





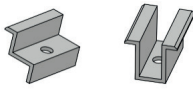
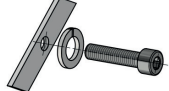
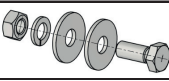


# Assembly Kit Components

No.	Component	Name	Description	2x4 layout	2x5 layout	2x6 layout	2x7 layout
1.	 Fig. 2.1		Front post	L2615 3 pcs.	L2615 3 pcs.	L2615 4 pcs.	L2615 4 pcs.
2.	 Fig. 2.2		Rear post	L3688 3 pcs.	L3688 3 pcs.	L3688 4 pcs.	L3688 4 pcs.
3.	 Fig. 2.3		Rafter	L3666 3 pcs.	L3666 3 pcs.	L3666 4 pcs.	L3666 4 pcs.
					L3295 8 pcs.		L3295 8 pcs.
						L3817 8 pcs.	
4.	 Fig. 2.4		Brace	L2410 2 pcs.		L2410 2 pcs.	
					L2670 2 pcs.		L2670 2 pcs.
5.	 Fig. 2.5		Purlin	L1000 3 pcs.	L1000 3 pcs.	L1000 4 pcs.	L1000 4 pcs.
					L395 3 pcs.	L395 3 pcs.	L395 3 pcs.
6.	 Fig. 2.6		Inverter mounting	L2400 2 pcs.	L2400 2 pcs.	L2400 2 pcs.	L2400 2 pcs.
7.	 Fig.2.7/2.8		End clamp 30/35/40	8 pcs.	8 pcs.	8 pcs.	8 pcs.
			Mid clamp	12 pcs.	16 pcs.	20 pcs.	24 pcs.
8.	 Fig. 2.9		Allen screw				
			M8 DIN7980 A2 1.4301 M12X30 DIN-934 A2-70	20 pcs.	24 pcs.	28 pcs.	32 pcs.
			M12 DIN-127B A2-70	56 pcs.	56 pcs.	68 pcs.	80 pcs.
9.	 Fig. 2.10		M12 3/13/37 DIN-9021 A2 70	112 pcs.	112 pcs.	136 pcs.	160 pcs.

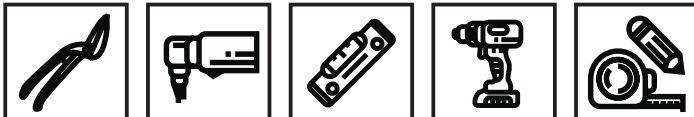
Free-standing structure intended for fastening photovoltaic panels in horizontal orientation, resting on steel supports driven/concreted into the ground.

In the case of cast-in-place concrete, a 0.5 m diameter and 1.50 m deep borehole should be used for the rear columns and a 0.4 m diameter and 1.0 m deep borehole for the front columns. The top plane should be shaped to ensure that water drains away from the column to the outside. The joint between the poles and the concrete should be protected with bituminous paint.

The skeleton structure made of steel profiles **allows for the assembly of rows** of photovoltaic panels inclined at **an angle of 25°** to the foundation.

The components are manufactured from S320GD steel with a ZM310/430 **MAGNELIS** coating. To join the components, screws of hot-dip galvanized steel (**TZn**) are used. **The structure has no welded joints, which minimizes the risk of corrosion.**

## Tools



## OHS



## I. TECHNICAL DOCUMENTATION

### THE MANUFACTURER OF THE STRUCTURE SHALL BE EXEMPTED FROM ANY OBLIGATIONS UNDER THE WARRANTY UNLESS THE PURCHASER OBSERVES THE GUIDELINES SET FORTH IN THIS DOCUMENTATION

#### 1. Purpose of the technical documentation

The aim of this technical documentation is to get the Purchaser/User acquainted with the structure, principle of operation and correct maintenance of the product, as well as to provide guidelines regarding its storage, assembly and transportation.

#### 2. Packaging, storage and transport

The products should be packed in a manner preventing the loss of any component of the particular system. After receiving the delivery, please always check the product for its quality and possible lack of components in the respective kit(s).

Complete assembly systems are delivered to the recipient with protection against damage. The completeness of the delivery as well as appropriate condition of the delivered profiles shall be confirmed in writing by the recipient on the Stock Issue Confirmation or on any other equivalent document, on which comments regarding the product, provided there are any, should be written down.

#### 3. Assembly

##### The assembly is to be conducted in accordance with the instructions

Recommended tightening torques during the assembly:

- **Mid and end clamps: 10-11 Nm,**

(Caution: During the tightening of the screws to the clamps, the rhombic Magnelis nut may become deformed at the torque of 11 Nm. This deformation is acceptable.)

- **M12 screws and nuts – 77-81 Nm,**

(Caution: Tightening fasteners with impact drivers and/or wrenches is prohibited.)

**It is prohibited to interfere with the structure by drilling holes, grinding its edges, cutting it or carrying out other activities that may damage its protective layer, unless such an activity is admissible as per the instruction or BMD consents to such an activity being carried out.**

The upper parts of the posts may become deformed while driven into the ground. In that case, the occurring deformations should be secured with zinc paint along the scratch. Remove any soiling from the components that has accumulated during the assembly immediately before proceeding to the next assembly phase.

#### 4. Clamp fastening

**It is prohibited to use impact drivers with no tightening torque control. With power tools equipped with a mechanical clutch, the correct tightening torque may, as a rule, not be guaranteed, as it depends on the state of charge of the battery.** In this situation, control the tightening force with a manual torque wrench on an on-going basis.

**BMD SHALL NOT BE HELD LIABLE FOR DAMAGES AND DEFECTS CAUSED BY INCORRECT ASSEMBLY. ANY MODIFICATIONS MADE BY THE PURCHASER/USER SHALL RESULT IN THE WARRANTY BEING INVALIDATED.**

#### 5. Product use

##### a) Maintenance

In order to ensure correct operation and a long useful time of the system, please check the fasteners twice within the first year of use. In the subsequent years of use, checks should be performed on a regular yearly basis. Check whether the fastening screws and ordinary screws are tightened and in the correct position. It is strictly prohibited to step on the structure and to put load on it in any other manner.

