.
- ▶ Tightening torque of 14 Nm for all module clamps.
- ▶ In the event of exceptional circumstances (such as storms, heavy rain, earthquakes, etc.), the system should be checked by a specialist. Should an inspection find damage or plastic deformation (such as in the module clamp area) the components must be replaced.
- ▶ Adhere to module manufacturer recommendations for clamping area and module installation (see module manufacturer instructions). Check whether manufacturer approval is available for corner clamping.
- ▶ Compatibility of building protection mats with roof covering must be checked.
- ▶ It is important to ensure that the rain water flow is not hindered.

# Required Materials

In order to assemble the K2 Systems S-Dome 2.0 installation system, the following listed system components are essential. The piece quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.



Mounting Rail K2 SpeedRail 22, 880 mm | 2002031

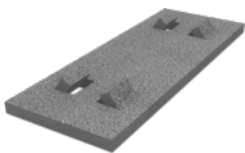
Material: aluminium EN AW-6063 T66



K2 Dome S1000 2.0 | 2001967

Width: 65 mm

Material: aluminium EN AW-6063 T66



K2 Building protection mat Dome Alu | 2001695

470x180x18 mm

Material: PUR-bound rubber granules with aluminium triplex foil, laminated

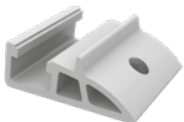
Alternatively: K2 Building protection mat Dome

470x180x18 mm

Material: Unlaminated PUR-bonded rubber granulate

| 2001696

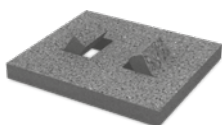
The respective use of a laminated or unlaminated building protection mat depends on the type of roof membrane and must be checked on site.



K2 Dome SD 2.0 | 2001968

Width: 65 mm

Material: aluminium EN AW-6063 T66



K2 Building protection mat Dome SD Alu | 2001739

160x180x18 mm

Material: PUR-bound rubber granules with aluminium triplex foil, laminated

Alternatively: K2 Building protection mat Dome SD

160x180x18 mm

Material: Unlaminated PUR-bonded rubber granulate

| 2001740

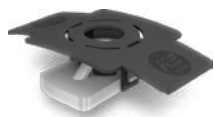
The respective use of a laminated or unlaminated building protection mat depends on the type of roof membrane and must be checked on site.



K2 Bolts with serrated under head | item number system-specific

according to M8 DIN 912/EN ISO 4762

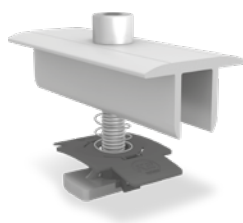
Material: stainless steel A2, WS 6 mm



### MK2 Slot nut with clip

| 1001643

Material: stainless steel und PA

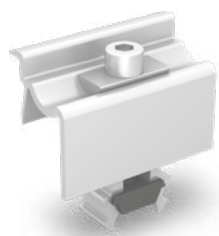


### K2 Module middle clamp XS Set

| item number  
system-specific

The Set consists of:

- ▶ 1 Middle clamp XS, aluminium mill finish/ black
- ▶ 1 Allen bolt M8, stainless steel A2
- ▶ 1 MK2 slot nut with clip, stainless steel and PA
- ▶ 1 Securing washer S8, stainless steel A2



### K2 Universal module clamps OneEnd

| 2002514

Module frame height:: 32-42 mm

Alternativ: K2 Module End Clamp Standard Set

| item number  
system-specific



### K2 Washer 8,4x30x1,5 mm

| 1000273

Material: stainless steel A2

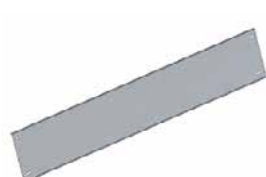


### K2 Bolts with serrated under head

| 1000085

according to M8x16 DIN 912/EN ISO 4762

Material: stainless steel A2, WS 6 mm



### K2 Windbreaker

| 2001119

K2 Windbreaker Dome S1000 1600 mm

For module length between 1550 and 1600 mm

Length: 1600 mm

Material: aluminium

K2 Windbreaker Dome S1000 1700 mm

| 1005843

For module length between 1601 and 1700 mm

Length: 1700 mm

Material: aluminium

K2 Windbreaker Dome S1000 2000 mm

| 2002732

For module length between 1890 and 2080 mm

Length: 2080 mm

Material: aluminium

# Required Materials

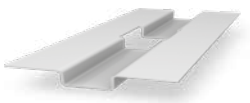


## K2 Dome Wire Hanger

| 2002324

Accessory for module cable mounting  
Material: stainless steel (1.4310)

## OPTIONAL COMPONENTS FOR BALLASTING:



## K2 SpeedPorter

| 2002300

Ballast support for slabs and stiffening  
Material: aluminium EN AW-6063 T66



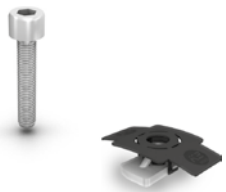
## K2 Dome Porter 1750 mm

| 200008

Ballast support for slabs  
Pair of L-Profiles to carry required ballast as concrete slabs or similar  
Material: aluminium

