

K-500

PHOTOVOLTAIC STRUCTURES



Factory
Production
Control
EN 1090-1



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ID 900016644



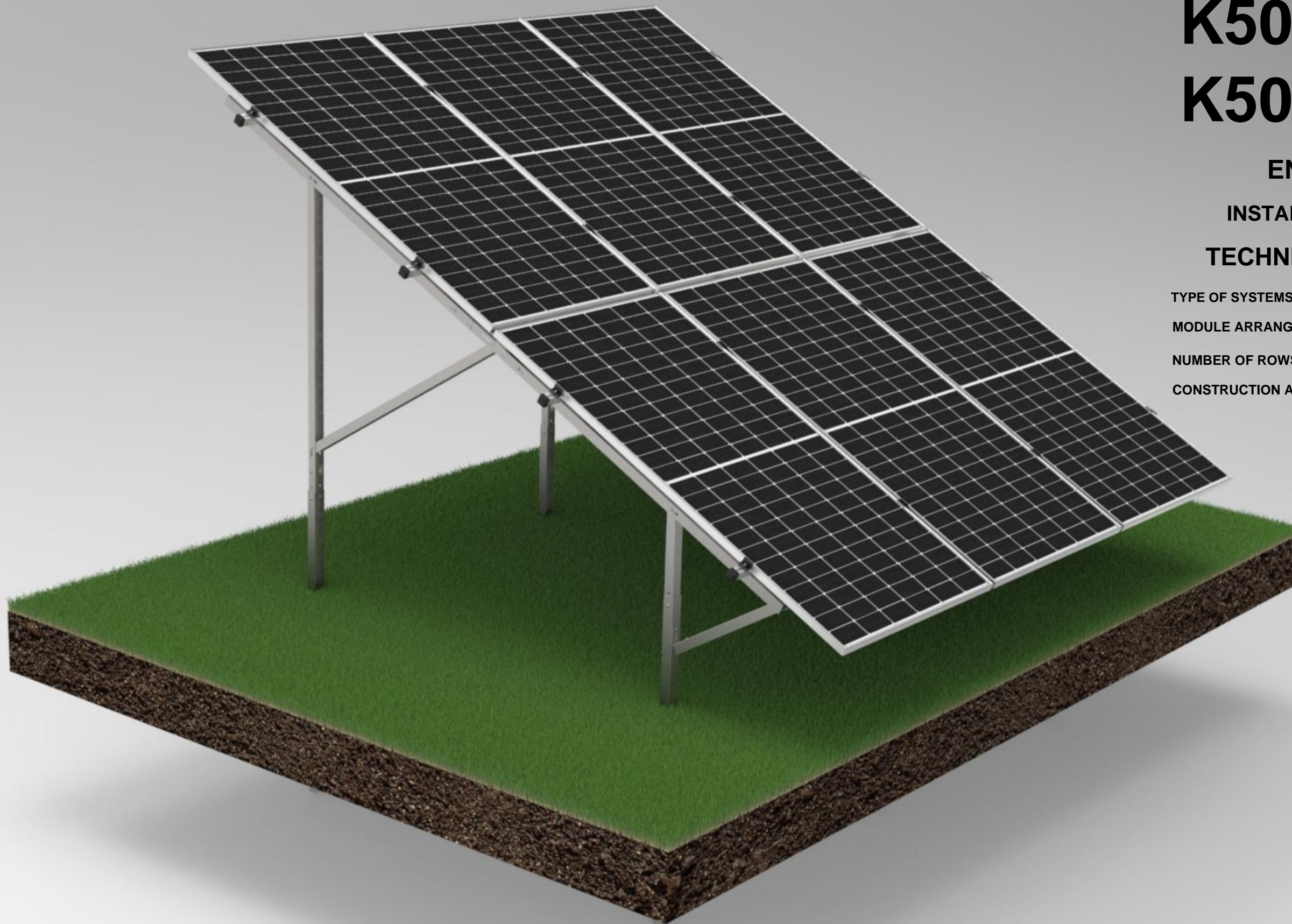
K502 K502 MAX K502 XL

ENGLISH VERSION

INSTALLATION INSTRUCTIONS

TECHNICAL SPECIFICATIONS

TYPE OF SYSTEMS:	DRIVING INTO THE GROUND
MODULE ARRANGEMENT:	VERTICAL
NUMBER OF ROWS:	2
CONSTRUCTION ANGLE:	30° (27° - FOR K502 XL)



HEALTH AND SAFETY INSTRUCTIONS FOR PERSONS INSTALLING PV SYSTEMS

A person installing photovoltaic PV systems performs a profession with an increased level of risk. This is due to constant contact with electrical devices under voltage, as well as threats caused by working at heights and related to the movement of loads of various sizes and weights.

In accordance with the Regulation of the Minister of Labor and Social Policy of September 26, 1997 on general occupational health and safety regulations (consolidated text: Journal of Laws of 2003, No. 169, item 1650, as amended), when performing work at heights (is is work performed on a surface at a height of at least 1.0 meter above the floor or ground level), other effective means of protecting employees against falling from a height should be used.





Before starting work related to the installation of PV systems, the installer should be equipped with individual protective equipment in the form of:

- personal fall protection equipment consisting of a harness and a lifeline with a shock absorber;
- a ladder or scaffolding, possibly a lift;
- wear work clothes, footwear and protective gloves;
- remove all unnecessary items from the workplace;
- prepare equipment and check its functionality (portable ladders, materials and power tools needed for work, etc.);
- make sure that starting work will not pose a threat to people staying near the workplace or in its immediate vicinity;
- if no threats are found at a given workstation, you can start performing tasks;
- before assembling the structure, make sure that there are no collisions in the ground at the installation site (e.g.: cables in the ground)

Additional notes

If you are in direct danger as a result of non-compliance with occupational health and safety regulations and rules by people staying near the workplace or in its immediate environment, the person installing photovoltaic systems has the right to refrain from performing work.

ESSENTIAL TOOLS

SCREWDRIVE + IMBUS6	KEY 13, 17	ANGLE, CABLE, RODS (FOR DETERMINING THE TABLE)	TORQUE WRENCH
			

TOOLS ENABLING THE CORRECT INSTALLATION OF DRIVEN-IN STRUCTURES

For proper installation, we recommend purchasing a special K500 matrix for a demolition hammer with an SDS HEX quick connector, available from the supplier.

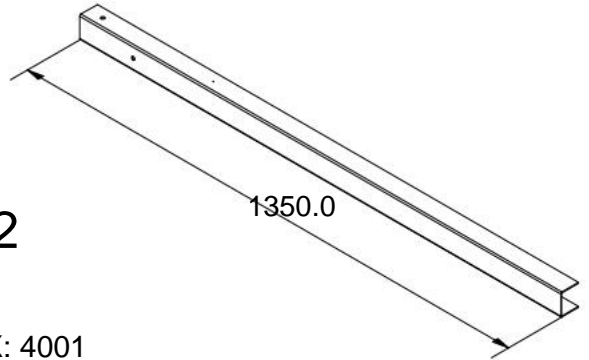
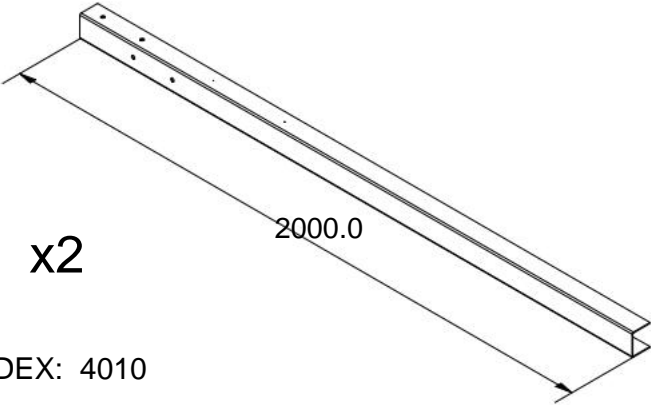
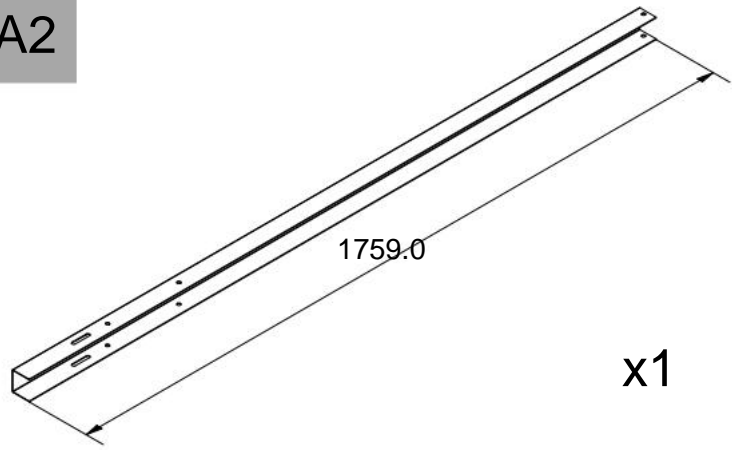
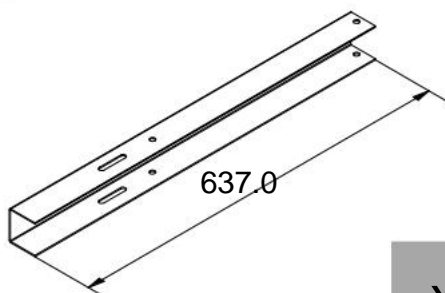
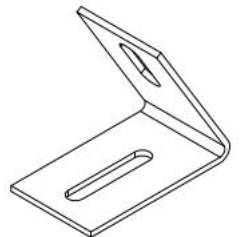
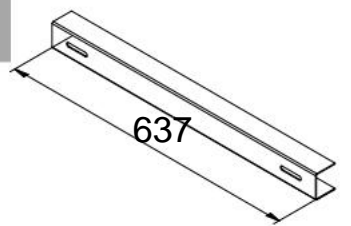
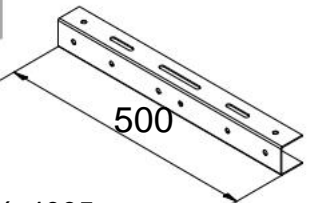
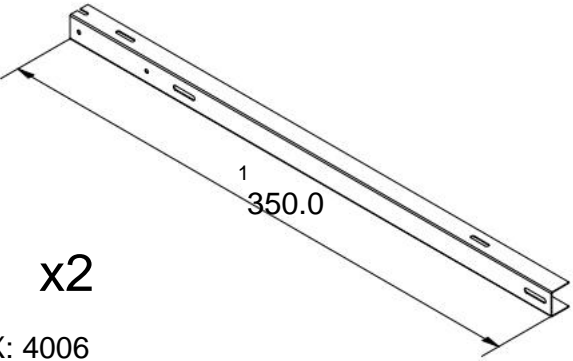
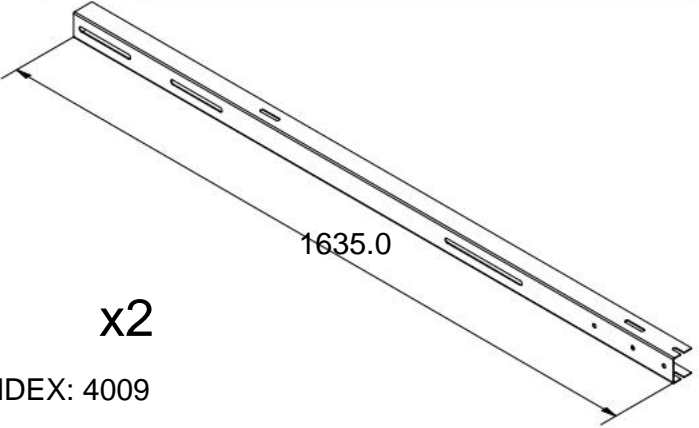
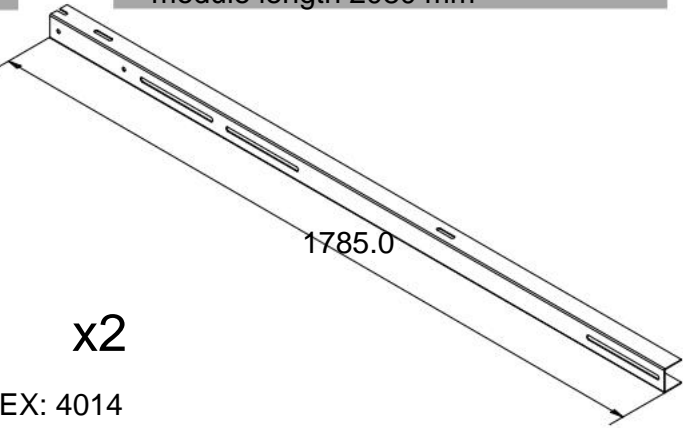
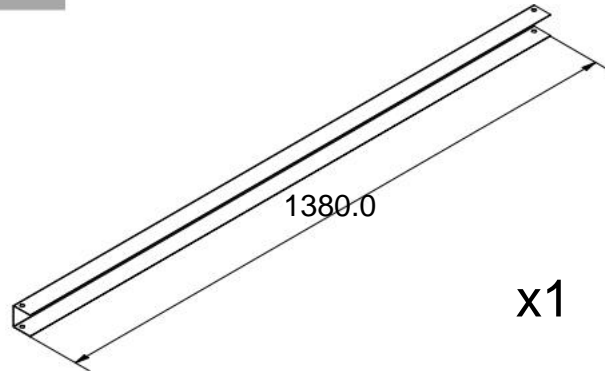