Should you notice any of the fastening components loosened, secure the area around the structure against unauthorised entry and, in compliance with OSH regulations and provisions of the instructions, perform a repair.

## b) Cleaning

In order to maintain the attractive appearance of the fastening structure, please clean it regularly. Clean components of the frame provide for a nicer look, longer durability and better functioning of the structure.

### Caution!

**Do not use alkaline cleaning agents! The glass on the panels is sensitive to alkaline substances.**

System components are best cleaned with water and sponge. However, neutral detergents may also be used.

## 6. OHS

During the assembly, use and repair of the products covered by this technical documentation, please comply with generally applicable occupational health and safety regulations. Therefore, you should i. a.:

- Be equipped with personal protective equipment such as helmet and other types of protective gear;
- Use ladders, scaffoldings and other lift equipment, whose usability must be duly certified;
- Work with power tools with valid inspection documents. The same rule applies to extension cords and branch joints;
- Secure the area in which there is work in progress against unauthorised entry;
- Have a valid medical certificate for work at heights, if necessary.

## II. TRANSPORT AND UNLOADING, MAGNELIS COATING

During the assembly, use and repair of the products covered by this technical documentation, please comply with generally applicable occupational health and safety regulations.

*General rules of handling and working with Magnelis-coated profiles*

1. For cutting the profiles, use electric sheet metal nibblers, shears, mitre saws etc. It is prohibited to cut the profiles with an angle grinder. This tool causes the sheets to warm up and results in the Magnelis coating being damaged (burned out). Chips resulting from the cutting may cause corrosion of the processed profile and of other profiles in its immediate proximity.
2. If a grinder is used, no claims will be accepted.
3. After each cutting of and drilling of holes into Magnelis-coated profiles, any swarf should be removed otherwise it may cause corrosion when in contact with the Magnelis-coated profile. Moreover, it poses a risk to the installer of getting hurt.
4. Any soiling occurring during the assembly works should be removed on an on-going basis.
5. Use protective gloves.
6. In the event of the Magnelis coating being damaged, mask the defects with zinc paint.
7. When working with Magnelis-coated profiles, comply with OHS regulations at all times.

### Transport and unloading

1. The profiles should be transported in their original steel packaging.
2. The vehicle transporting Magnelis-coated profiles should be adapted to this kind of transportation. The loading, unloading and proper fastening of the goods for the time of transport should be made easy for the person carrying out these activities.
3. Before unloading, check if the documentation is compatible with the goods delivered. Inspect the delivered goods carefully, and in case of visible defects or incompleteness, describe them in detail in the protocol or consignment note and have the carrier sign these for confirmation.

LAYOUTS OF STEEL SUPPORTS DRIVEN/CONCRETED INTO THE GROUND (SP / ST)

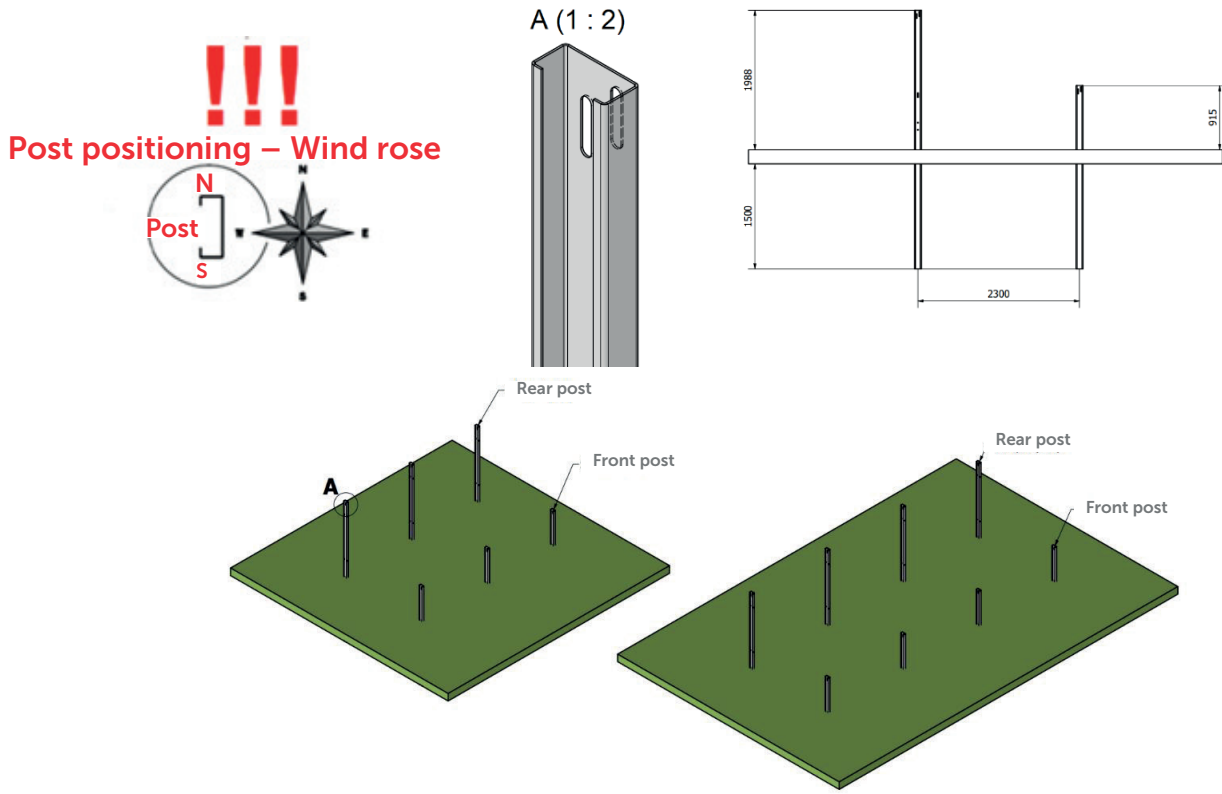
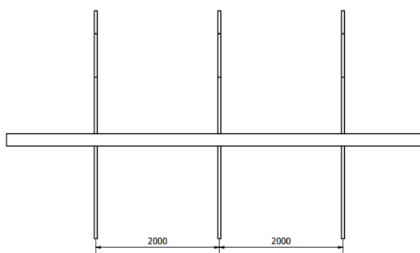
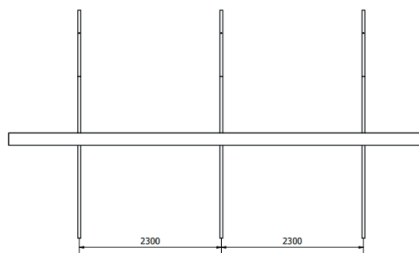


