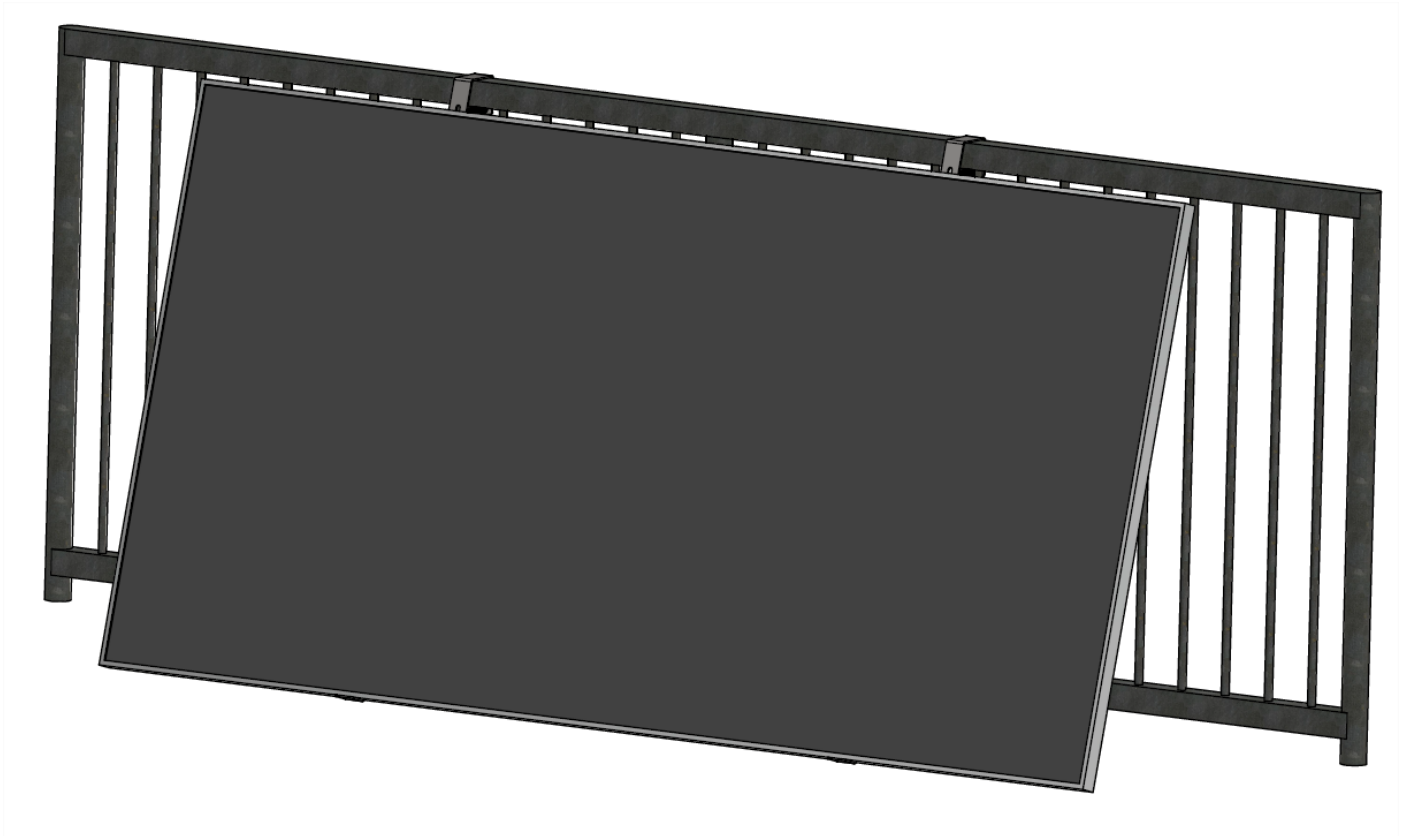
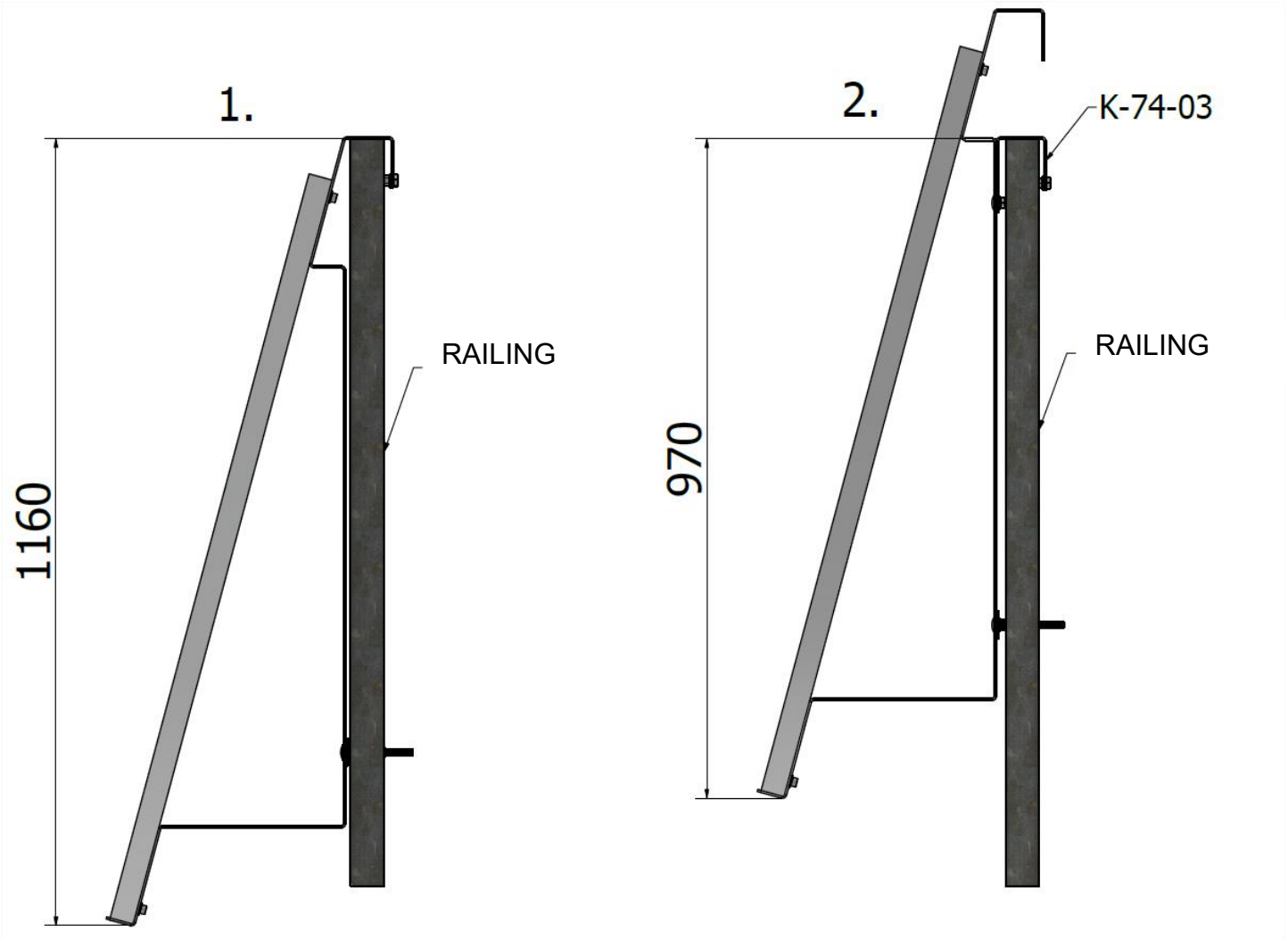
INSTALLATION INSTRUCTIONS
FOR RAILINGS
ONE MODULE HORIZONTALLY