K500 MATRIX



DEMOLITION HAMMER

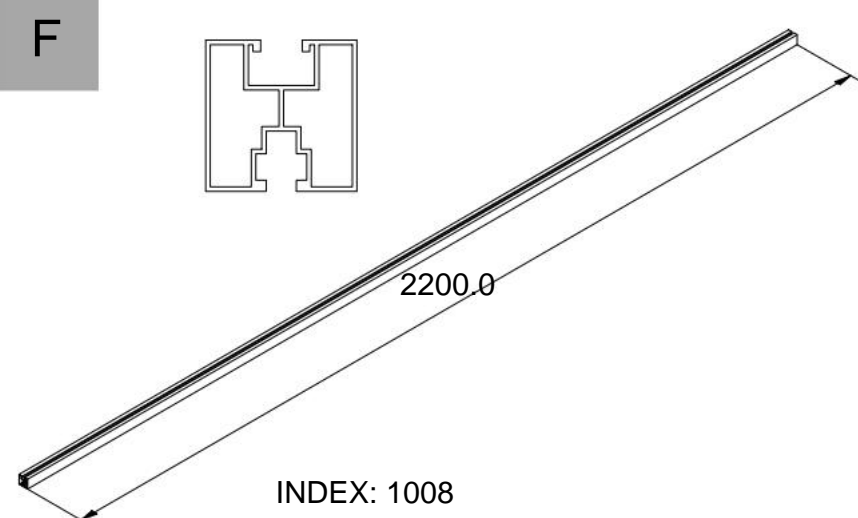


LIST OF ELEMENTS FOR ONE SUPPORT COLUMN

<p>AND</p> <p>Use for K502</p>  <p>x2</p> <p>INDEX: 4001 K502 Leg L1350</p>	<p>A1</p> <p>Use for K502 MAX, K502 XL</p>  <p>x2</p> <p>INDEX: 4010 K503 Leg L2000</p>	<p>A2</p>  <p>1759.0</p> <p>x1</p> <p>INDEX: 4003 K502_K503 Add-on rear leg L1759</p>	<p>A3</p>  <p>637.0</p> <p>x1</p> <p>INDEX: 4002 K502_K503 Add-on front leg L637</p>	
<p>A4</p>  <p>INDEX: 4018 Square</p> <p>x2 *</p>	<p>A5</p>  <p>637</p> <p>INDEX: 4019 Brace for K502 XL</p> <p>x1 *</p>	<p>B</p>  <p>500</p> <p>INDEX: 4005 K502_K503 Connector</p> <p>x1</p>	<p>B1</p> <p>Use for K502 max. module length 1650 mm</p>  <p>1 350.0</p> <p>x2</p> <p>INDEX: 4006 K502 L1350 modular beam</p>	<p>B2</p> <p>Use for K502 MAX max. module length 2020 mm</p>  <p>1635.0</p> <p>x2</p> <p>INDEX: 4009 K503 Modular beam L1635 992_1052</p>
<p>B3</p> <p>Use for K502 XL max. module length 2080 mm</p>  <p>1785.0</p> <p>x2</p> <p>INDEX: 4014 K503 Modular beam L1785 1052_1152</p>	<p>C</p>  <p>1380.0</p> <p>x1</p> <p>INDEX: 4004 K502_K503 Std</p>	<p>D</p>  <p>x18</p> <p>x22 *</p> <p>INDEX: 2201 Screw M8x20 ISO 7380</p>	<p>E</p>  <p>x18</p> <p>x22 *</p> <p>INDEX: 2611 M8 flange nut DIN 6923</p>	<p>COMMENTS</p> <p>* for TYPE K502 XL construction</p>

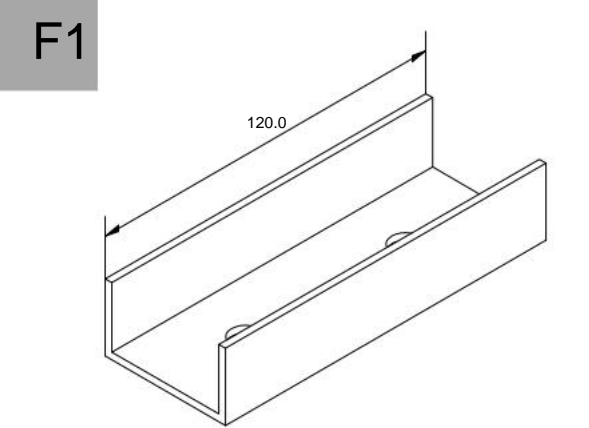
LIST OF ELEMENTS FOR ONE SUPPORT COLUMN

F



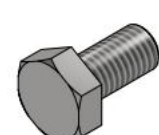
INDEX: 1008
Aluminum profile

F1




INDEX: 1024
Aluminum profile connector

G



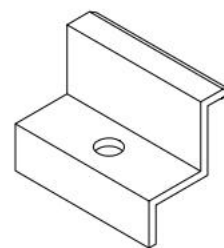
x4
INDEX: 2004
Screw M10x20 class 8.8 DIN 933
Stainless steel