Fig. 1

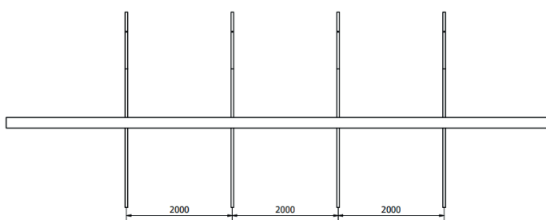
2x4 Layout



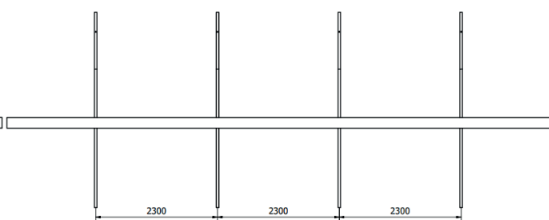
2x5 Layout



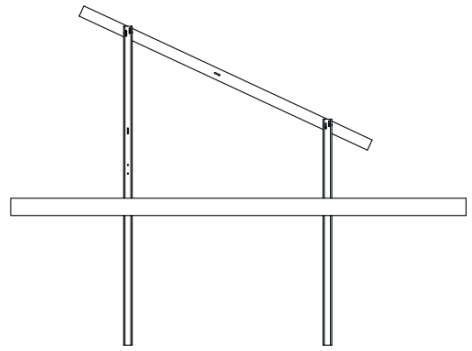
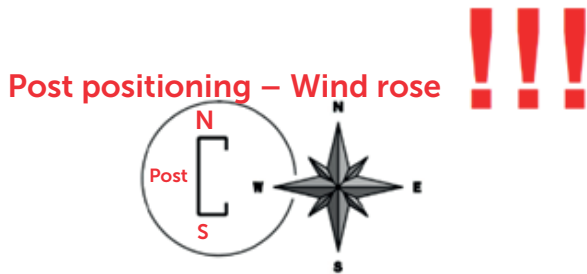
2x6 Layout



2x7 Layout



## RAFTER ASSEMBLY (R)



2x4/2x5 Layout

2x6/2x7 Layout

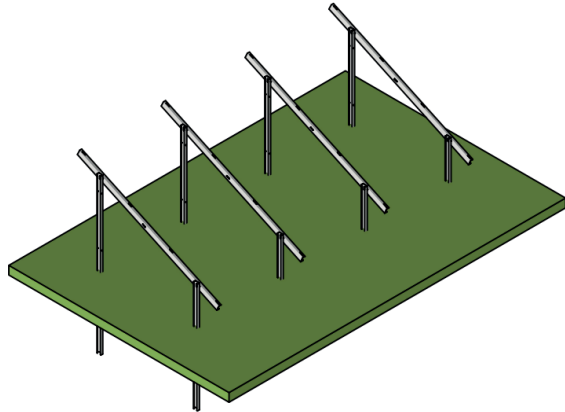
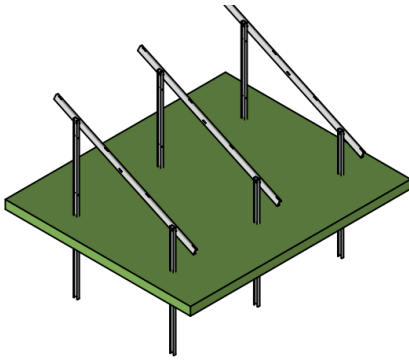


Fig. 3

Rafter-post connection points (Connecting components: Table, no. 11)

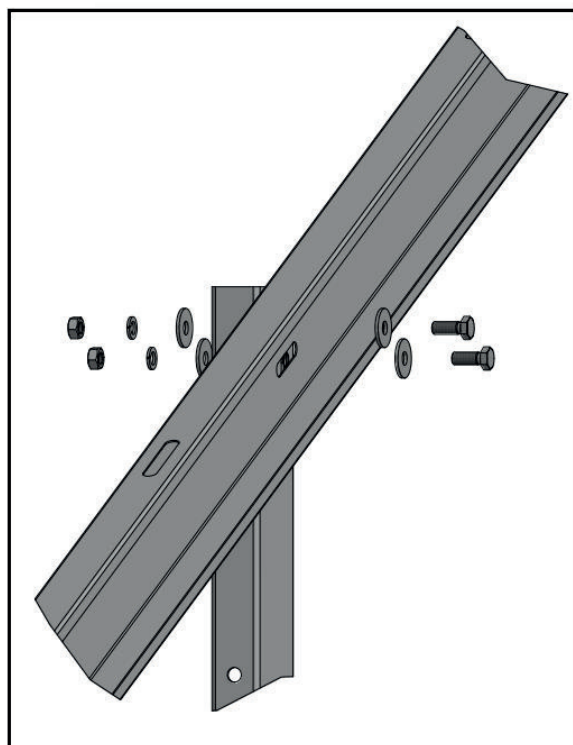


Fig. 4

# BRACKET AND SPLICE ASSEMBLY (B+S)

CONNECT ALL COMPONENTS WITH COMPONENTS LISTED IN TABELI 1, NO. 11.