The installation system described below is used to fix photovoltaic modules to balcony railing in horizontal orientation at 15-degree inclination. The structure is compatible with modules from 1134 [mm] to 1140 [mm] wide and up to 2278 [mm] long.

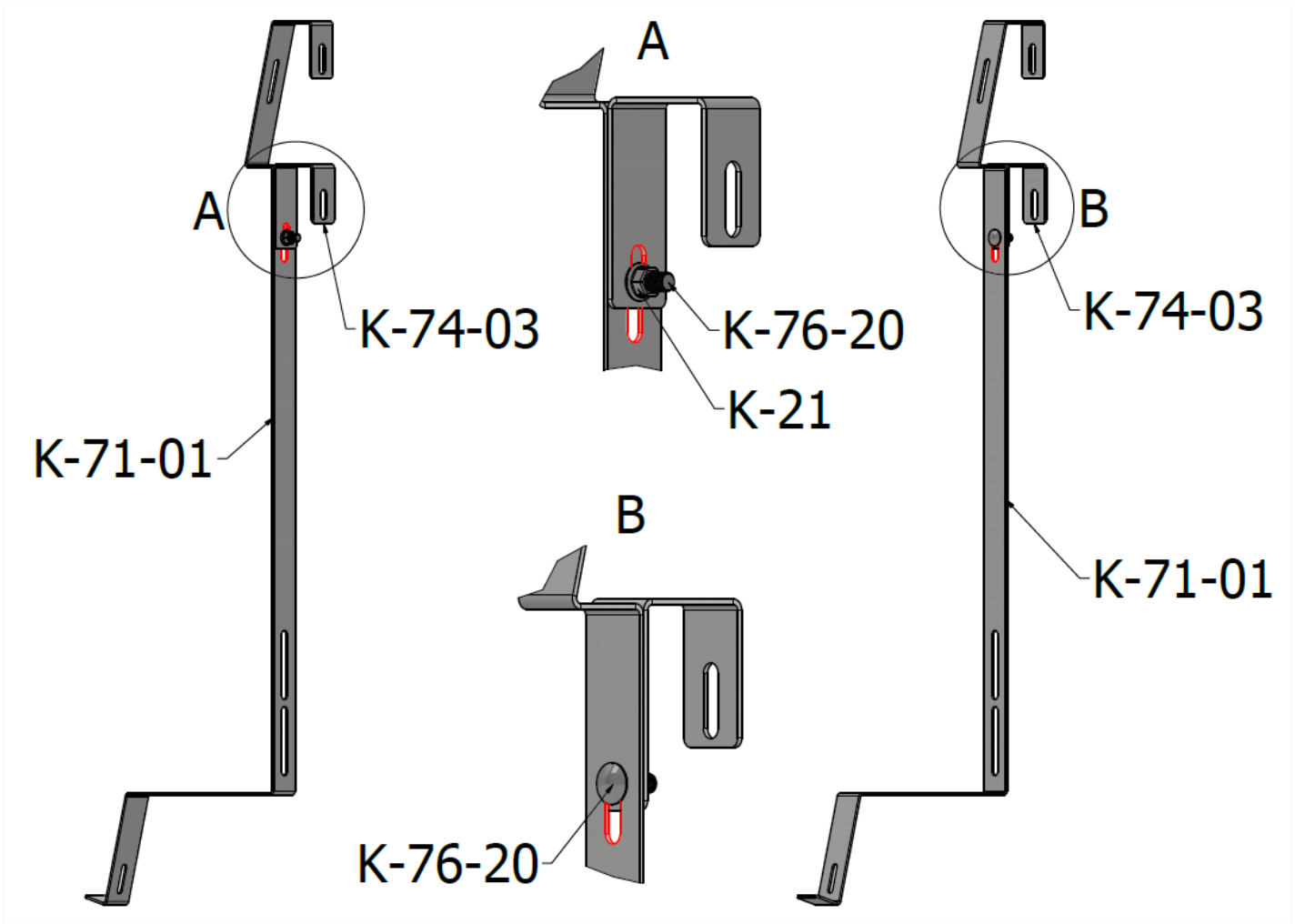
During production, every effort was made to ensure that you receive a top-quality product that is also easy to install. These instructions are a set of rules for the correct installation of the structure components, but do not constitute a design or a substitute for it. The installer carrying out the installation must be suitably trained and qualified for the work to be carried out. Total responsibility for correct installation lies with the installer, who should choose the right type of construction.

1. The first step is to choose the type of structure assembly. The K-74-03 hook is optional and the height at which the lower edge of the module will be positioned depends on its use FIG.1. In the case of installation without the use of the K-74-03 hook, the lower edge of the module will be approx. 1160 [mm] away from the top edge of the railing, while if the K-74-03 hook is used, the lower edge of the module will be approx. 970 [mm] away from the top edge of the railing.



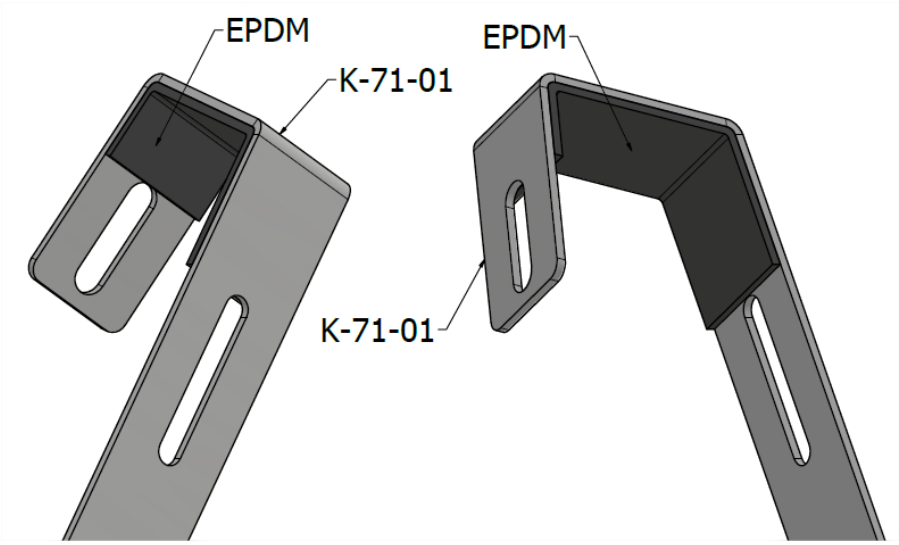
RYS.1 *Dimensions of both design variants*

Use the K-76-20 carriage bolt and K-21 nut to attach the optional hook K-74-03 properly. Screw element K-74-03 to the rear of element K-71-01 using the prepared hole.