H



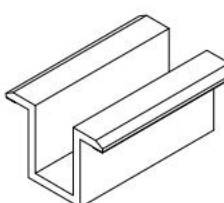
x4
INDEX: 2602
M10 flange nut
DIN 6923

I



INDEX: 1135
Final climax

J




INDEX: 1522
Center clamp h22

K



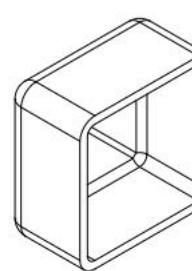
INDEX: 2102
Screw M8x30 DIN 912

L



x5
INDEX: 2604
M8 square nut
DIN 562 Stainless steel

M



INDEX: 1029
Protective cap

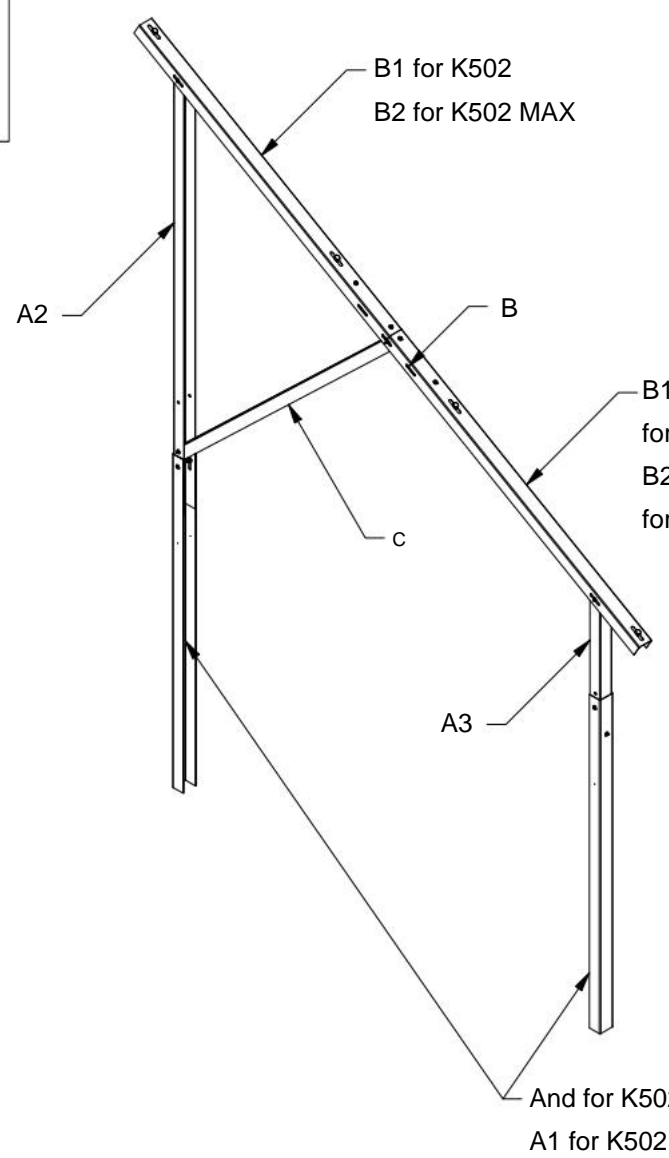


Fig.1a Support column (K502, K502 MAX) - Assembly

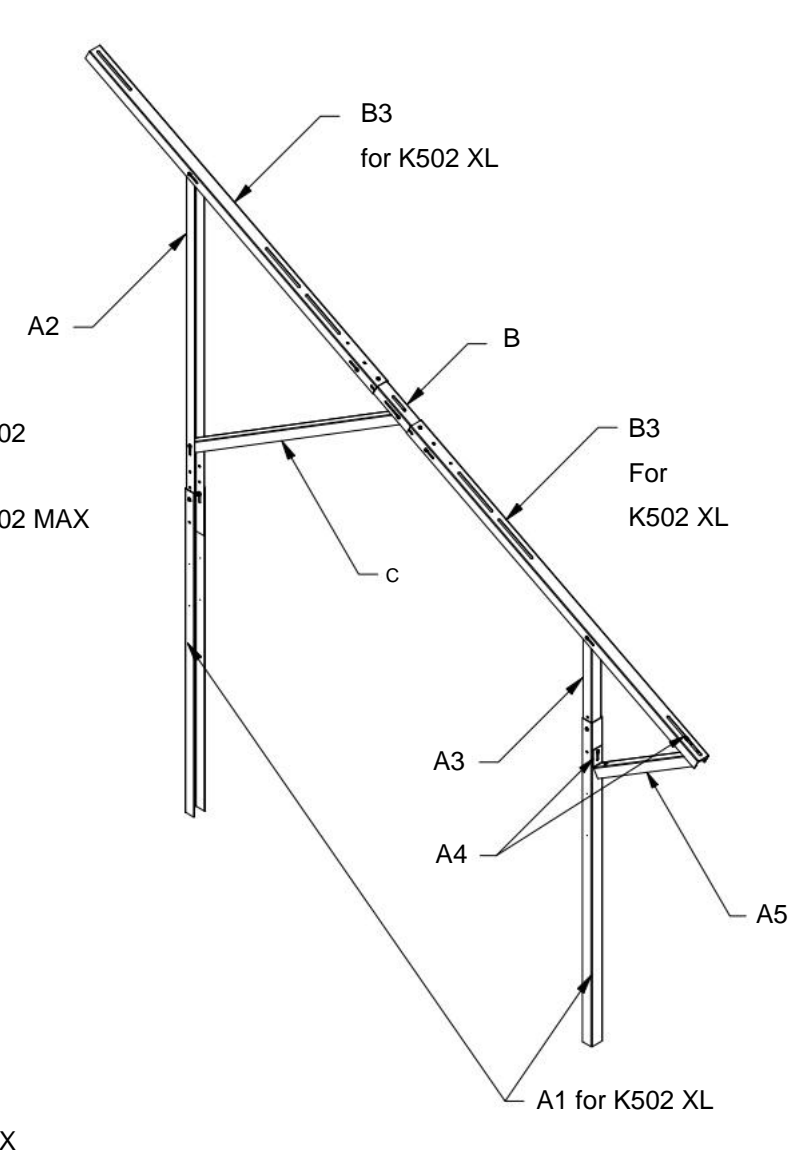
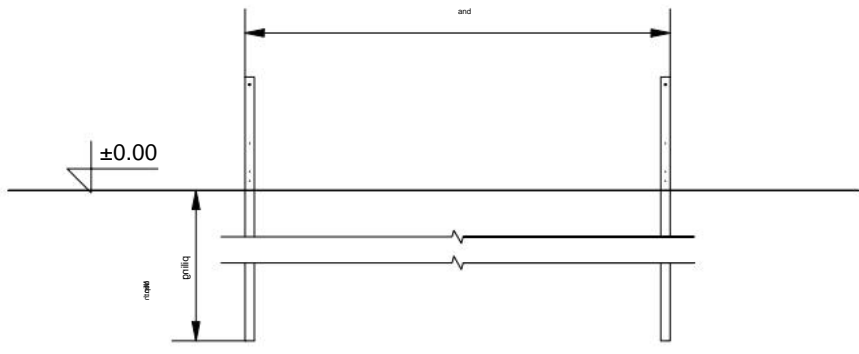


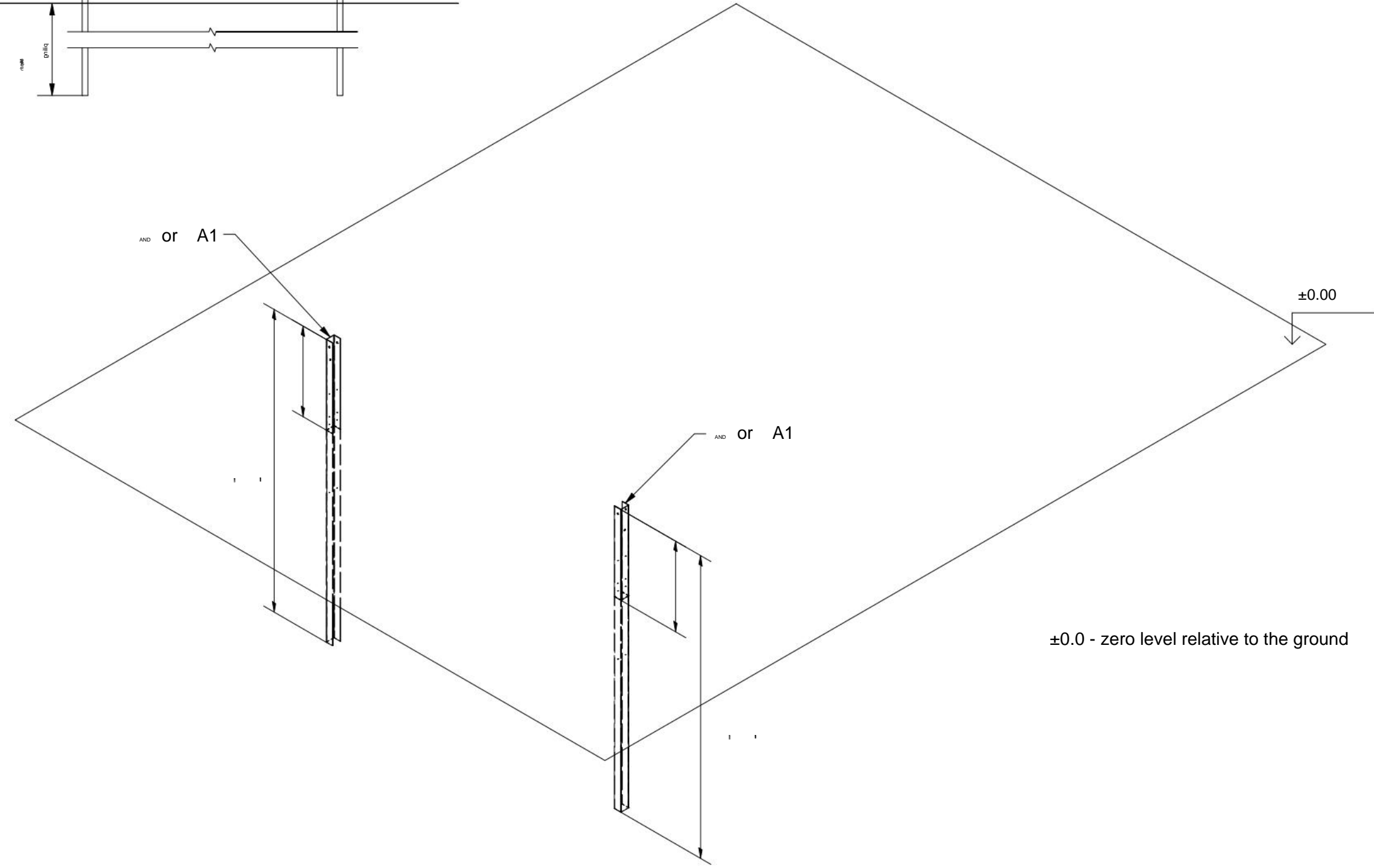
Fig.1b Support column (K502 XL) - Assembly

INSTALLATION

Spacing of adjacent legs
(side view)
Distance between legs



- 1. Minimum depth of foundation of structure legs 1000 mm;
- 2. In case of uneven terrain (Fig. 2-1), the depth of inserting the legs must depend on the terrain - all the legs of one table should be leveled while maintaining the minimum depth of the structure's legs;