Alternatively: K2 Dome Porter 2050 mm

| 2001140



## K2 Dome Porter Screw Set

| 2000155

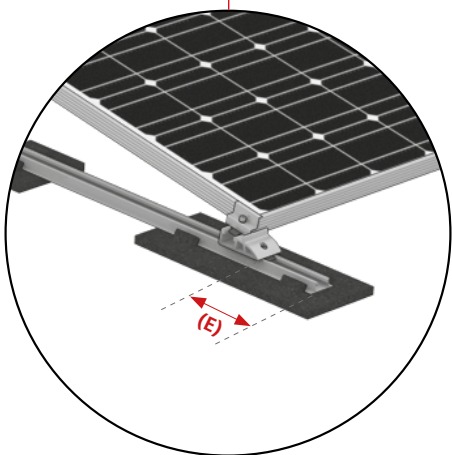
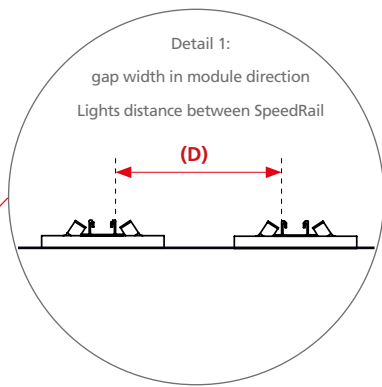
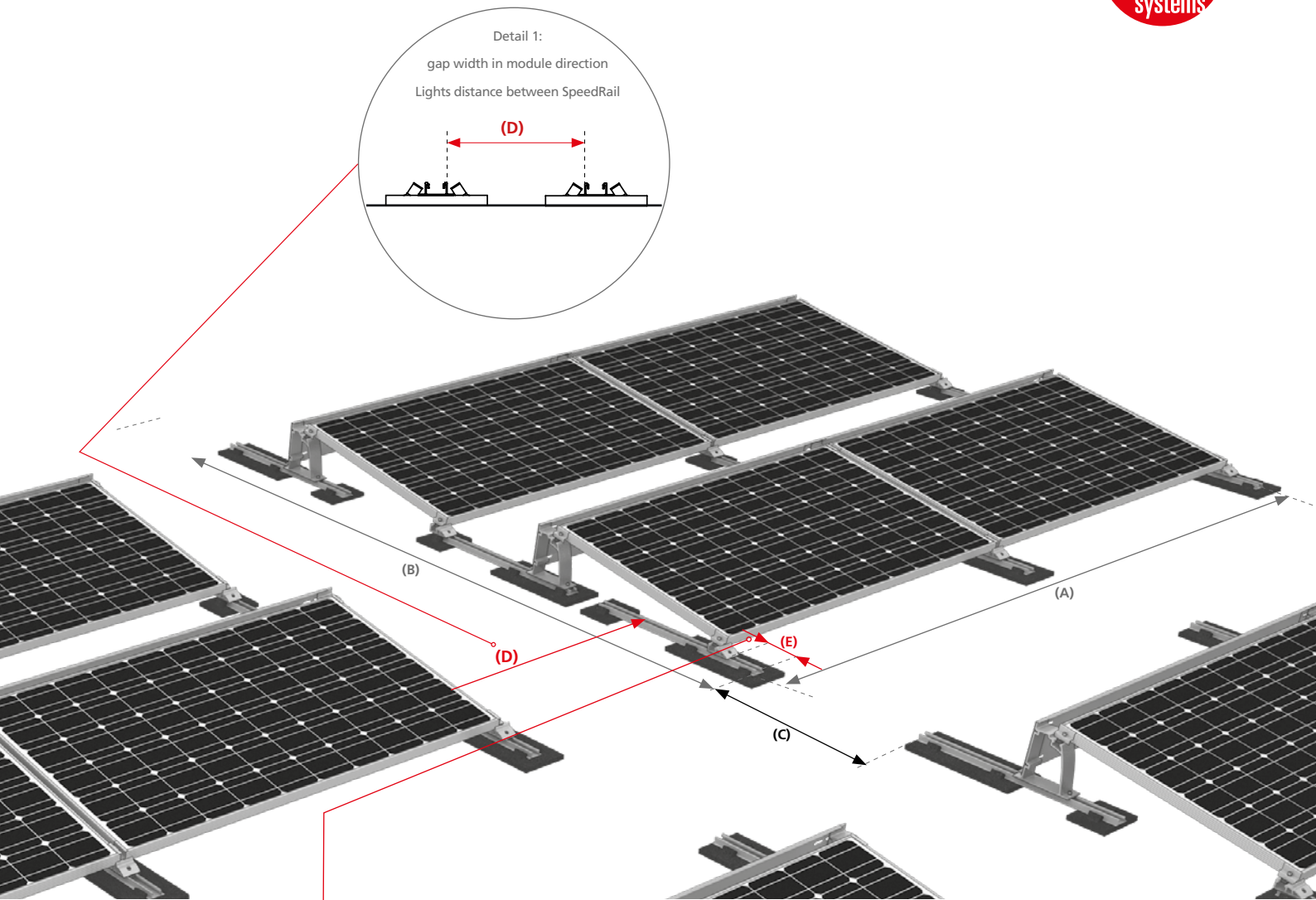
(optional to the K2 Dome Porter) one set per Porter

The set consists of:

- ▶ 2 MK2 slot nut with clip (1001643), stainless steel, PA
- ▶ 2 Allen Bolt M8x20 (1000190), WS 6 mm, stainless steel A2 steel A2