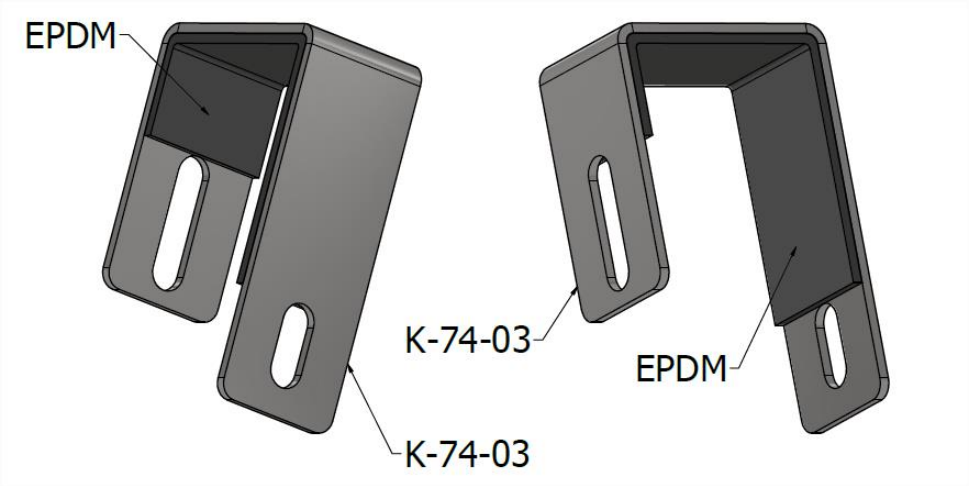


RYS.2 *Mounting of optional hook K-74-03*

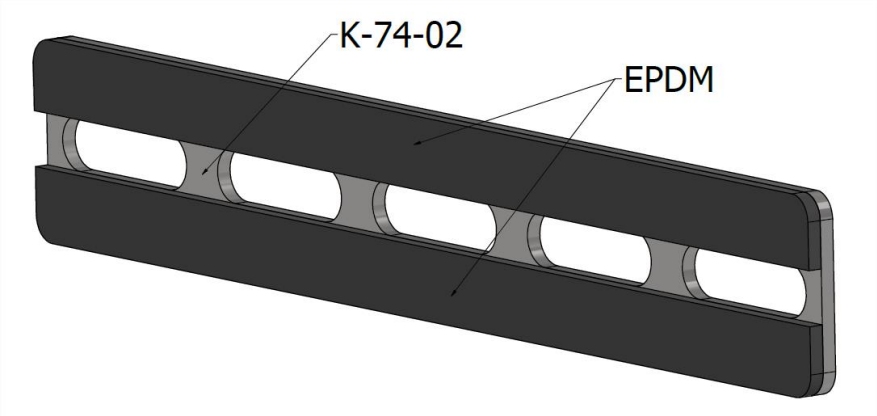
2. In the next step, it is advisable to tape elements K-74-02 and, depending on the previously selected method of structure installation: hook K-71-01 or hook K-74-03 (if used) to protect the railing from damage.