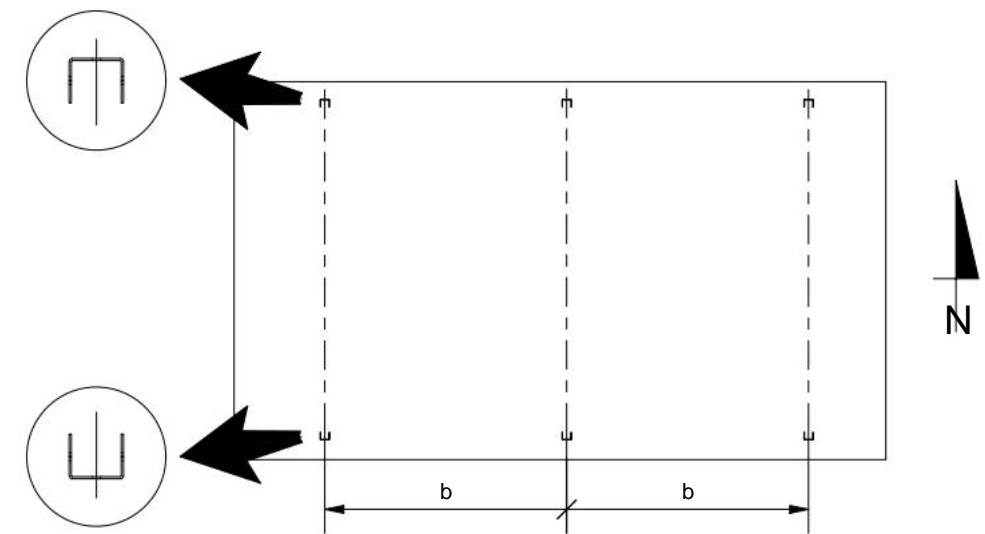
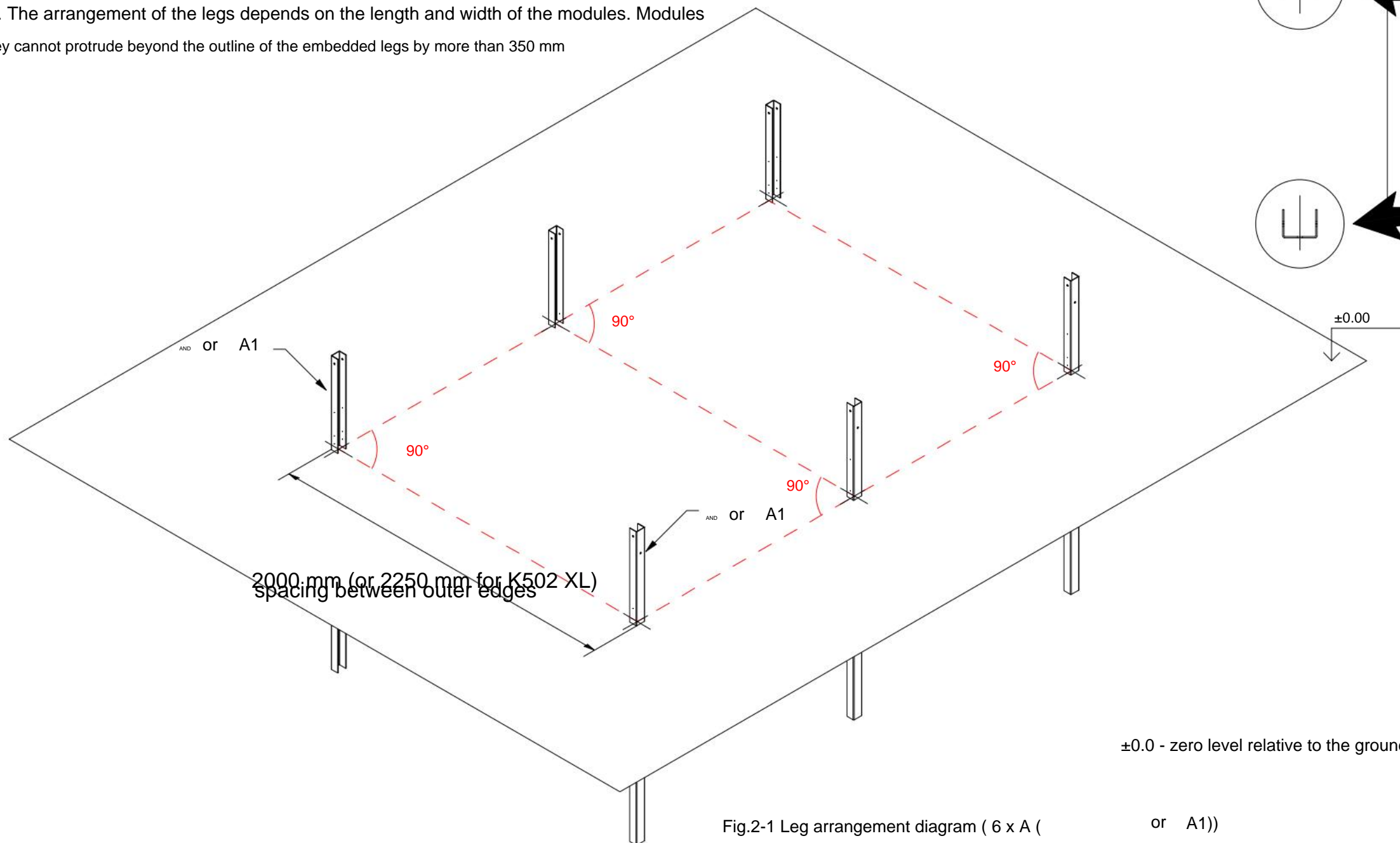
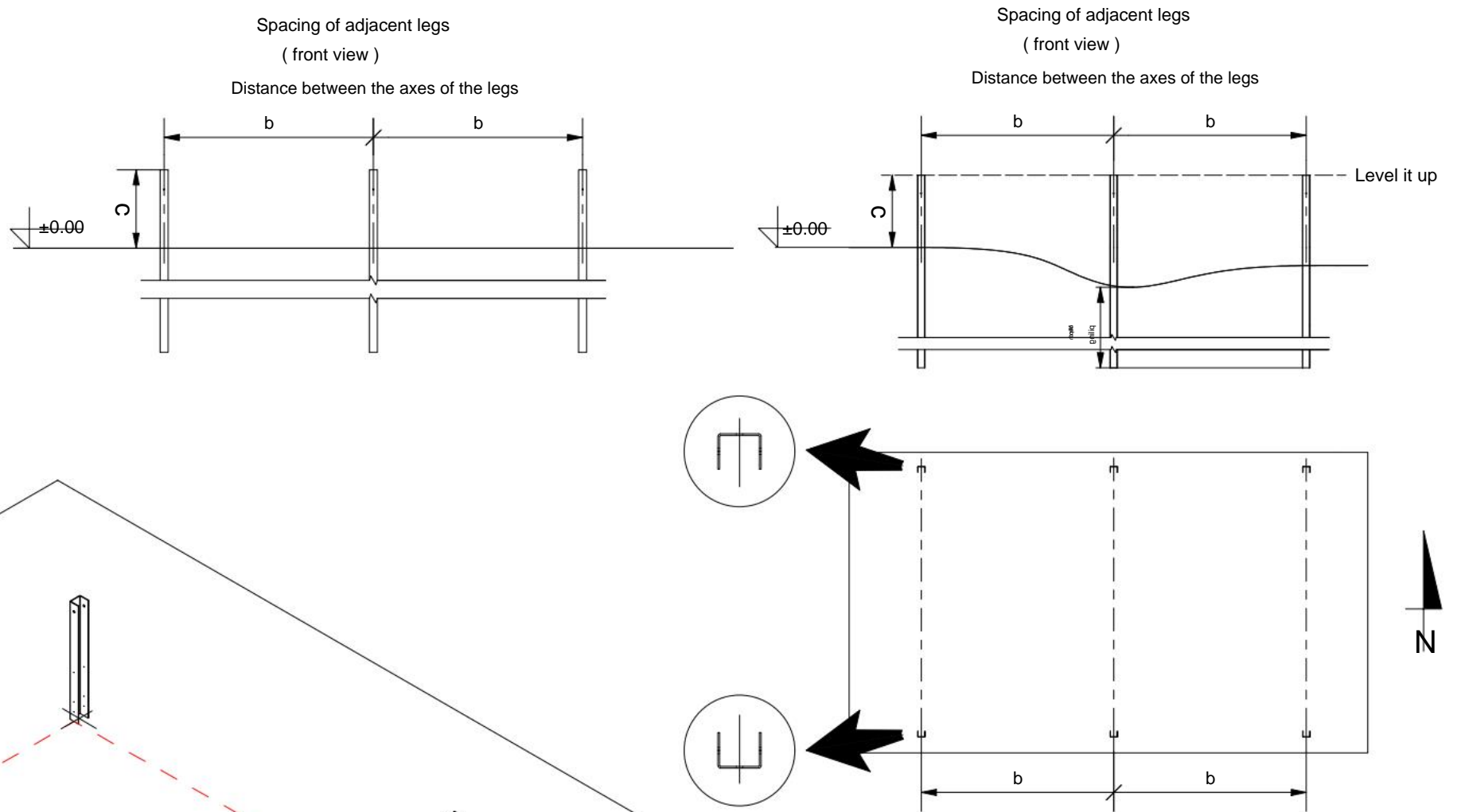


±0.0 - zero level relative to the ground

Fig.2 Inserting the front and rear supports (A or A1)

1. Check whether the level of leg kill required by the design allows for achieving the required angle of inclination of the modules and whether the lower edge of the lower module will be located above the ground level by approximately 550 mm. If the required parameters are not achieved, corrections should be made, e.g. by driving the front leg deeper if the rear leg is located in a lower area in relation to it and has been driven to the required depth. This operation should be performed before starting the series of hammering in entire rows of legs. However, this operation must be repeated each time the terrain changes. The rule should be to position the structure in a way that ensures the minimum depth of driving in the legs required by the design or model of the structure. Therefore, it is better to drive the elements deeper than too shallow. The entire process of driving in the legs should be planned so that at the end of the assembly it does not turn out that the structure does not meet the design assumptions.

2. The arrangement of the legs depends on the length and width of the modules. Modules they cannot protrude beyond the outline of the embedded legs by more than 350 mm



Parameter	Spacing, mm
and	2000; 2250 (for K502 XL)
b*	1500...1650
c	350; 550 (for K502 MAX;K502 XL)
d**	0; 210 (for K502 XL)

* The "b" parameter depends on the width of the modules
 ** Parameter "d" see Fig.3 (Sheet 9)

±0.0 - zero level relative to the ground

Fig.2-1 Leg arrangement diagram (6 x A (or A1))

COMMENTS

Tightening fasteners using wrenches or impact screwdrivers is not allowed.