# Assembly

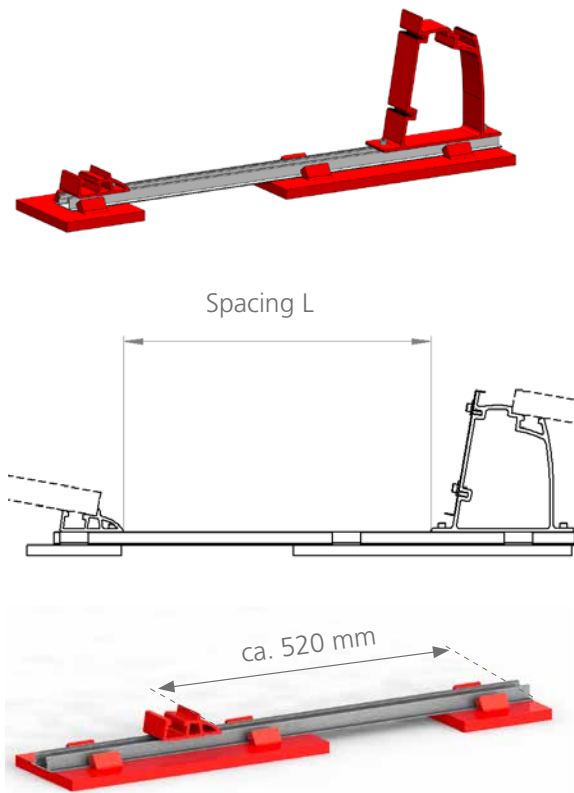


## SPACING BY S-DOME 2.0 SYSTEM:

- (A) Module block in module direction: 11 m
- (B) Module block in rail direction: 11 m
- (C) Gap width along the base rail: min. 20 mm
- (D) Gap width between module blocks in module row direction: min. 140 mm (Lights distance according to detail 1)
- (E) Distance to rail end: min. 40 mm

# Assembly

## 1 PRE-ASSEMBLING DOME SD 2.0 AND S-DOME 1000 2.0



Lay the building protection mats with the aluminum-covered side (if used) facing down. Lay the SpeedRail on top of the building protection mats and connect via snap tabs. Insert the MK2 slot nuts into the rails and turn 90° clockwise to lock in place. Position Dome S1000 and Dome SD on the SpeedRail according to the illustration and the spacing distances given in the assembly instructions and fix in place with Allen bolts and the MK2 slot nut.

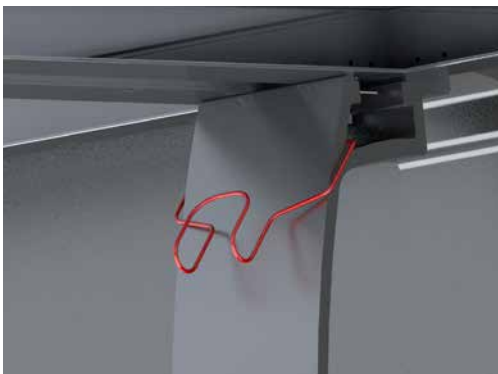
Tightening torque: 16 Nm

Spacing L =  
row spacing – module width x 0.98 – 180 mm.

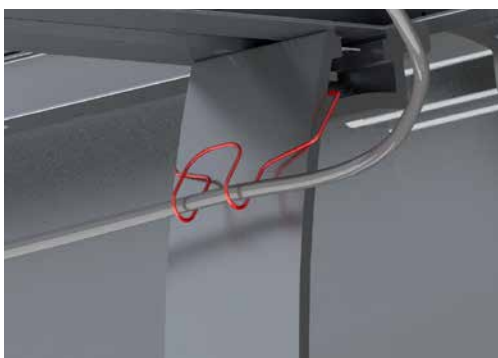
The row spacing was determined during the layout in K2 Base and can be seen in the assembly instructions.

At the first row of each array mount each Dome SD so that ballast can be placed in front of the modules. (Our recommendation about 520 mm.) The spacing between the SpeedRail pieces depends on the module width (950 - 1100 mm) and is determined by the end positions during installation.

## 2 MOUNT THE DOME WIRE HANGER

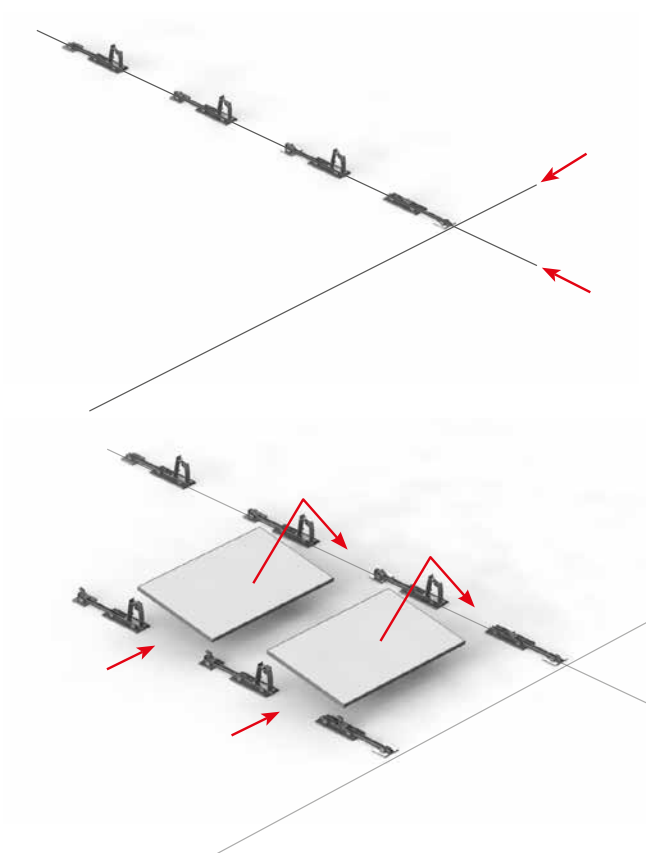


Place the Dome Wire Hanger on the Dome S1000 in the channel for fastening the module clamps. The nose of the Dome Wire Hanger upwards - pointing towards the module.