RYS.3 *Protection K-71-01*

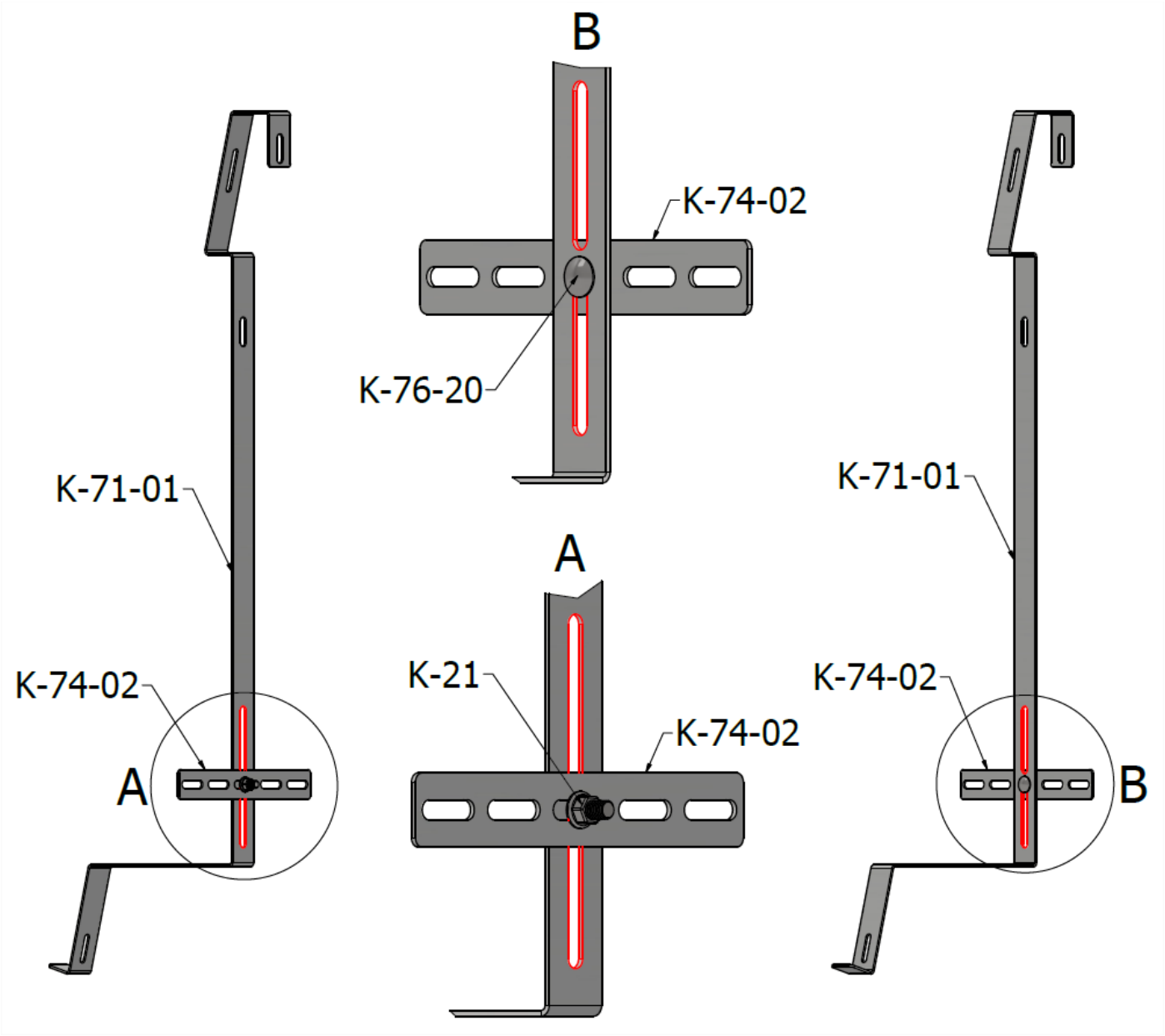


RYS.4 *Protection K-74-03*



RYS.5 *Protection K-74-02*

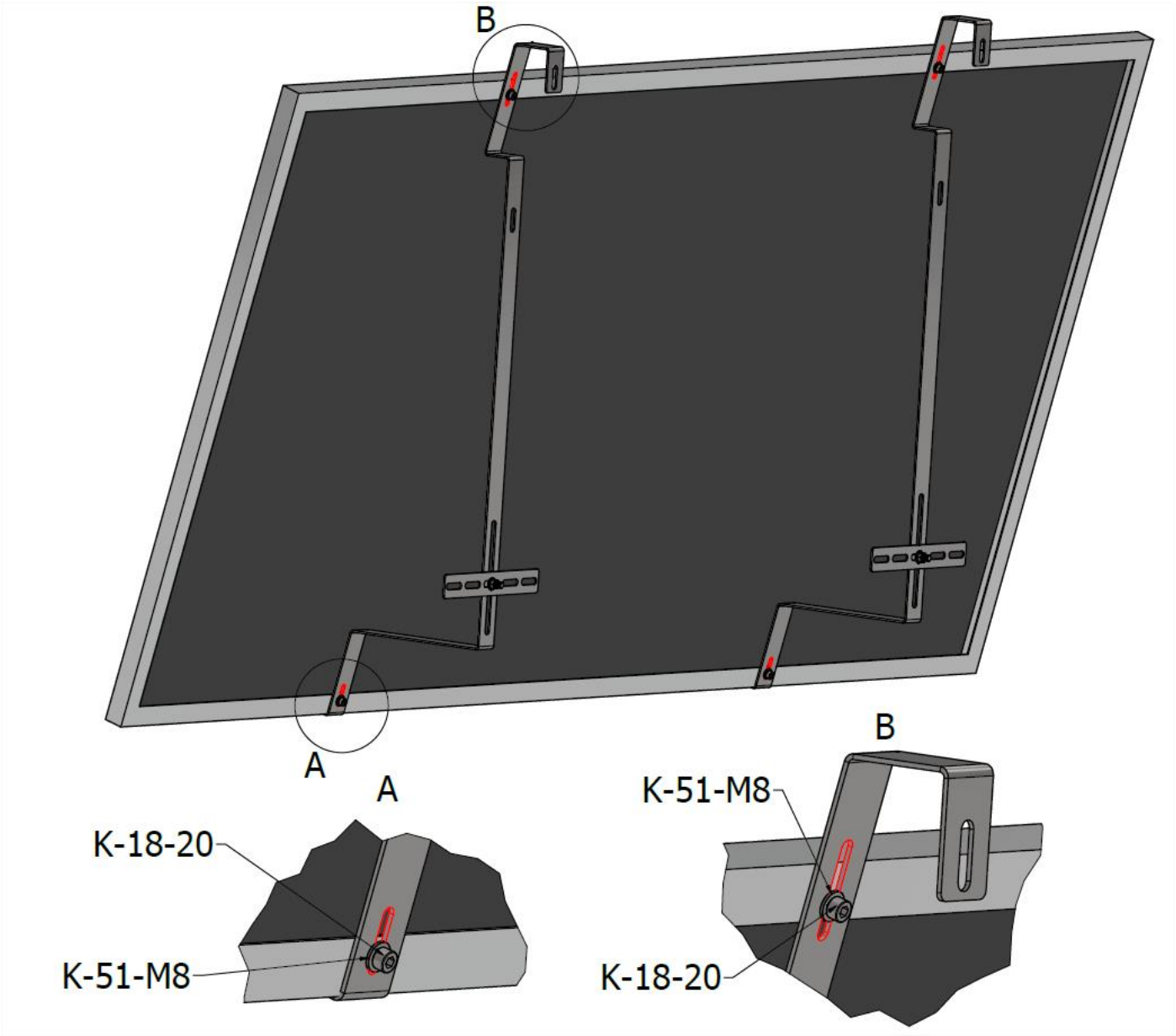
3. In the next step, pre-screw flat bar K-74-02 to element K-71-01. The flat bar should be screwed to the rear side of the hook with a K-76-20 carriage bolt and a K-21 nut using one of the two prepared oblong holes FIG.3.