Tightening torques for screws during assembly:

- middle and end clamps: 9 Nm - 13 Nm,
- M8 screws and nuts - 25 Nm,
- M10 screws and nuts - 30 Nm

A (1 : 3)

Screw connection

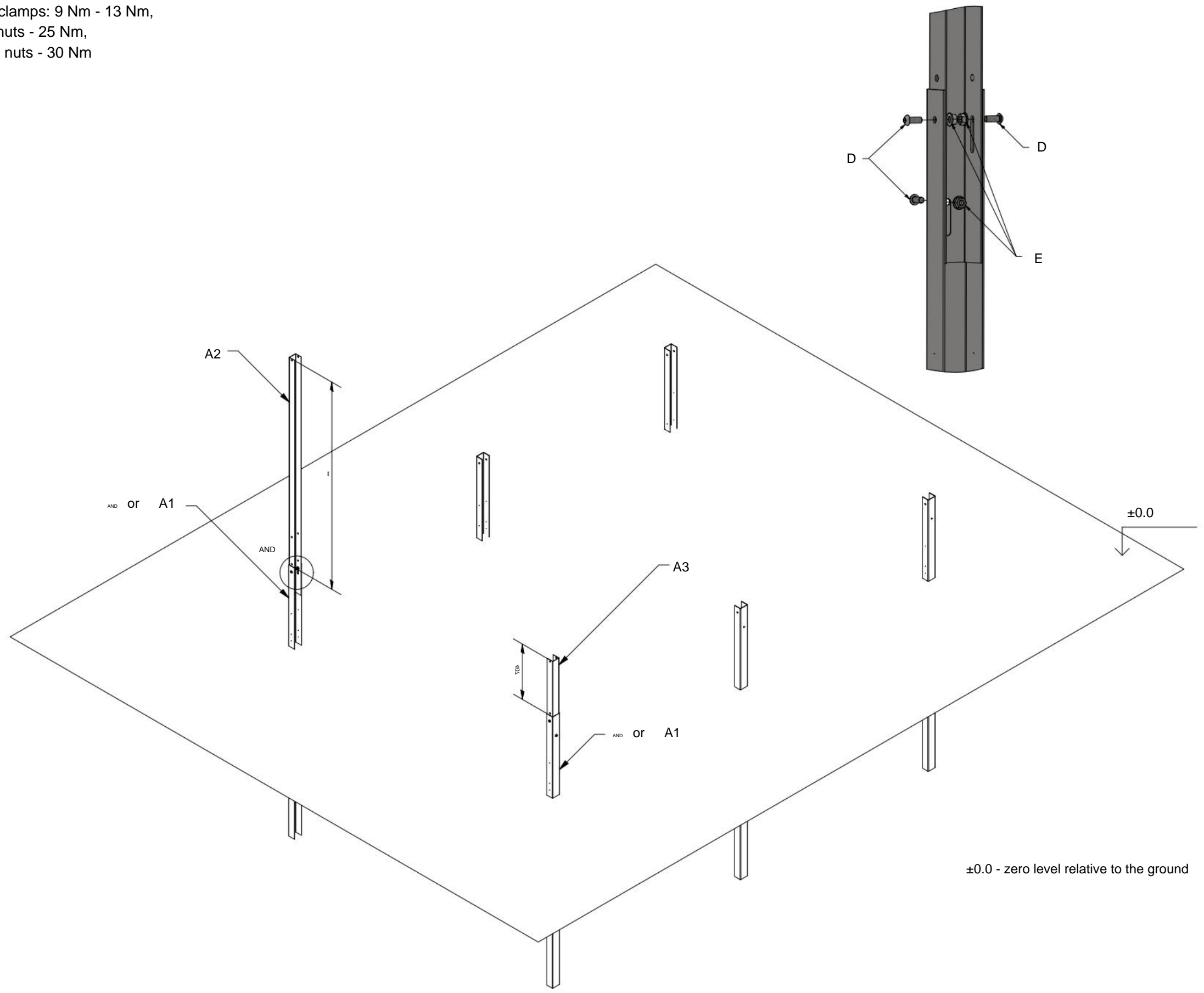
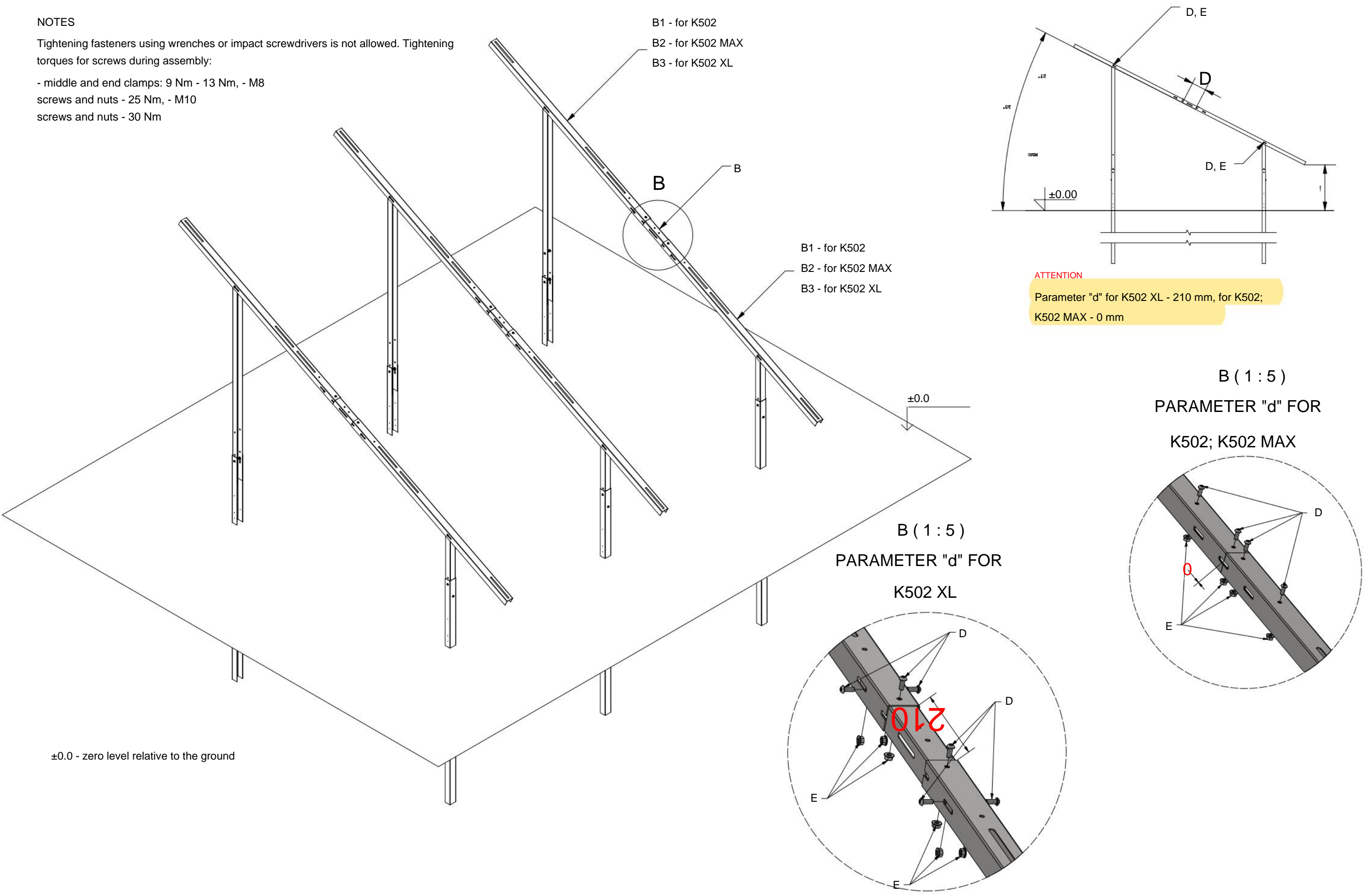


Fig.2-2 Joining the legs A (or A1) with adjustable rear leg (A2) and front leg (A3)

NOTES

Tightening fasteners using wrenches or impact screwdrivers is not allowed. Tightening torques for screws during assembly:

- middle and end clamps: 9 Nm - 13 Nm, - M8
- screws and nuts - 25 Nm, - M10
- screws and nuts - 30 Nm



