



# K9000

## INSTALLATION MANUAL

### TEHCNICAL SPECIFICATION

SYSTEM TYPE:	FLAT ROOF
MODULES LAYOUT:	LANDSCAPE
PER ROW: ANGLE	1 ( 2 - 6 MODULES )
OF THE STRUCTURE:	15°-30°



## HEALTH AND SAFETY INSTRUCTION

Before starting PV system installation works, **the installer should be equipped with individual protective measures** such as:

- Personal fall protection equipment consisting of a full-body harness with an attached internal shock lanyard;
- A ladder, scaffolding, or lift;
- put on work clothes, footwear, and protective gloves;
- remove all unnecessary items from a workplace;
- prepare equipment and check its efficiency (ladders, power tools needed during the work, etc.);
- make sure, the commencement of work does not any threats to people present near the workplace or its immediate vicinity;
- allowed to start performing the tasks if there are no signs of danger in a workplace
- make sure there are no collisions in the place of installation (cables in the ground) before structure installation

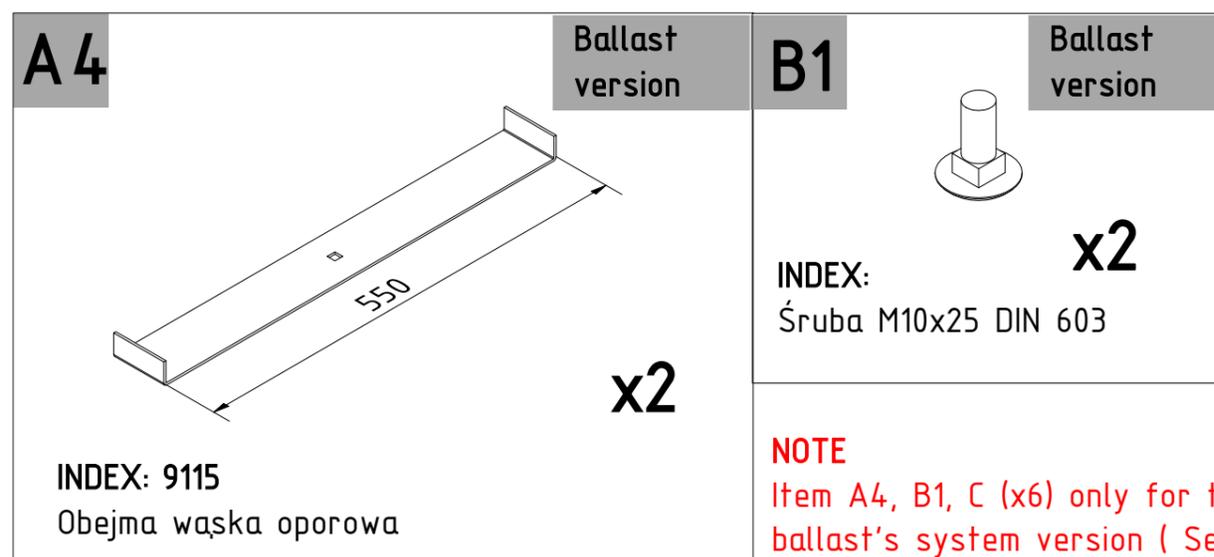
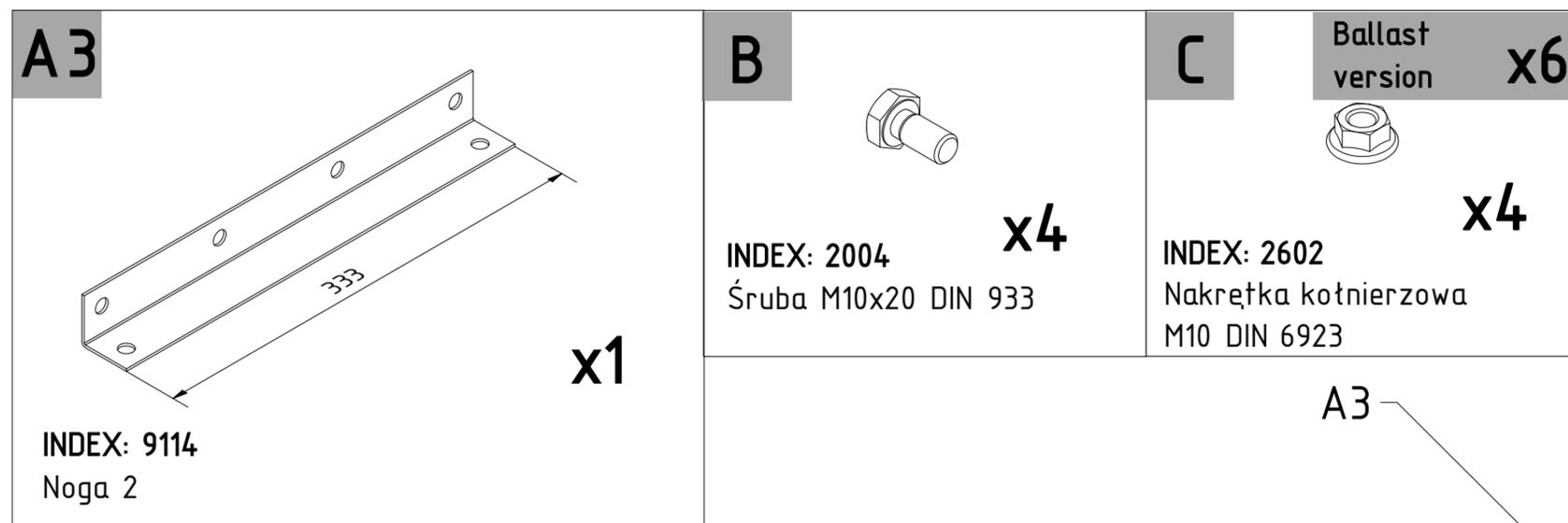
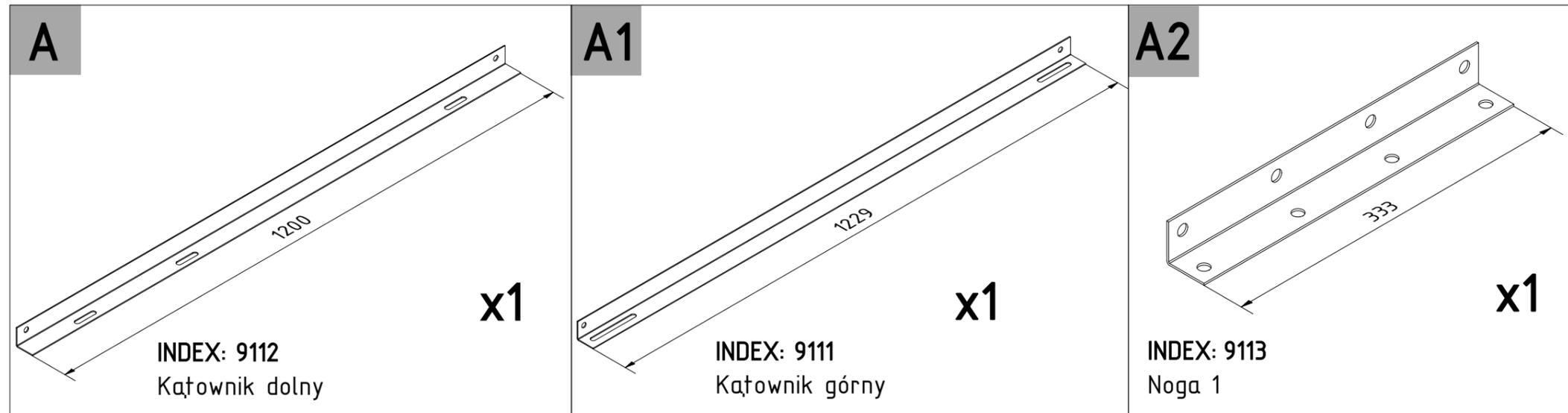
### **Additional notes**

In the event of being in immediate danger because of non-compliance with health & safety regulations and rules by people staying near a workplace or in its immediate vicinity, the person who installs PV systems has the right to suspend performing work.