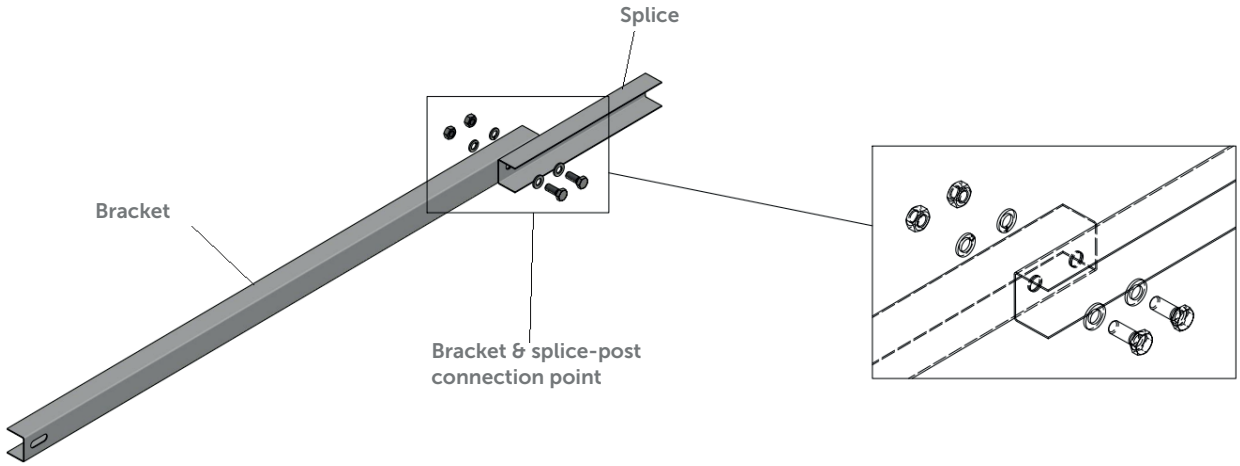


Fig. 5

Bracket & splice-post connection point

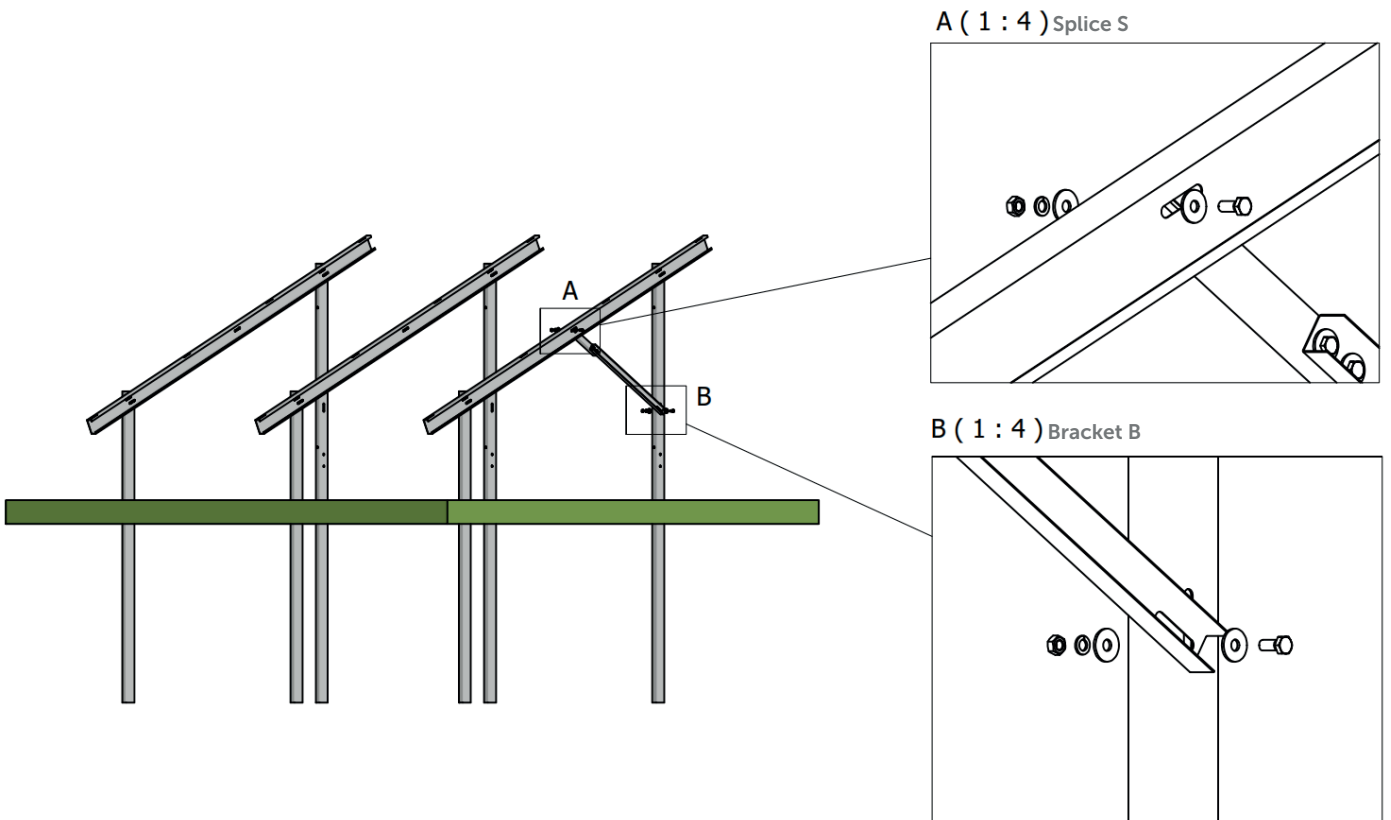


Fig. 6

## PURLIN ASSEMBLY (P)



2X4 LAYOUT A (L2683) + B (L2683) 180 degree-turn of the purlin

2X5 LAYOUT A (L3295) + B (L3295) 180 degree-turn of the purlin

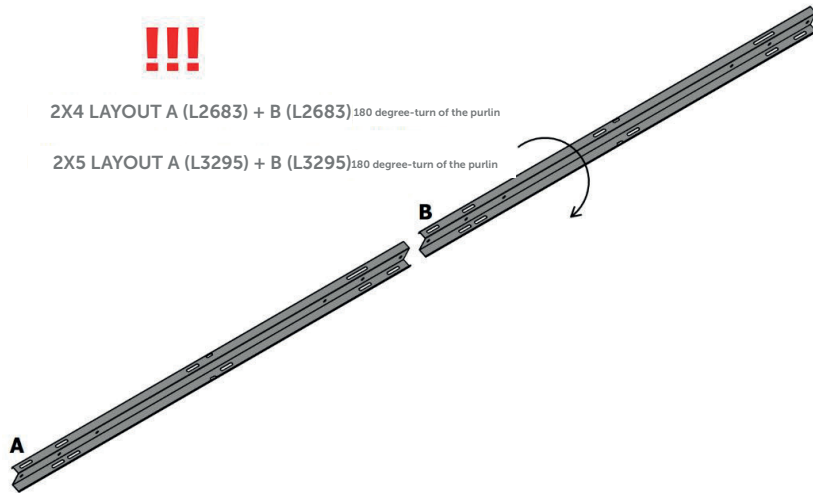