ATTENTION
 Parameter "d" for K502 XL - 210 mm, for K502;
 K502 MAX - 0 mm

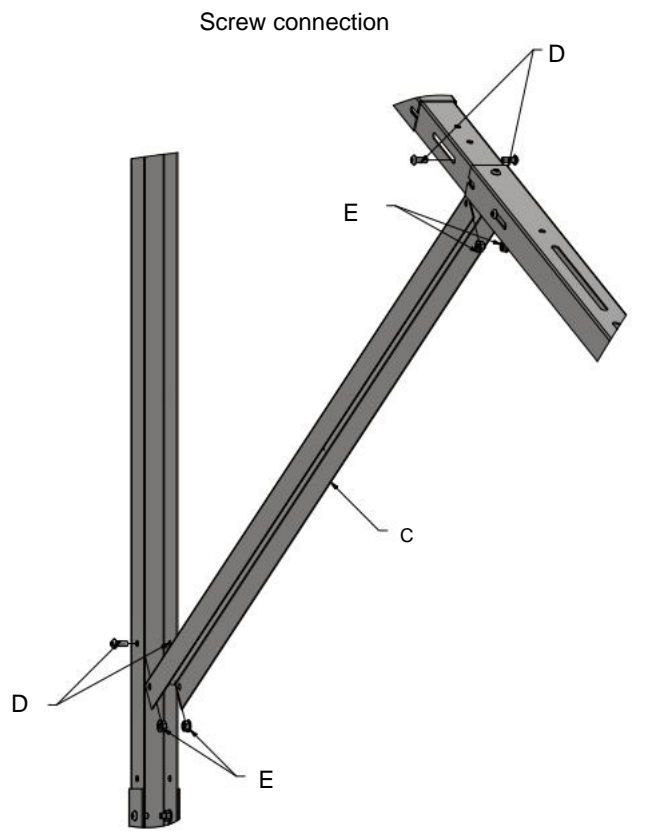
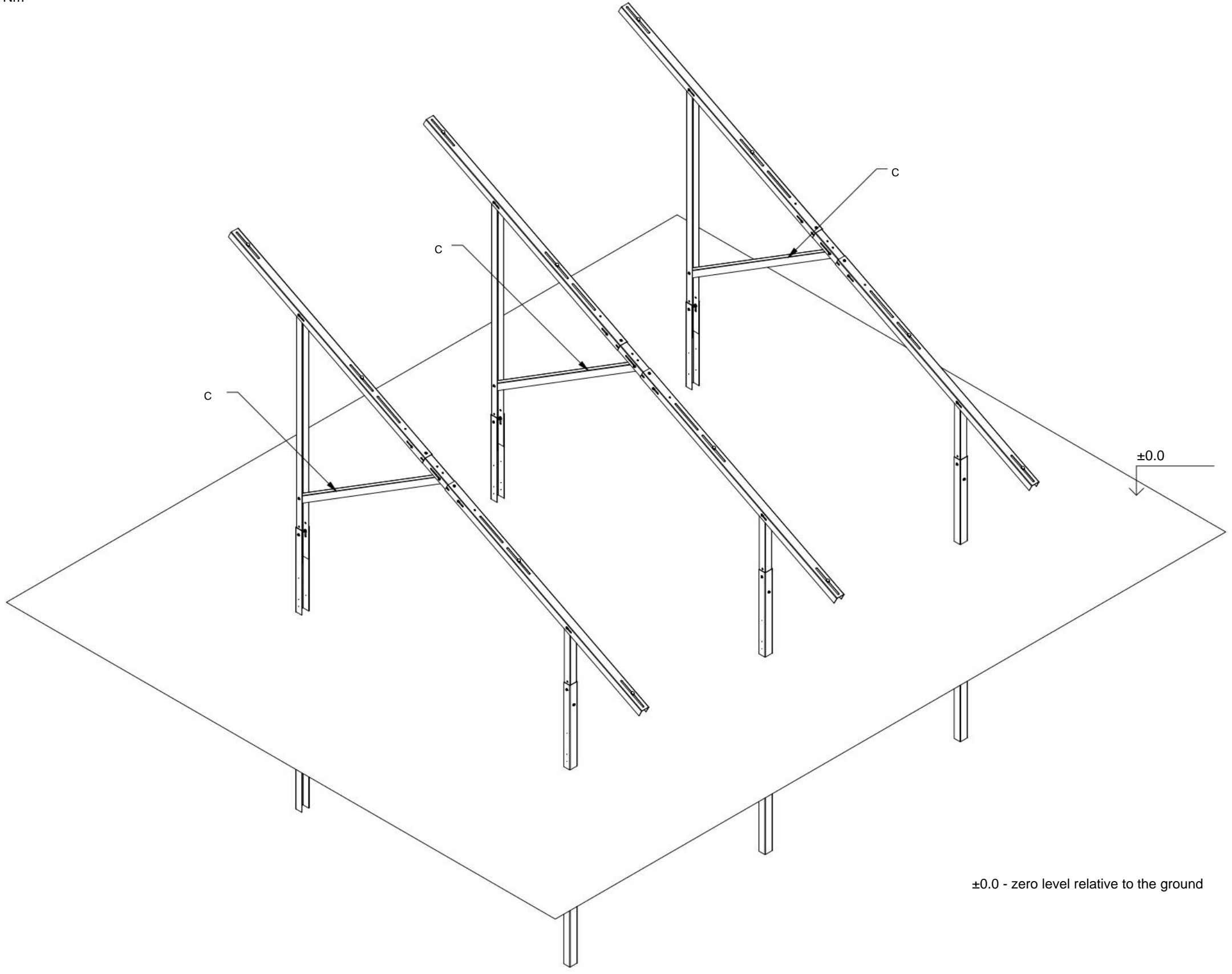
B (1 : 5)
 PARAMETER "d" FOR
 K502; K502 MAX

B (1 : 5)
 PARAMETER "d" FOR
 K502 XL

Fig.3 Connection of the rear and front supports with an inclined beam (consisting of: B1, B2 or B3, depending on the type of structure)

NOTES

Tightening fasteners using wrenches or impact screwdrivers is not allowed. Tightening torques for screws during assembly: - middle and end clamps: 9 Nm - 13 Nm, - M8 screws and nuts - 25 Nm, - M10 screws and nuts - 30 Nm



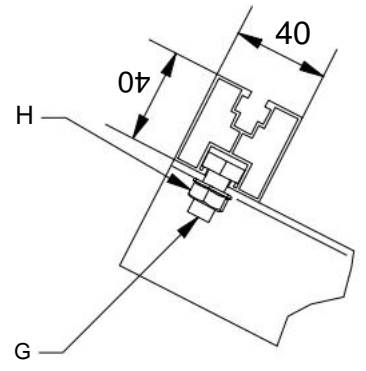
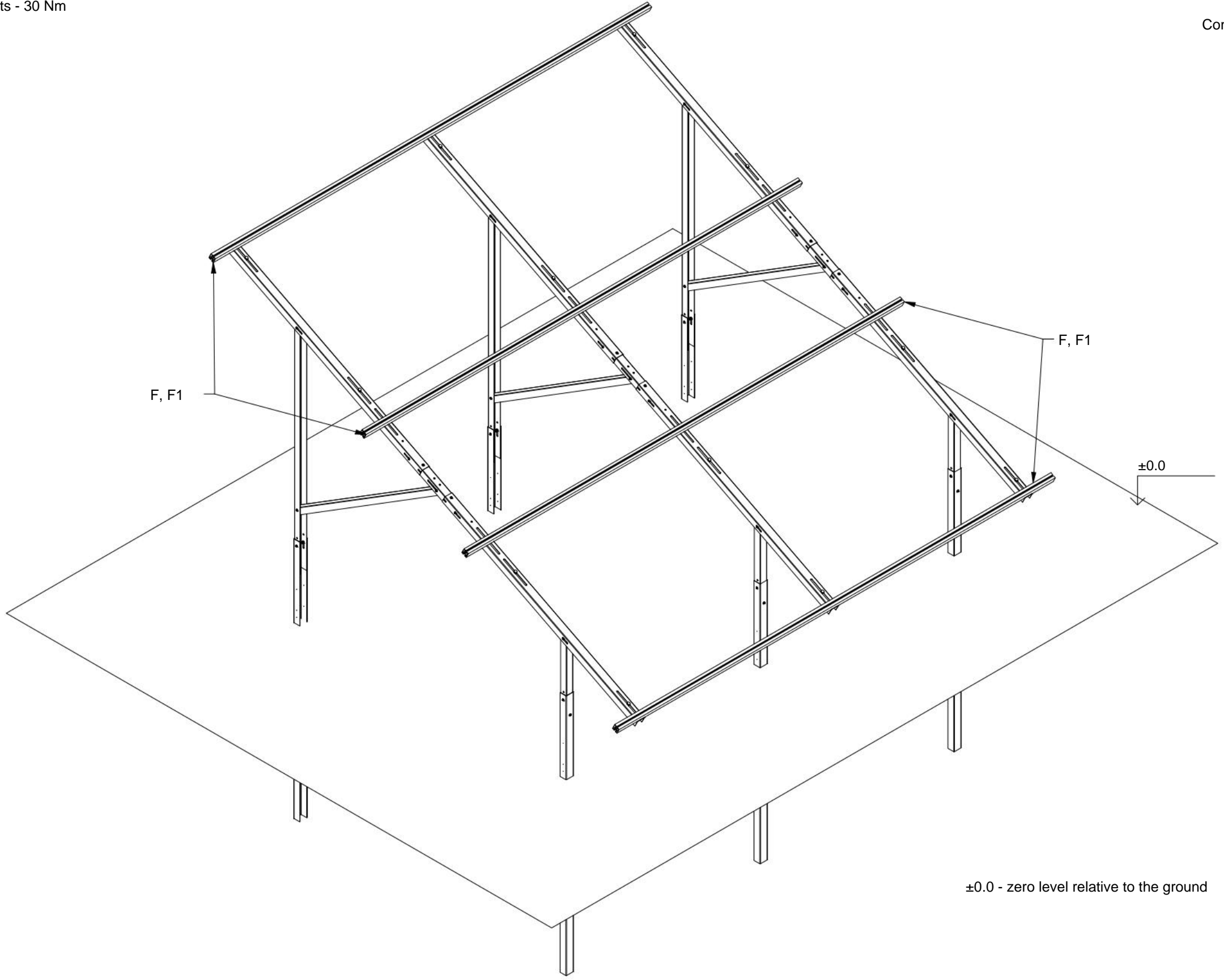
± 0.0 - zero level relative to the ground

Fig.3-1 Connection of the strut (C) with the diagonal beam

NOTES

Tightening fasteners using wrenches or impact screwdrivers is not allowed. Tightening torques for screws during assembly: - middle and end clamps: 9 Nm - 13 Nm, - M8 screws and nuts - 25 Nm, - M10 screws and nuts - 30 Nm