## TOOLS NEEDED FOR INSTALLATION

SCREWDRIVER, SCREWDRIVER BITS, SIZE6	SIZE 13, 17	SET SQUARE,CORD,RODS (TO DESIGNATE OF TABLE)	TORQUE WRENCH
			

# LIST OF PARTS PER SUPPORTING COLUMN OF SUPPORTING STRUCTURE



**NOTE**  
Item A4, B1, C (x6) only for the ballast's system version ( See Sheet. 11)

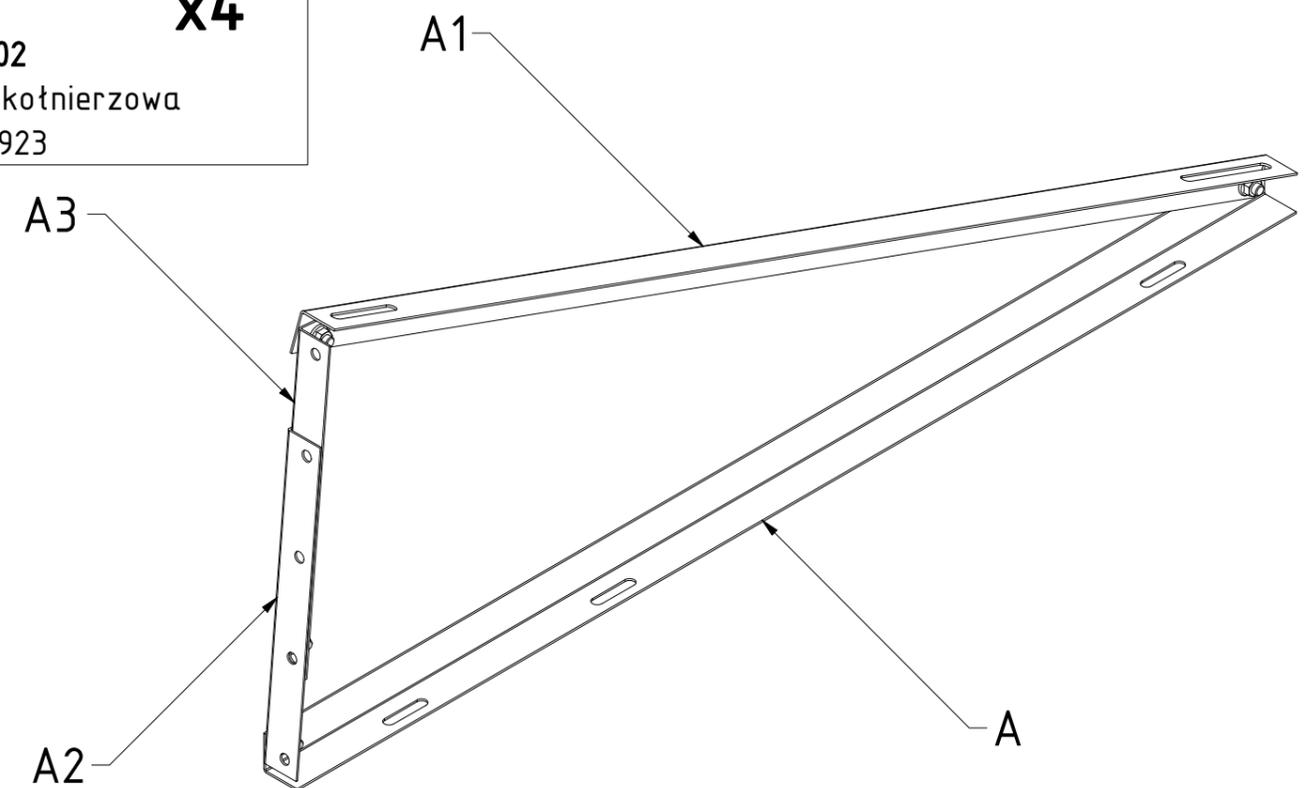
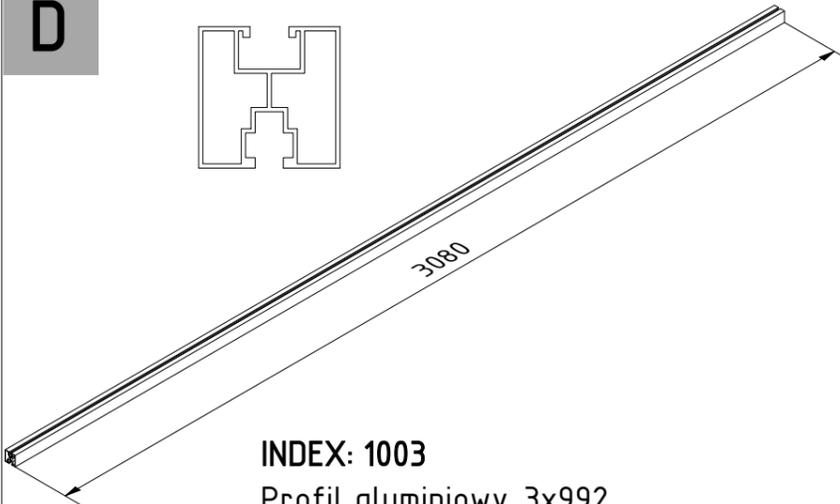
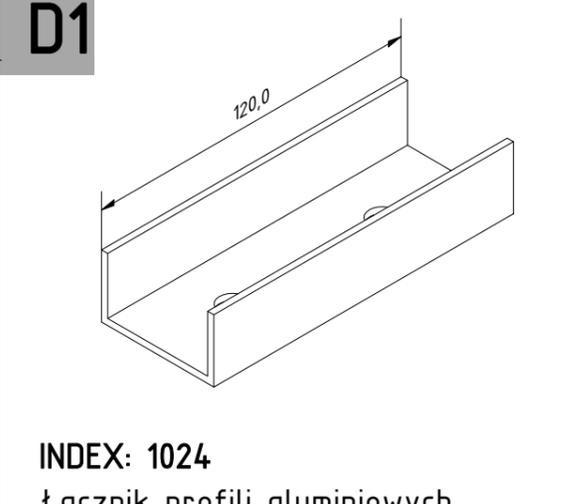