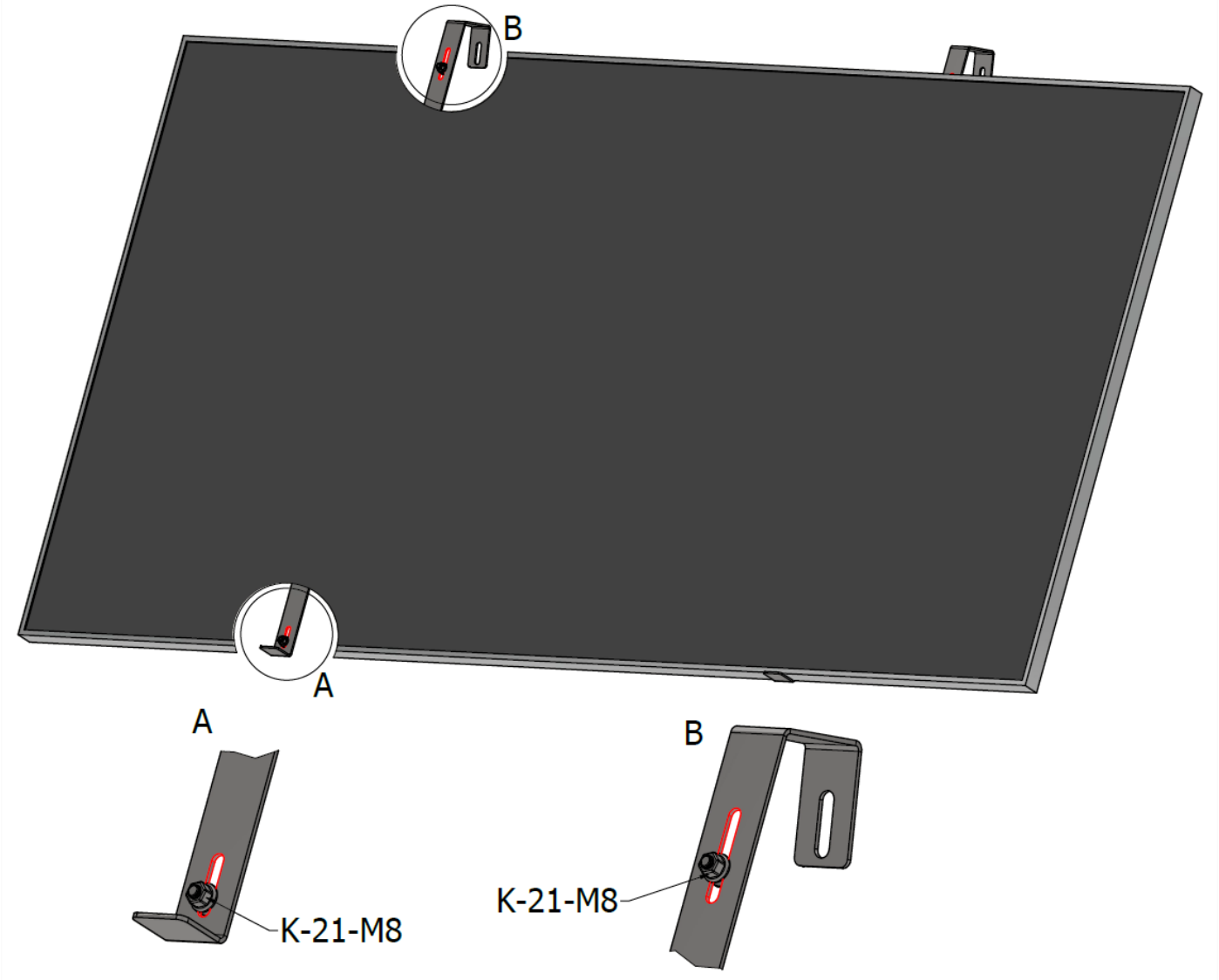
RYS.6 *Bolting of flat bar K-74-02 with hook K-71-01*

4. The next step is to bolt the module to the two pre-screwed hooks according to points 1 and 2. To do this, use four K-18-20 allen bolts, four K-51-M8 washers and four K-21-M8 nuts (FIG.3, FIG.4).

   NOTE: Use the manufacturer-prepared holes in the module frame to screw the module in place.