Connection of an aluminum rail with a steel diagonal beam



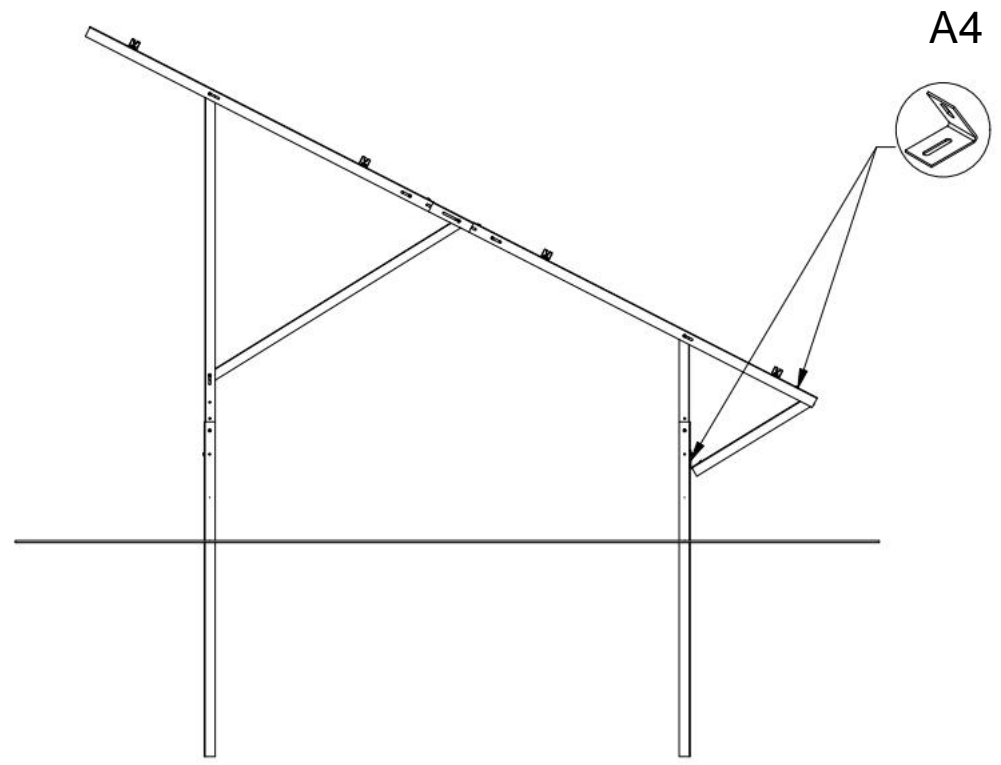
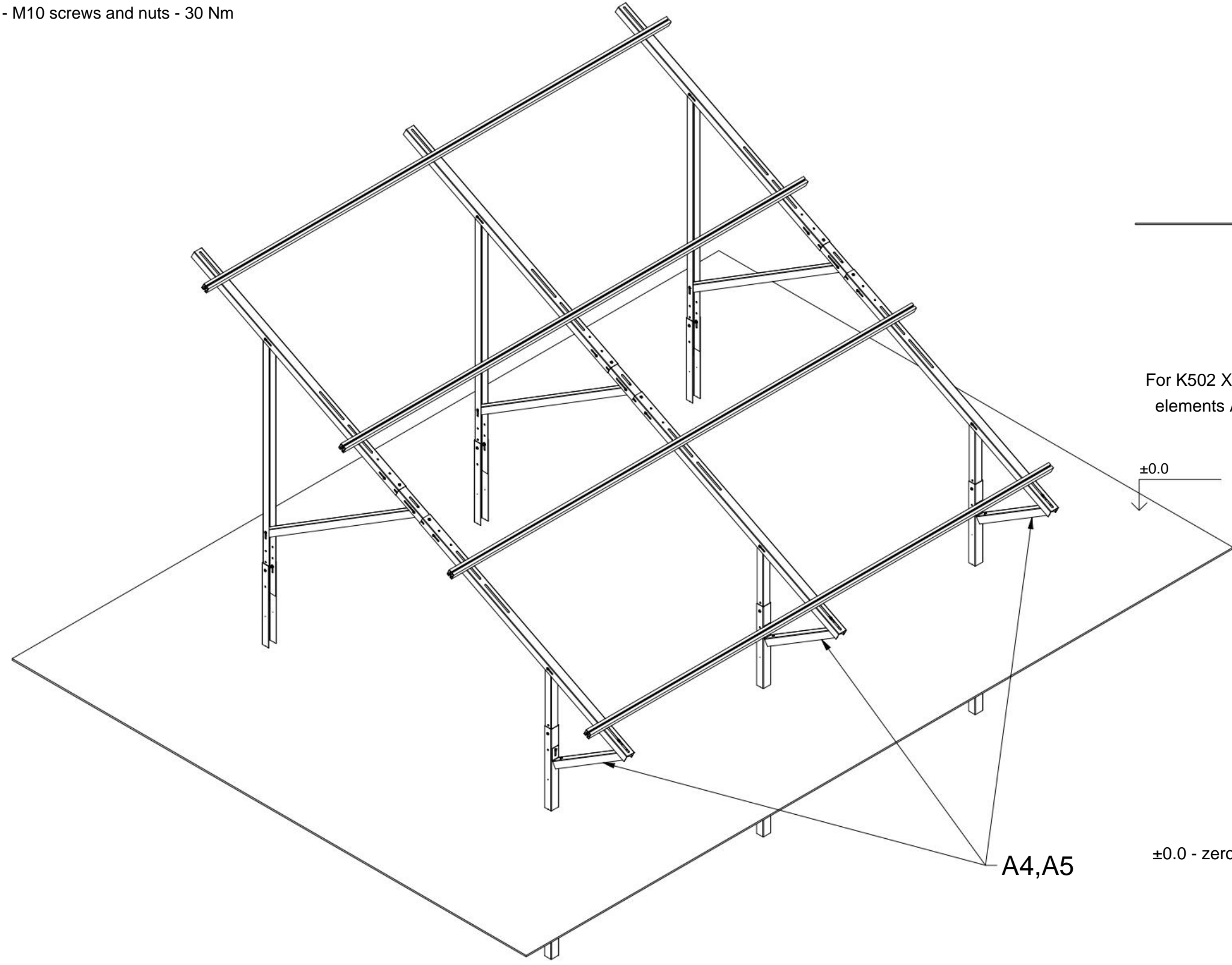
±0.0 - zero level relative to the ground

Fig.4a Installation of the transverse rail (F, F1) (connection of rails with an inclined beam) valid for the K502 and K502 MAX structures

COMMENTS

Tightening fasteners using wrenches or impact screwdrivers is not allowed.
Tightening torques for screws during assembly:

- middle and end clamps: 9 Nm - 13 Nm,
- M8 screws and nuts - 25 Nm,
- M10 screws and nuts - 30 Nm



For K502 XL construction. Connection of A1 with B3 using elements A4 (x2), A5. D+E assembly set (x3)

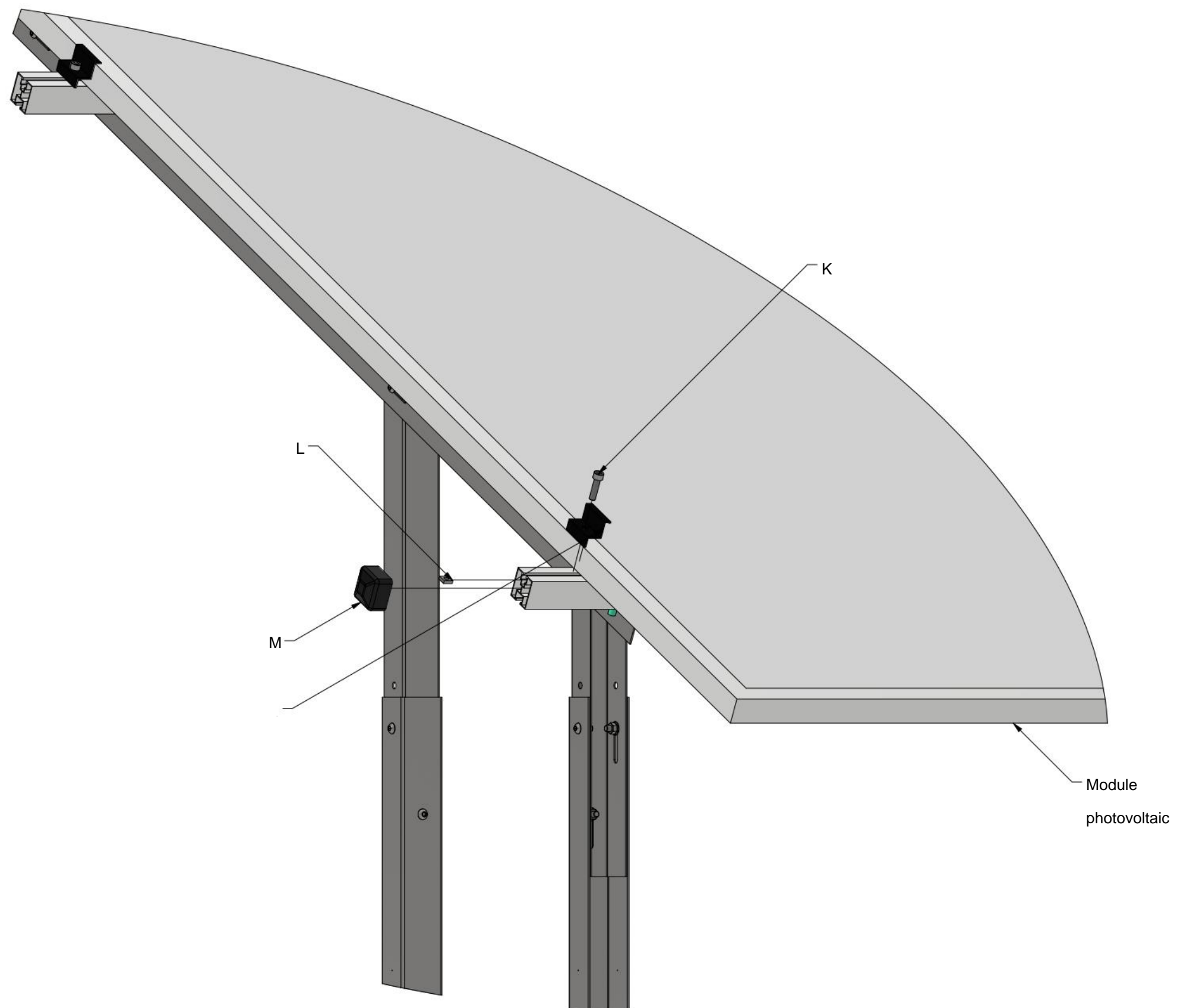
±0.0

±0.0 - zero level relative to the ground

Fig.4b Installation of the transverse rail (F, F1) (connection of rails with the diagonal beam) and supporting elements (A4, A5) valid for the K502 XL structure

NOTES Tightening fasteners using wrenches or impact screwdrivers is not allowed. Tightening torques for screws during assembly: - middle and end clamps: 9 Nm - 13 Nm, - M8 screws and nuts - 25 Nm, - M10 screws and nuts - 30 Nm