Fig. 1 Supporting column - Assembly

## LIST OF PARTS /OTHER

<p><b>D</b></p>  <p><b>INDEX: 1003</b> Profil aluminiowy 3x992</p>	<p><b>D1</b></p>  <p><b>INDEX: 1024</b> Łącznik profili aluminiowych</p>	<p><b>E</b></p>  <p><b>INDEX: 2004</b> Śruba M10x20 kl.8,8 DIN 933 Nierdzewna</p> <p><b>UWAGA</b></p> <p>Poz. E+F w zależności od ilości konstrukcji podporowych. Na jedną, jest przewidziane 2 komplety</p>	<p><b>F</b></p>  <p><b>INDEX: 2602</b> Nakrętka kołnierzowa M10 DIN 6923</p>	
<p><b>G</b></p>  <p><b>INDEX: 1135</b> Klema końcowa</p>	<p><b>H</b></p>  <p><b>INDEX: 1522</b> Klema środkowa h22</p>	<p><b>I</b></p>  <p><b>INDEX: 2102</b> Śruba M8x30 DIN 912</p>	<p><b>J</b></p>  <p><b>INDEX: 2604</b> Nakrętka kwadratowa M8 DIN 562 Nierdzewna</p>	<p><b>K</b></p>  <p><b>INDEX: 1029</b> Zaślepka ochronna</p>

### NOTE

Not allowed to tighten fasteners with wrenches or screwdrivers impact. Bolt tightening torques during assembly:

- Middle/ End clamps: 9 Nm – 13 Nm,
- M8 bolts and nuts – 25 Nm,
- M10 bolts and nuts – 30 Nm

# INSTALLATION

1. Due to its simplicity K9000, allows for quick assembly (up to a few minutes for one supporting structure) achieving the required angle of inclination of Photovoltaic (PV) modules in the range from 15° to 30° (Fig. 2-3 - 2-6). The K9000 allows you to mount PV modules with a width of 992 mm up to 1152 mm. The DIN 933 - M10x30-A2 hexagonal screw with the flange nut DIN 6923 M10-A2 (Stack B+C) for bolting the support structure.
2. To get the appropriate angle, just move A3 up/down