Before attaching to the module, connect the module cable. Then attach the cable to the Dome Wire Hanger.

### 3 LAYOUT DESIGN

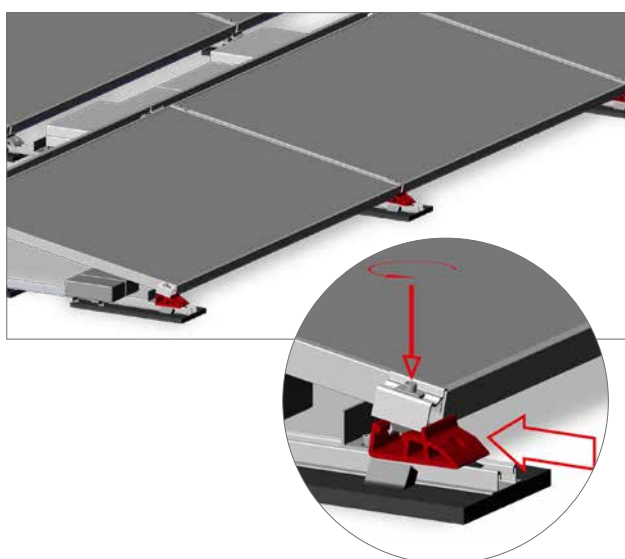


Pre-assemble all Dome components on the short rails accordingly and install on the roof according to the following scheme:

- ▶ Align two edges. East or west and north or south.
- ▶ Use alignment string or mark with a chalk line
- ▶ Roughly spread out pre-assembled rail segments with Dome components over the roof
- ▶ Align first row to the line

- ▶ Now assemble the modules on the first row with the components; move across the spread-out components from the opposite side
- ▶ Assemble all parts to the appropriate edge up to the stop position

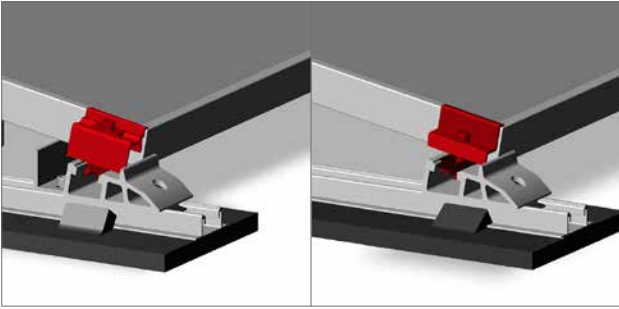
### 4 POSITION MODULE AND FASTEN DOME SD



The modules are laid horizontally, in the centre of two Dome D1000s. The specially affixed bars serve as the stop. Thereafter, the module is positioned on two Dome SDs. The only loosely fastened Dome SD together with the protection mat SD 160 × 180 × 18 mm are pushed towards and against the module and then fastened. Before fastening ensure that the WINGS of the protection mat are under the Dome SD and the rails at the array edges do not protrude. Tightening torque: 16 Nm.

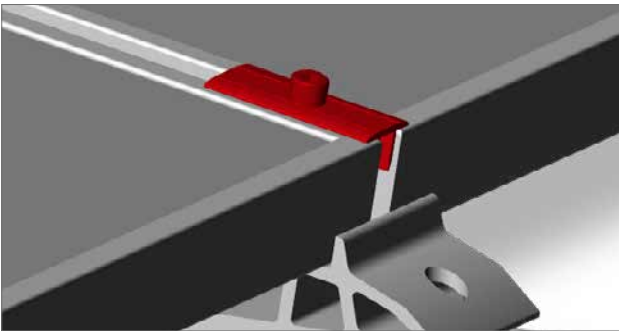
Attention: Only modules approved for corner clamping may be used, see point „GENERAL SAFETY INFORMATION“ on page 5. Please take care not to cover any drainage holes in modules, otherwise potential condensation cannot run off.

## 5 POSITION AND FASTEN MODULES



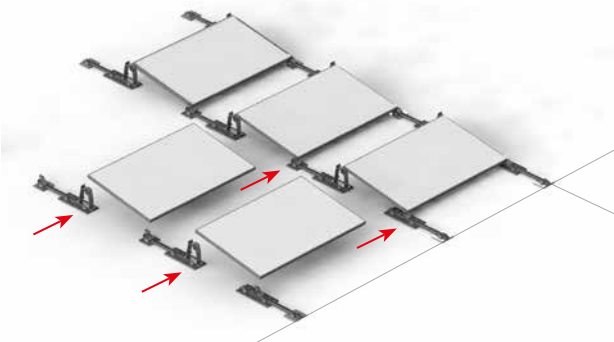
Fix the module in place at the end of a row with universal module end clamp OneEnd. Klick the Stance in the notches. Place clamps on the module frames and fix them.

Alternatively, use the standard end clamp sets. Insert the MK2 nut into the slot of the Dome SD 2.0 and the Dome S1000 2.0 and turn clockwise by 90°. Place clamps on the module frames and fix them.