Fig. 7



2X6 LAYOUT A (L3817) + B (L3817) 180 degree-turn of the purlin

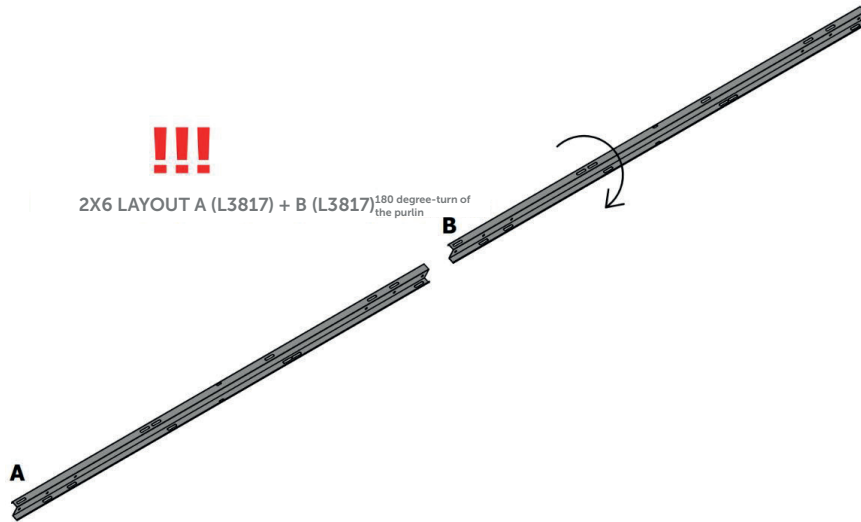


Fig. 8



2X6 LAYOUT A (L3295) + B (L3295) + C (L2972)  
180 degree-turn of the purlin



Fig. 9

A > C > B - With 2x7 layout, assembly the purlins in the following sequence: A > C > B