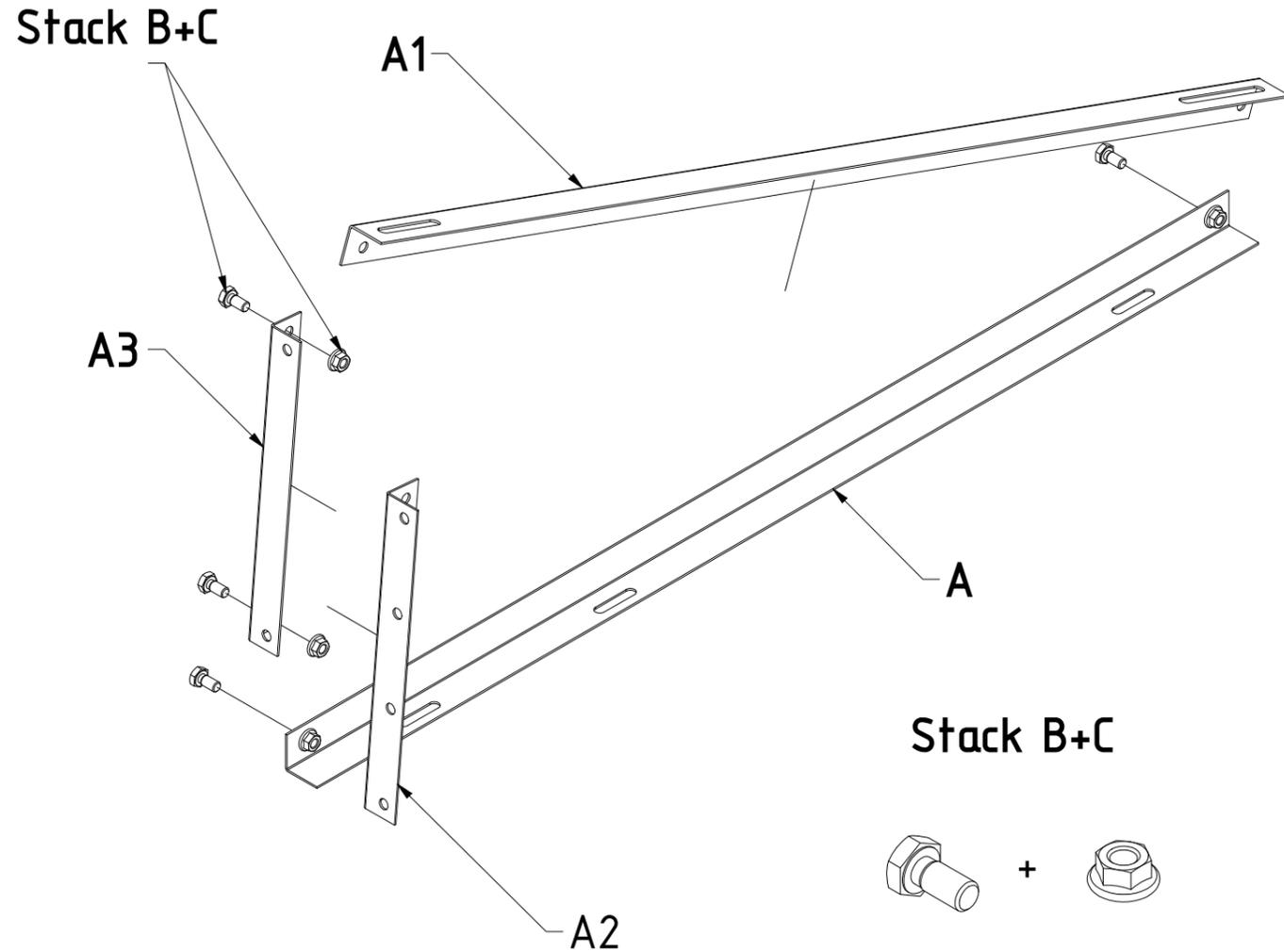


Fig.2-1 Supporting structure assembling

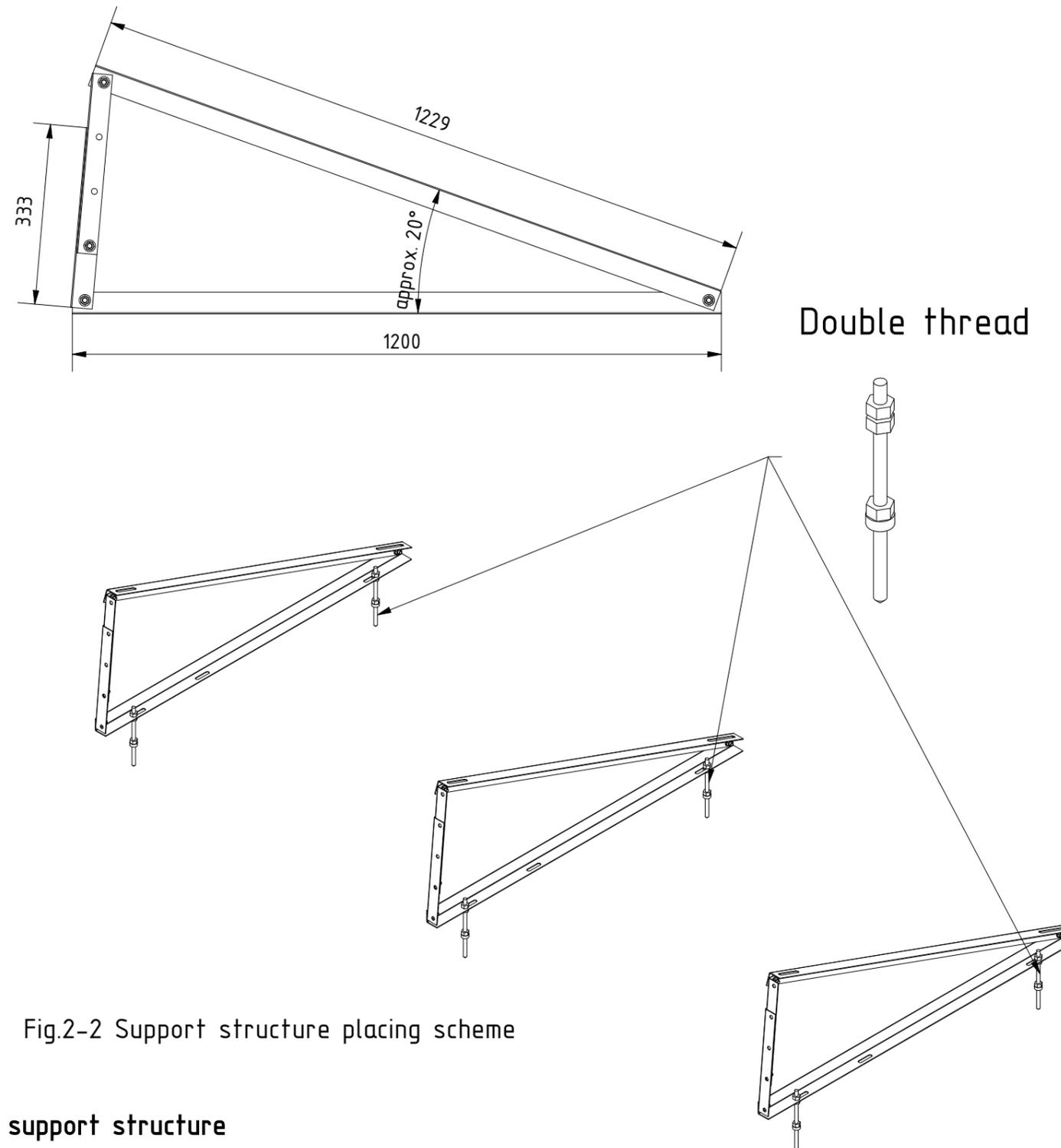