RYS.7 *Installation of module (view I)*



RYS.8 *Installation of module (view II)*

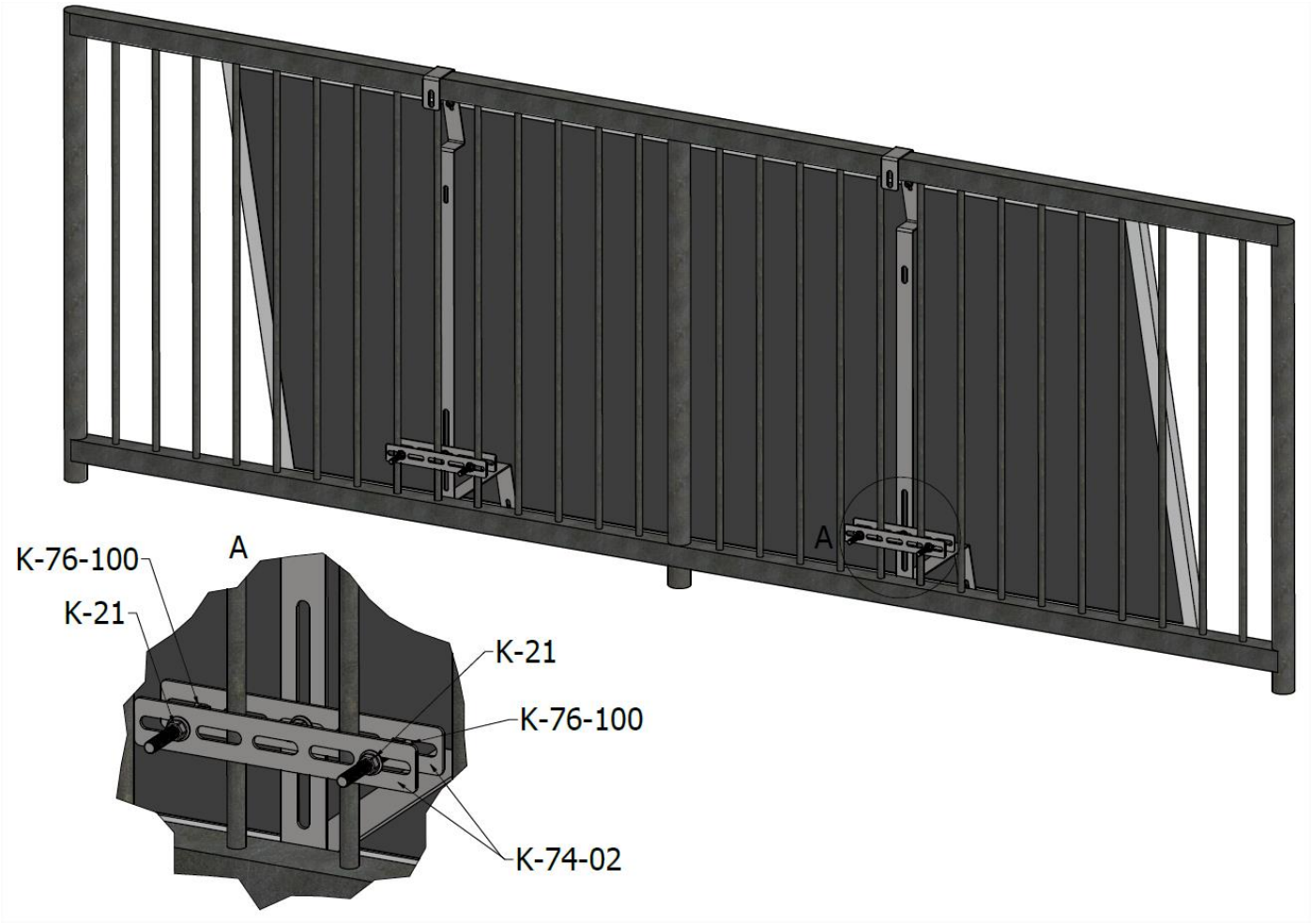
5. The allen screws must be tightened to a torque of 18 [Nm].

6. In the next step, the structure should be put over the railing in such a way that it rests against the railing on element K-71-01, or K-74-03 if it is used (FIG.6).