# PURLIN CONNECTION POINT

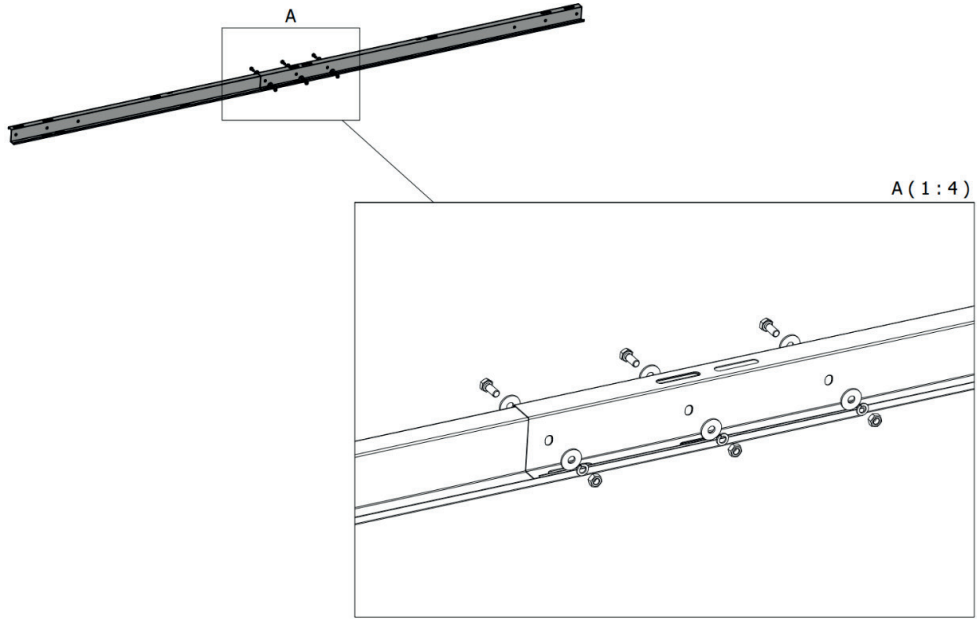


Fig. 10

# PURLIN ASSEMBLY ON RAFTERS

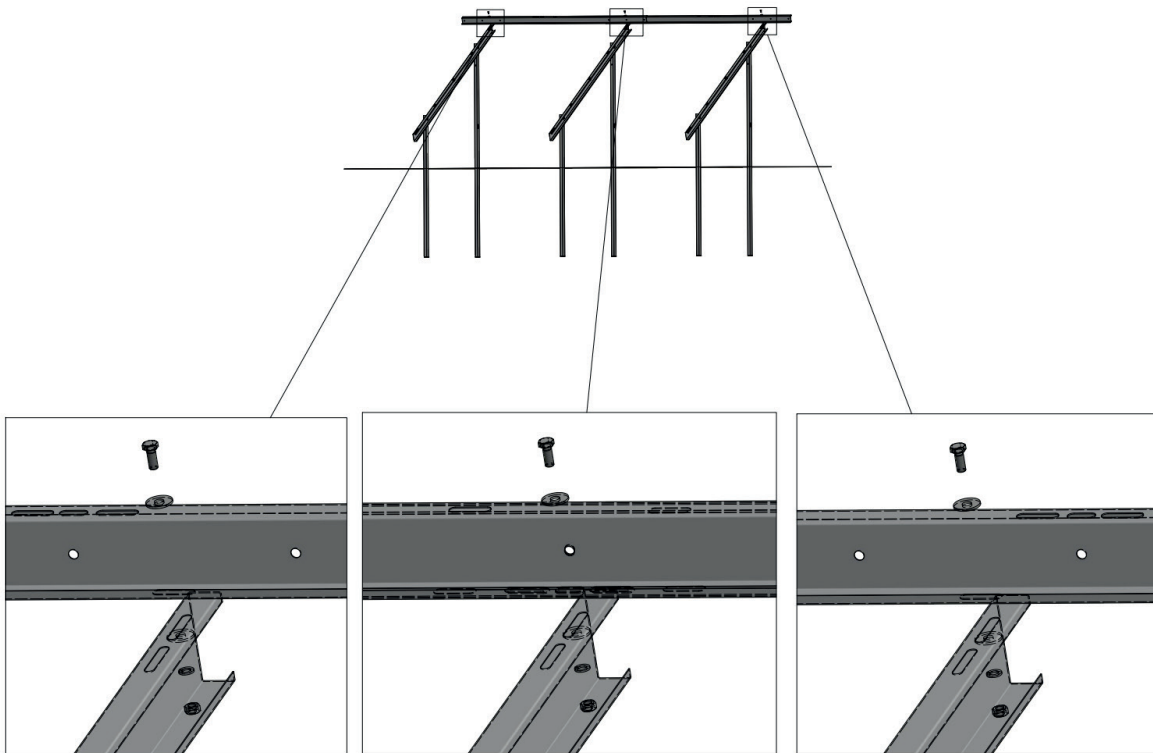


Fig. 11



# PHOTOVOLTAIC PANEL ASSEMBLY

2x4 LAYOUT SHOWN AS EXAMPLE

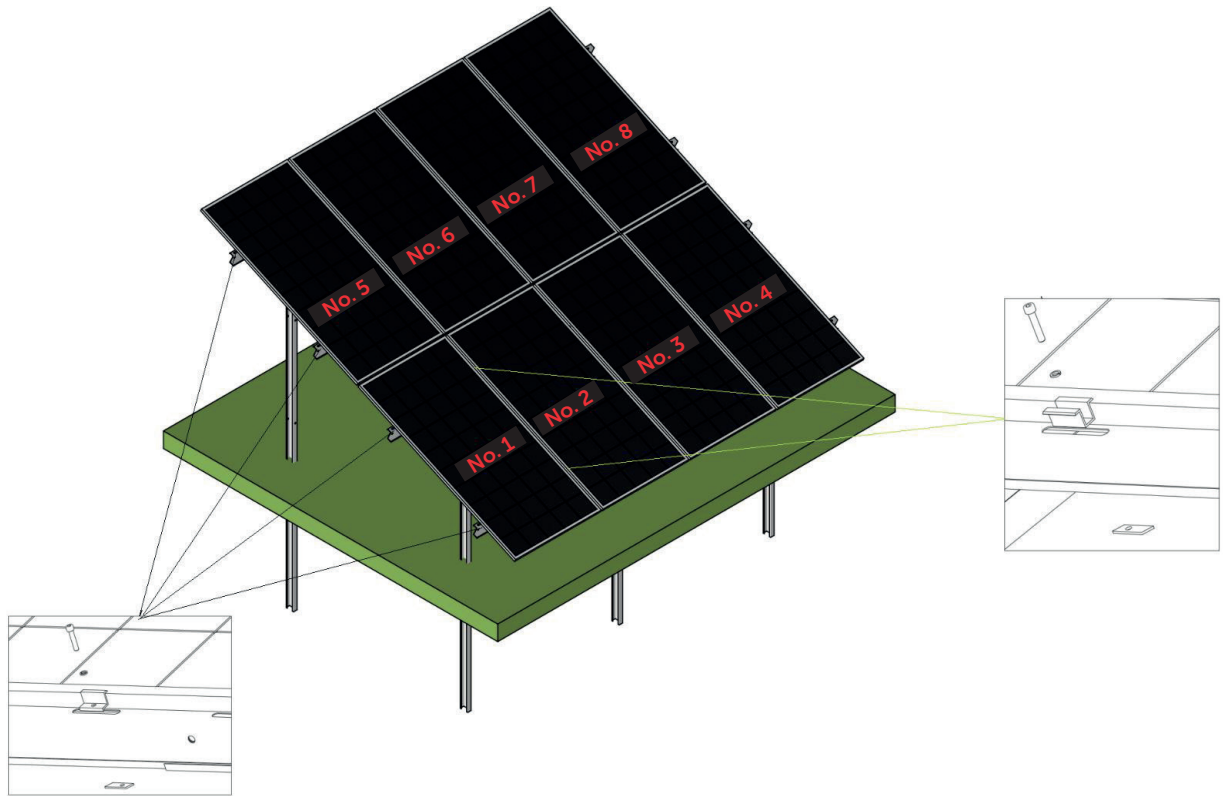


Fig. 12

A – END CLAMP CONNECTIONS

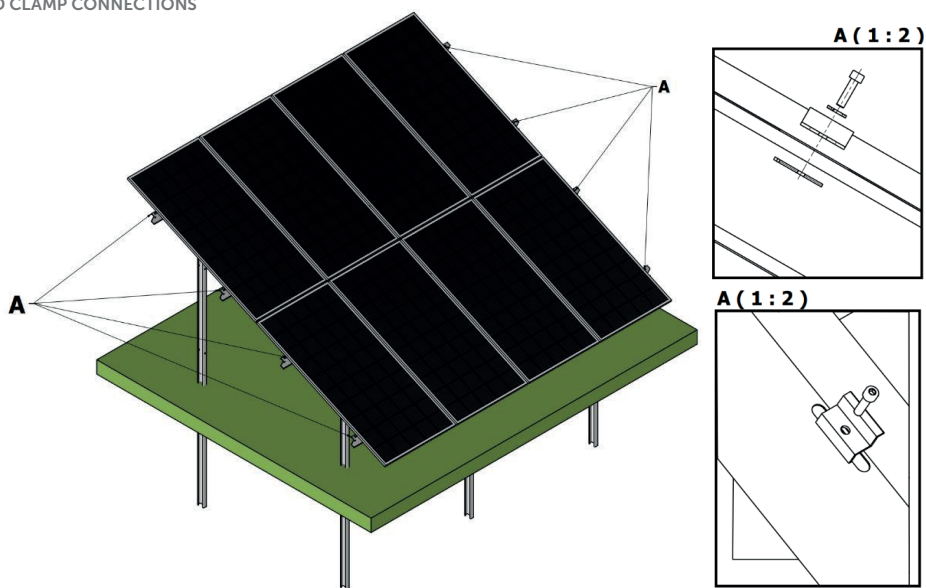


Fig. 13

B – MID CLAMP CONNECTIONS

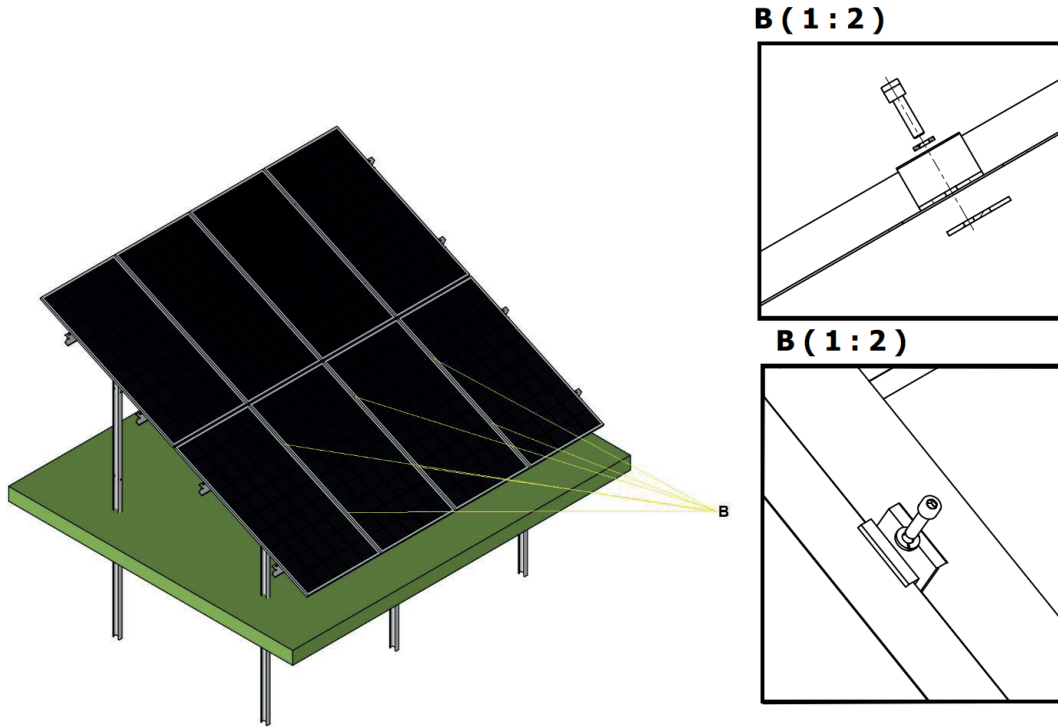


Fig. 14

BRACE ASSEMBLY

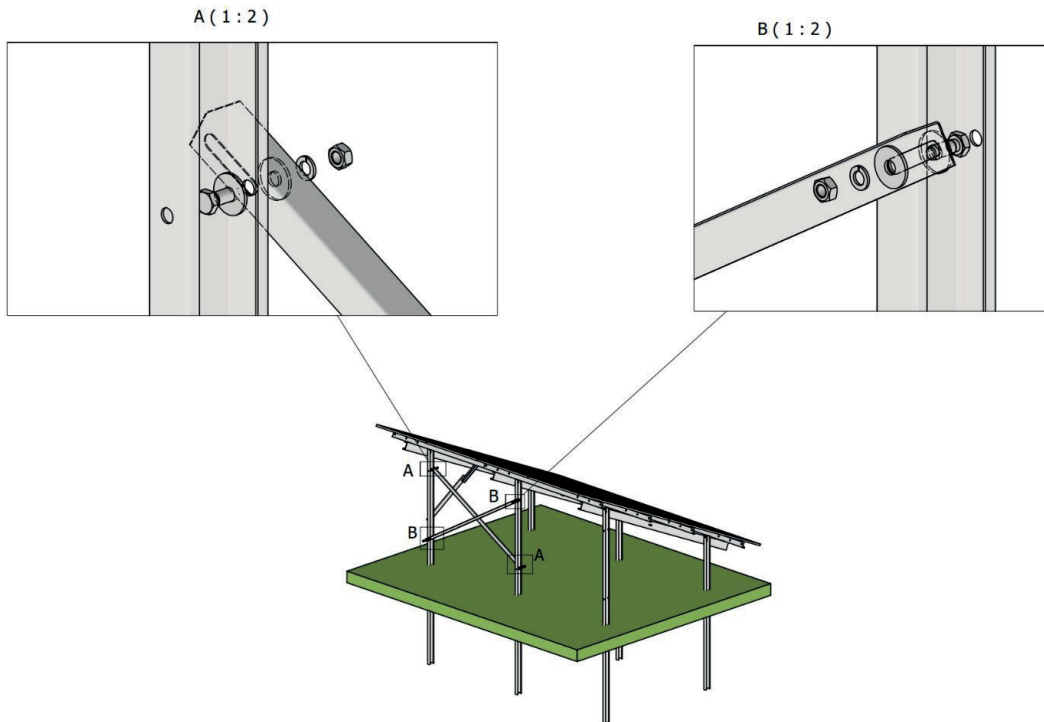


Fig. 15

INVERTER MOUNTING