Fig.2-2 Support structure placing scheme

Fig.2 Assembling and placing of support structure

# SUPPORT STRUCTURE ANGLES

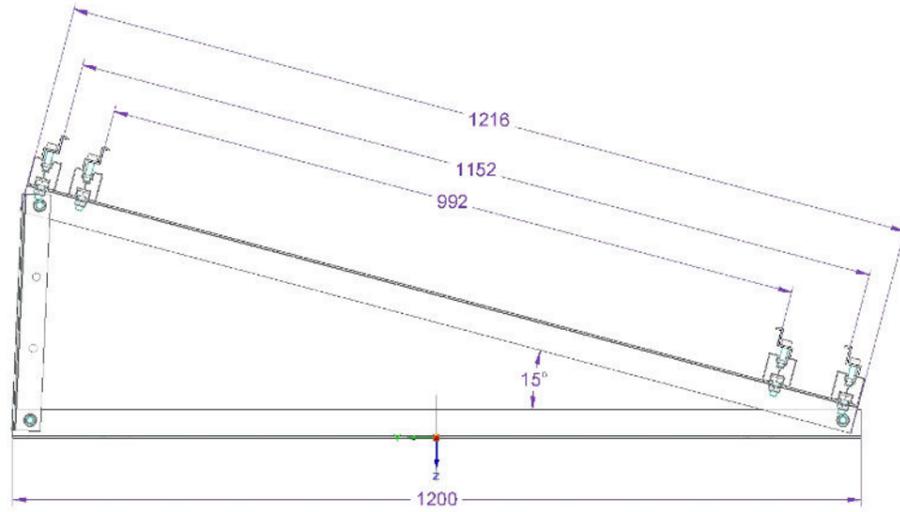