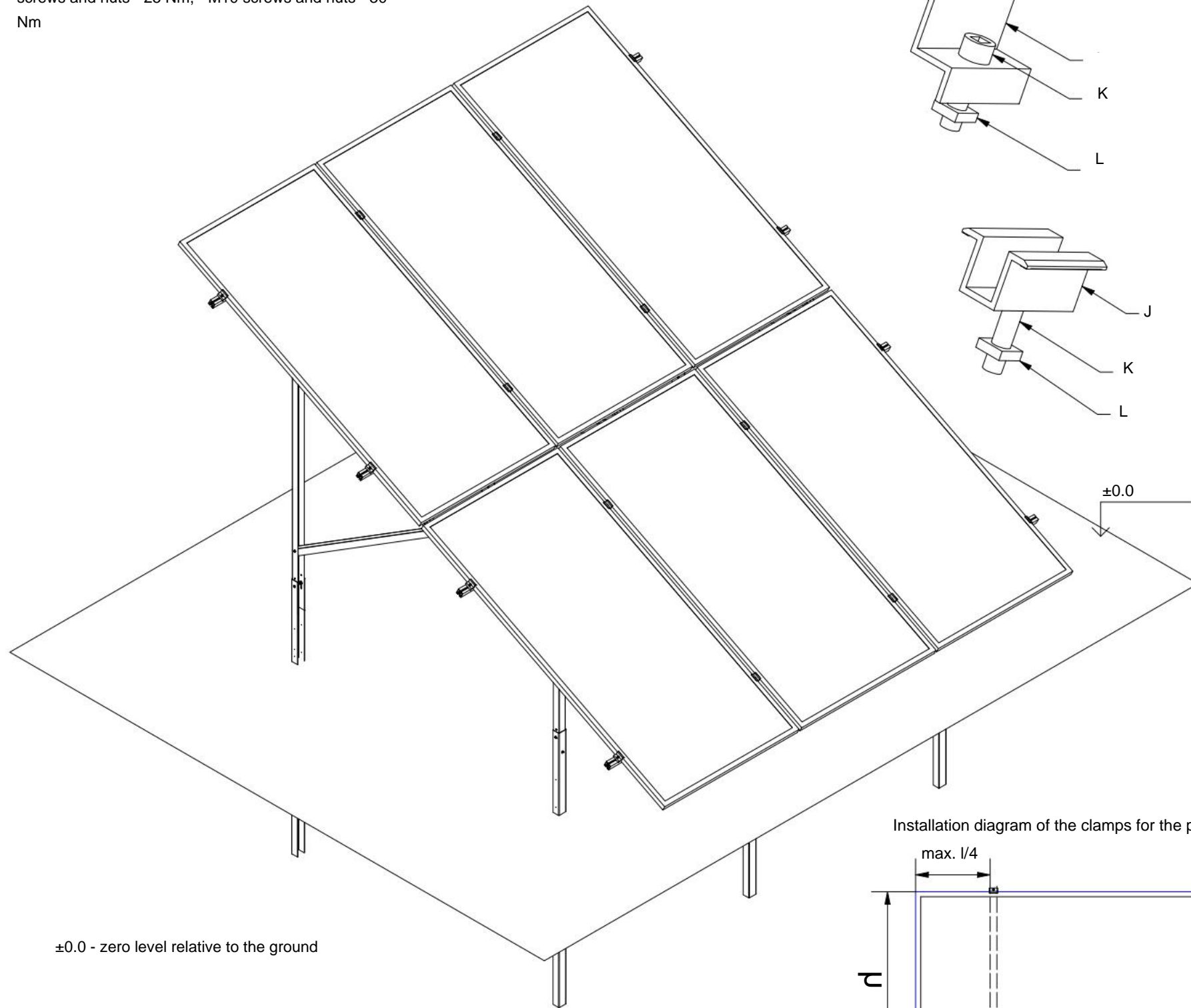
MODULE INSTALLATION



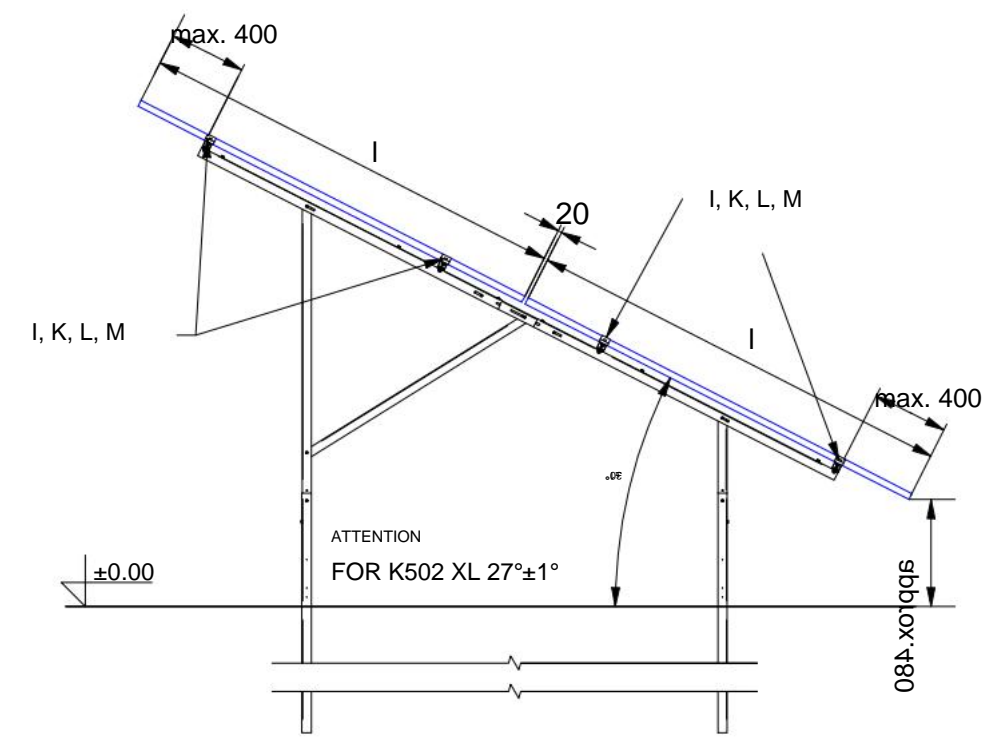
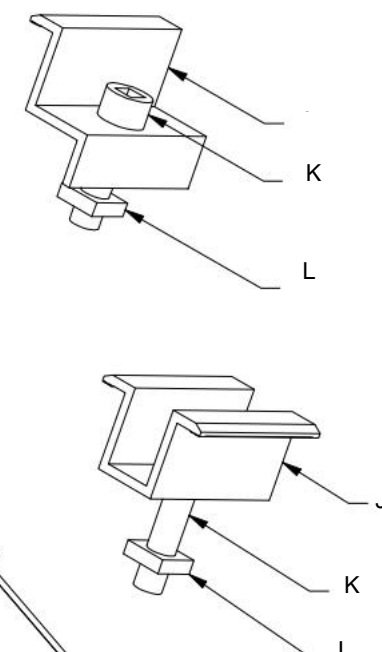
NOTES

Tightening fasteners using wrenches or impact screwdrivers is not allowed. Tightening torques for screws during assembly: - middle and end clamps: 9 Nm - 13 Nm, - M8 screws and nuts - 25 Nm, - M10 screws and nuts - 30 Nm

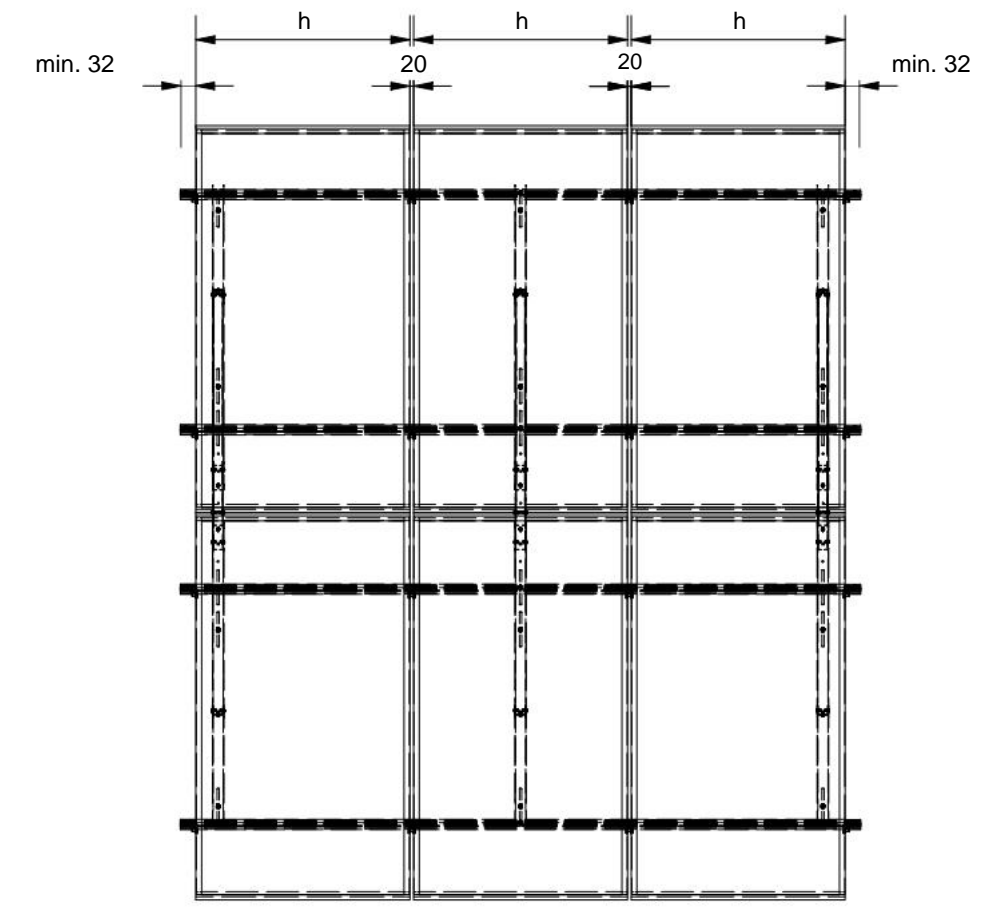
Assembly diagram of mounting clamps
Assemble the end clamps (I) and the middle clamps (J) according to the diagram



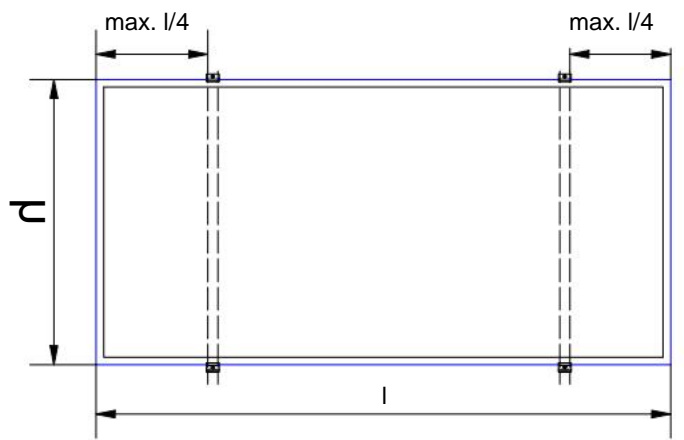
±0.0 - zero level relative to the ground



VIEW FROM THE TOP



Installation diagram of the clamps for the photovoltaic module



h - module width, mm; l - module length, mm.

Fig.5 Installation of modules using end (I) and middle (J) clamps