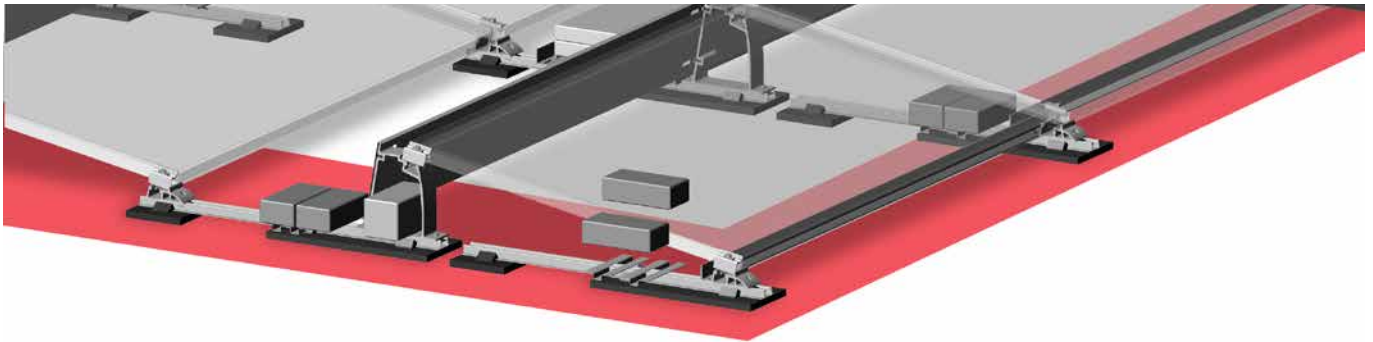
Between every two modules, use two XS middle clamp sets. Insert clamp sets in the S1000 and SD 2.0 notches and rotate 90°. Place the clamps onto the module frame and fix them in place.

Tightening torque: 14Nm

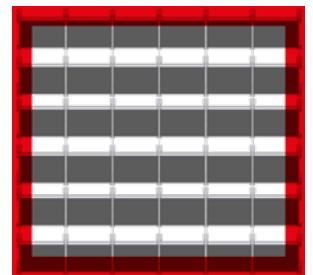


- ▶ Start laying the next row at the reference line
- ▶ Always assemble modules at the stop point
- ▶ Ensure that the clamps are securely fastened

## 6 BALLASTING THE SYSTEM

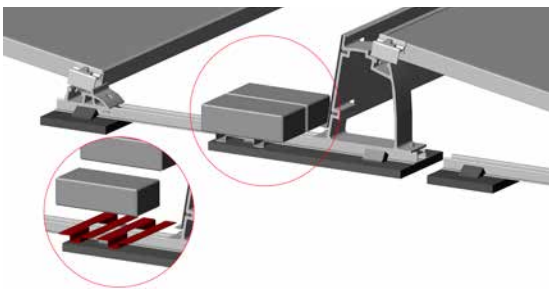


At the module field edges the specified ballst under the module must be placed as near as possible to the SD Dome. The correct ballast specifications are calculated automatically by K2 Base On and are provided in the ballast plan.



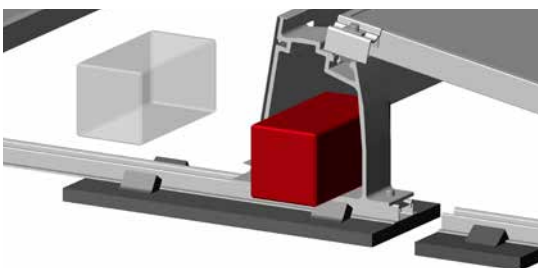
Module field edges

### Installing K2 SpeedPorter



Depending on ballast size, position each SpeedPorter with the appropriate distance and insert the ballast. See page 15.

### Ballasting without additional items in mid of module field

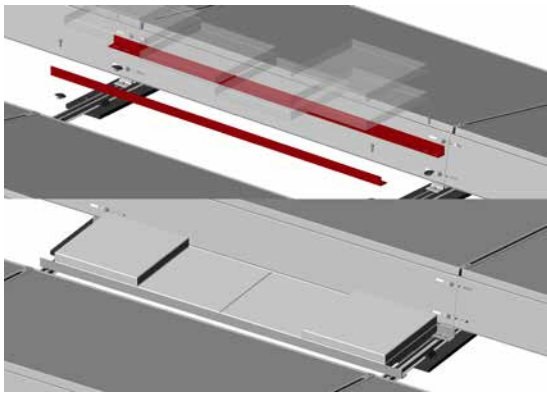


For ballast of up to 5 kg, one or two individual weight bricks can be placed in the cavity of the S1000 2.0. See page 15.

### Ballasting with K2 Porter:



Mount the Porters within a module block according to the drawing in an offset fashion, and distribute the ballast evenly.






Fix Porters (L-brackets) in place on the parallel SpeedRails with MK2 slot nuts and countersunk screws.

The distance between the Porters depends on the size of the ballast bricks chosen; due to the length of the SpeedRail, bricks with a maximum width of 50 cm may be used. See page 15.  
Tightening torque: 16 Nm

## 7 BALLASTING THE SYSTEM

In some areas, the system may need to be outfitted with ballast.  
If this needs to be done, please refer to the following ballast table.

non-binding ballast weight table					
Recommended ballast weight components	brick dimensions [cm]*	Maximum number of bricks in S1000 2.0 (2001967)	Maximum number of bricks in ballast components	Brick weights [kg]*	Ballast per S-Dome 2.0 elevation [kg]
 S1000 2.0	10x10x10	1		2,2	2,2
	20x10x8	1		3,5	3,5
	20x10x10	1		4,5	4,5
 K2 Porter	40x40x4		6	14,0	84,0
	40x40x5		6	19,0	114,0
	50x50x4		5	22,0	110,0
 K2 SpeedPorter	20x20x6		2	5,4	10,8
	20x20x8		2	7,2	14,4
	40x40x4		2	14,0	28,0
	30x30x5		3	10,5	31,5
	40x40x5		2	19	38,0
	50x50x4		2	22	44,0

Warning: When using Porter under the module, note the space under the modules.