CROSS-SECTION A (1 : 2)

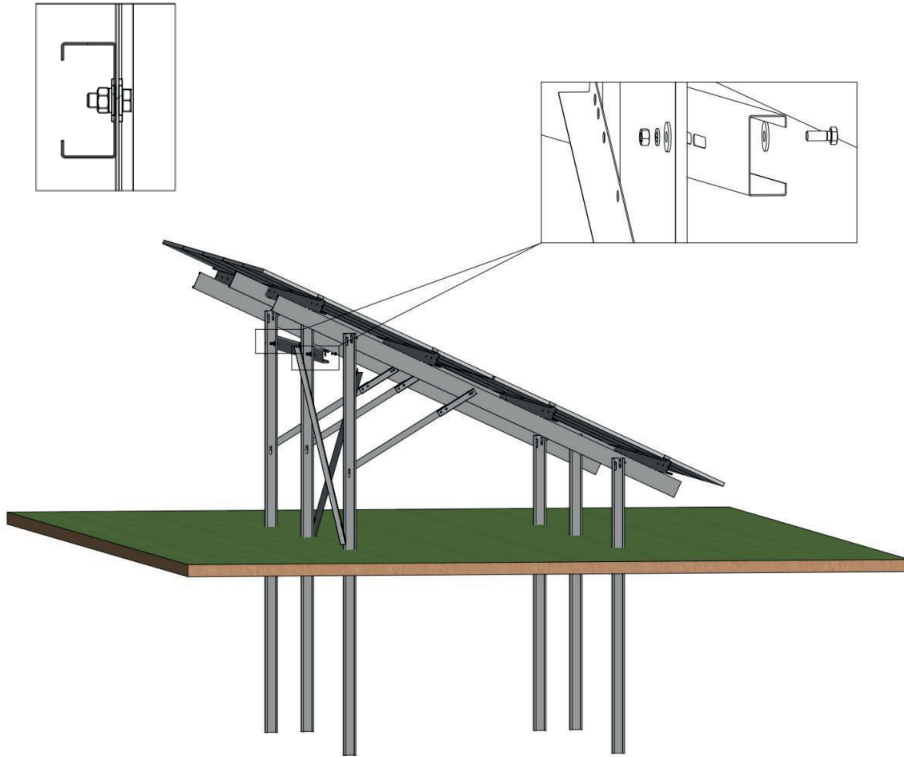


Fig. 16

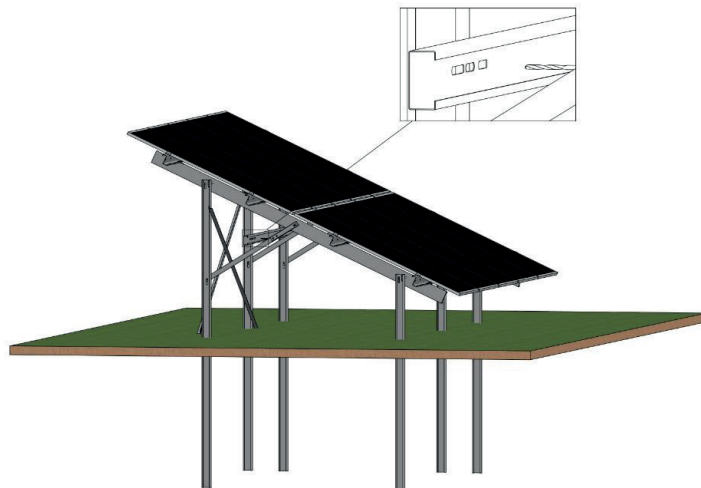


Fig. 17

A SECOND HOLE FOR THE INVERTER MOUNTING MUST BE DRILLED.

Zones where this support structures are permitted.

(up to 300 m above sea level)		
Snow zone (up to 300 m above sea level)	Wind zone [m/s] - terrain category II (up to 300 m above sea level)	Arrangement without modulus stiffening
1 (0,7 kN/m <sup>2</sup> )	1 (22 m/s)	V2x4
		V2X5
		V2X6
		V2X7
2 (0,9 kN/m <sup>2</sup> )	1 (22 m/s)	V2X4 V2X5
		V2X6 V2X7
	2 (26 m/s)	V2X4
		V2X6
3 (1,20 kN/m <sup>2</sup> )	1 (22 m/s)	V2X4 V2X5
		V2X6 V2X7
	2 (26 m/s)	V2X4
		V2X6
4 (1,6 kN/m <sup>2</sup> )	1 (22 m/s)	V2X4 V2X5
		V2X6
		V2X7
		V2X7

Snow zone	Wind zone [m/s] - terrain category II	Arrangement without modulus stiffening
<p style="text-align: center;">1 (1,20 kN/m<sup>2</sup>)</p>	24	V2x4
		V2X5 V2X6 X2V7
	28	V2X4
		V2X6
32		
<p style="text-align: center;">2 (1,60 kN/m<sup>2</sup>)</p>	24	V2X4
		V2X5 V2X6
	28	V2X7 V2X4
		V2X6