RYS.9 *Installation of the structure on the railing*

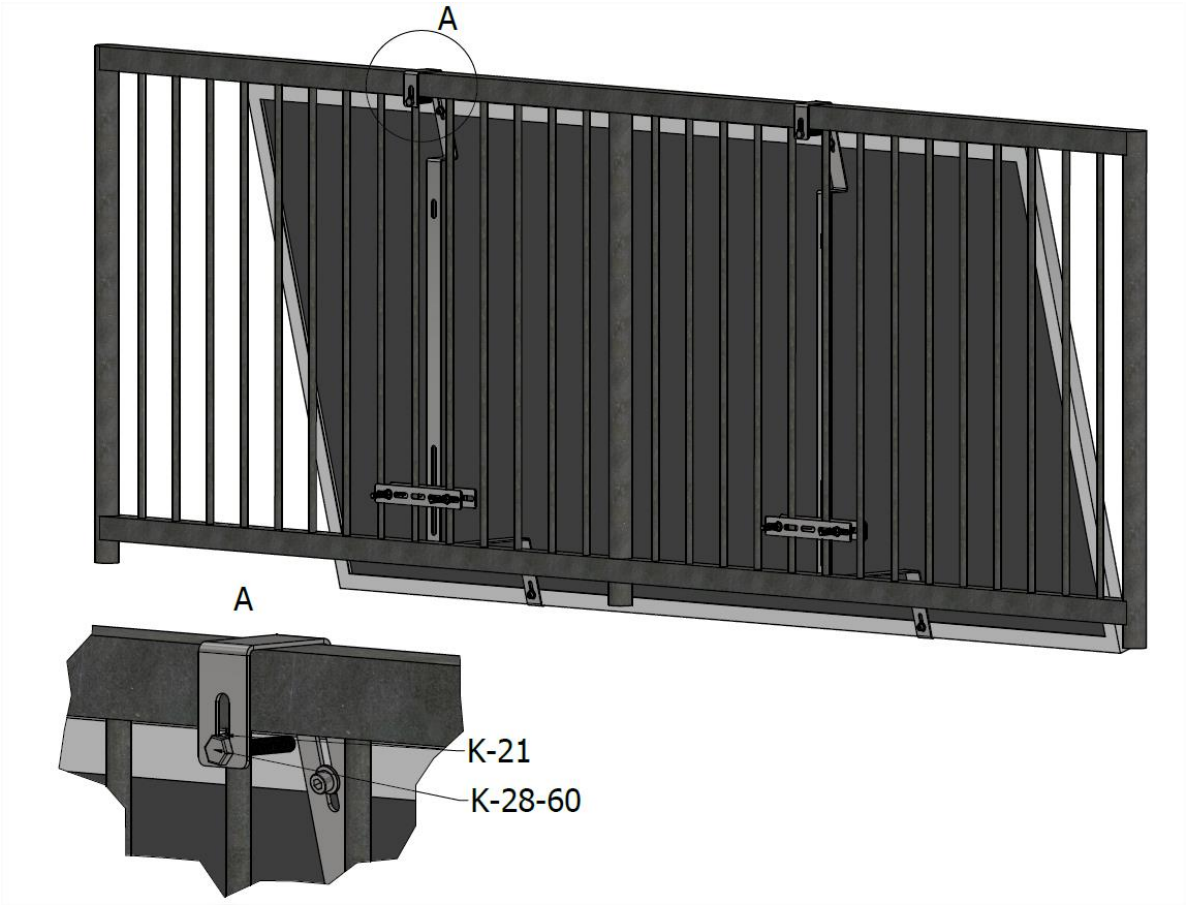
7. In the next step, pre-screw elements K-71-01 to the railing with second flat bars K-74-02. This is done using four K-76-100 carriage screws and K-21 nuts.

   NOTE: It is permissible to use any two holes in the flat bar and to arrange the flat bars at an angle if the design of the railing requires this.



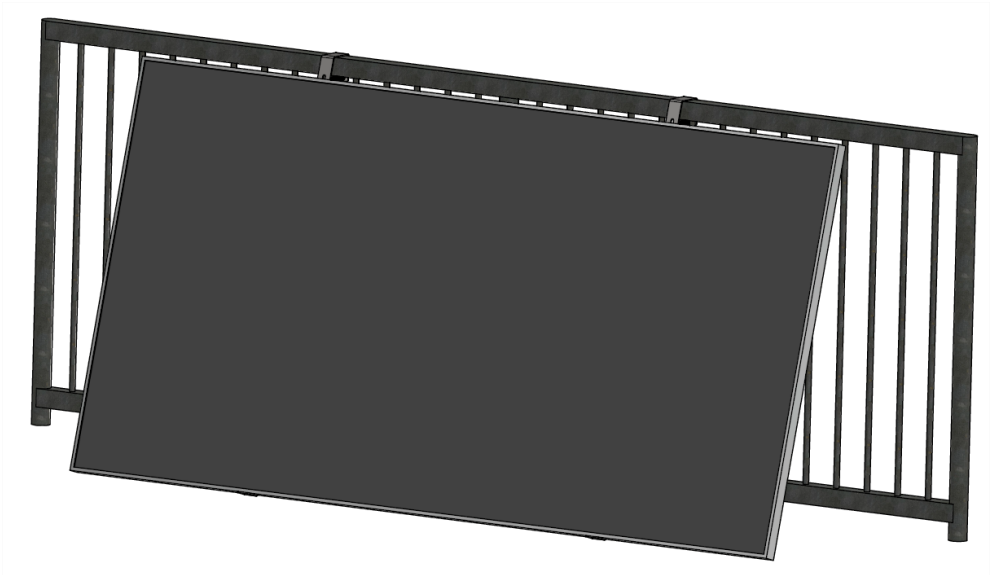
RYS.10 *Installation of flat bar K-74-02 on the other side of the railing (view I)*

8. In the next step, place the K-28-60 hexagonal head bolt into the prepared hole in the K-74-03 element and screw on the opposite side with the K-21 nut (FIG. 8). The purpose of this bolt is to protect the structure from falling.



RYS.11 *Installation of the safety bolt*

9. All bolts with M10 threads must be tightened to a torque of 30 [Nm].



RYS.12 *Installed structure*

Thank you for using the KENO Sp. z o.o. structure.