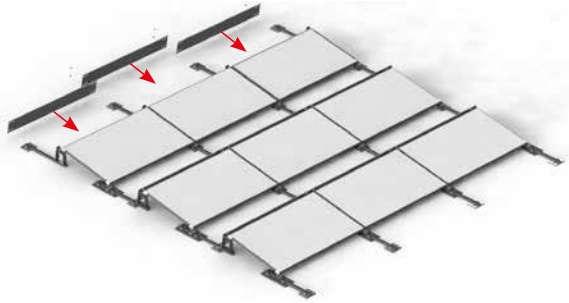
For ballast weights exceeding 100 kg, please consult a K2 technician.

We are happy to assist you with selecting the optimal ballast components once you the ballast size is determined.

Table for bricks and slabs *		
Type	Weight in kg	Dimensions (LxWxH) in cm
Paving bricks	2,2	10x10x10
	3,5	20x10x8
	4,5	20x10x10
	5,4	20x20x6
	7,2	20x20x8
lagstones (slabs)	14	40x40x4
	19	40x40x5
	22	50x50x4

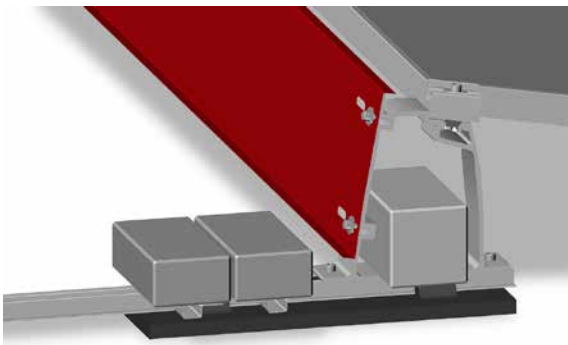
\* recommended values

## 7 INSTALL THE WINDBREAKER



Use a ballast with the Dome S1000 2.0 where necessary. See page (see page 15) and fix module cable in place.

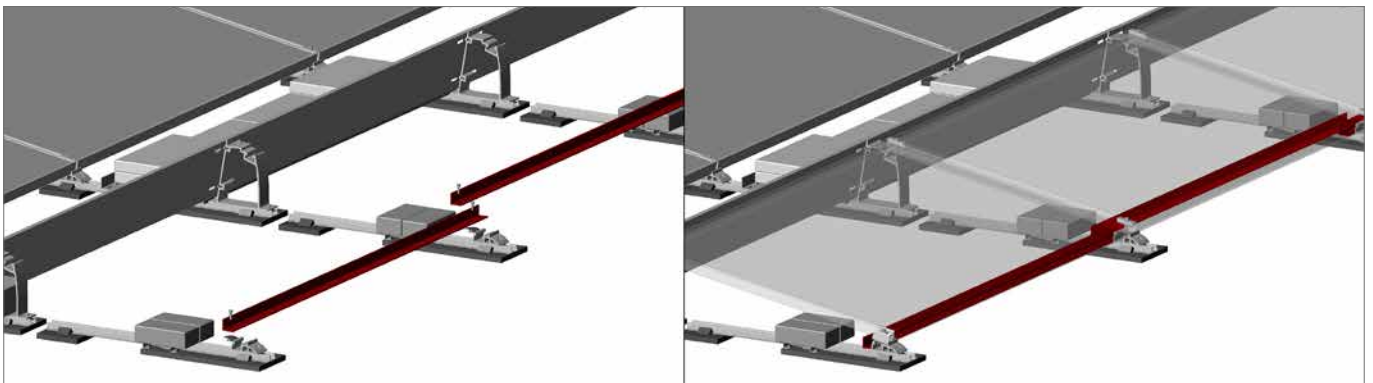
Align upper beading of the wind breaker with the ridge of the Dome S1000 (Surface with foil faces outwards.) Align windbreaker at the module edge and fix in place via slotted holes with M8x16 Allen bolts and washers in screw channel. Remove protective film. Tightening torque: 16 Nm



If two windbreakers overlap, align them so that a screw (including washer) can be bolted through the slotted hole!

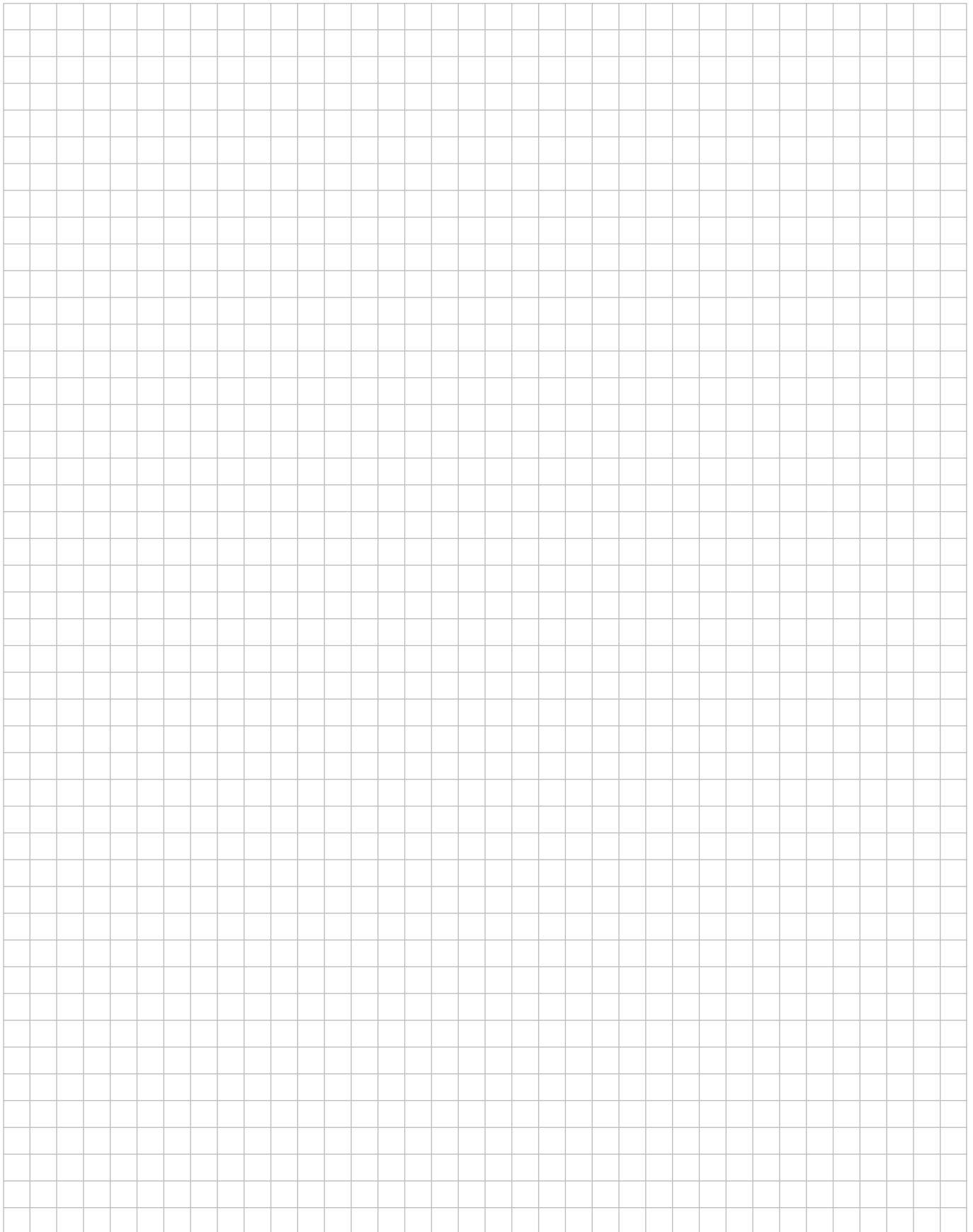
Ensure the windbreaker does not protrude beyond the end of the row! Tightening torque: 16 Nm

K2 Porter for bracing can be used for the purpose of ballast reduction in the corner areas. These must always be positioned on the three outer modules according to the technical design.

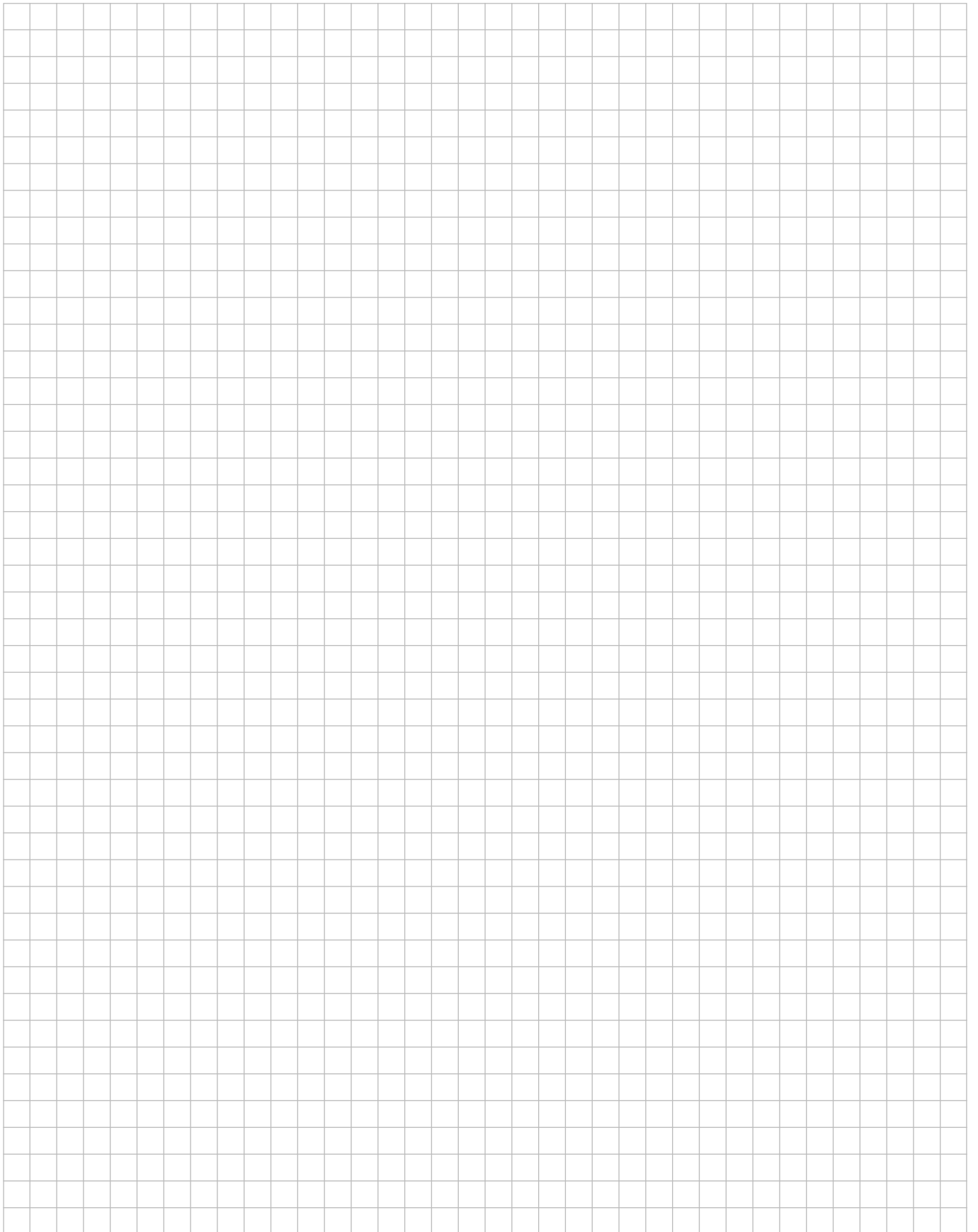


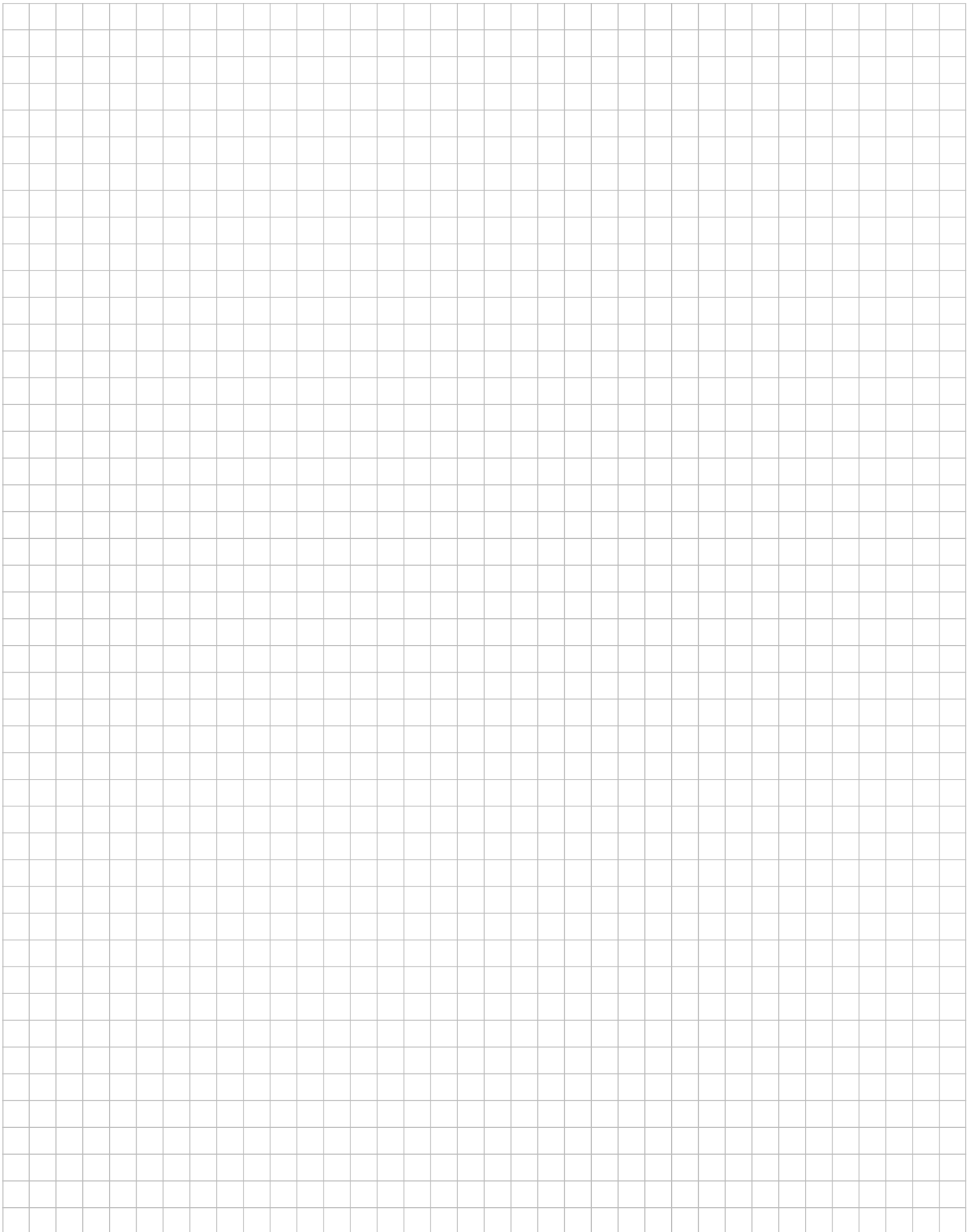


# Notes



# Notes





## 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)

### **K2 Systems GmbH**

Industriestraße 18  
71272 Renningen  
Germany

Tel. +49 (0) 7159 - 42059 - 0  
Fax +49 (0) 7159 - 42059 - 177

[info@k2-systems.com](mailto:info@k2-systems.com)  
[www.k2-systems.com](http://www.k2-systems.com)