Fig.2-3 Angle 15°

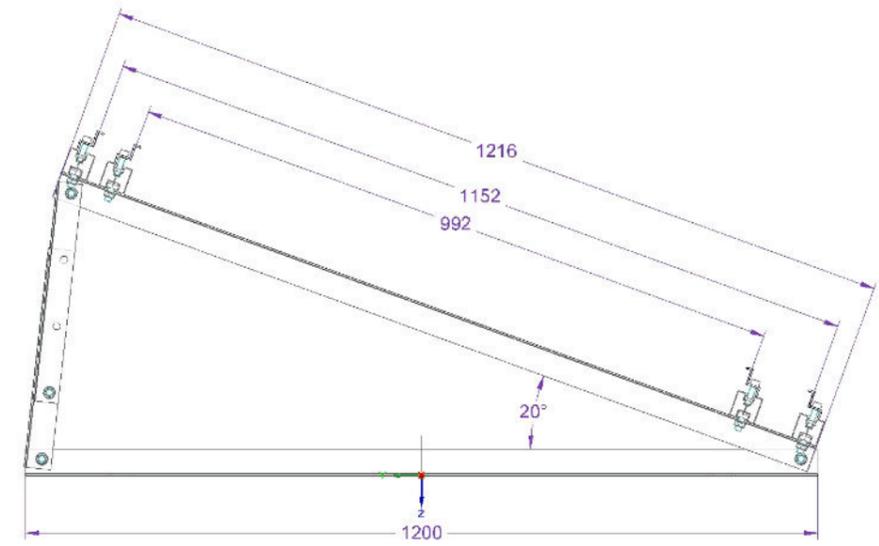


Fig.2-4 Angle 20°

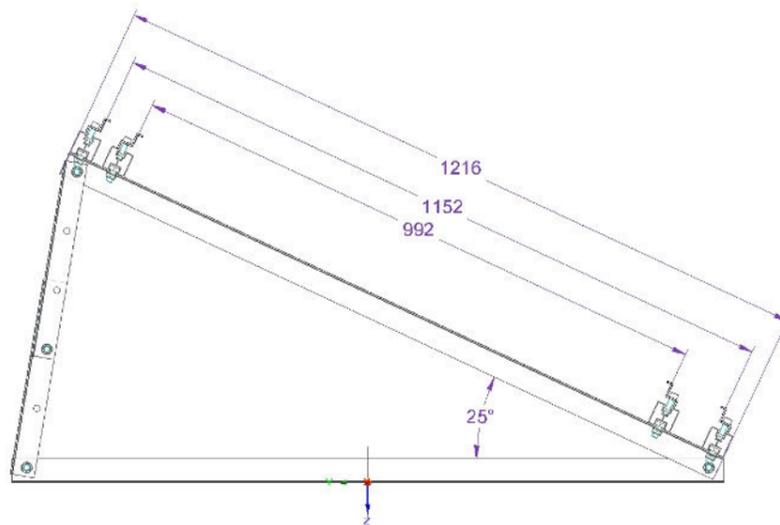


Fig.2-5 Angle 25°

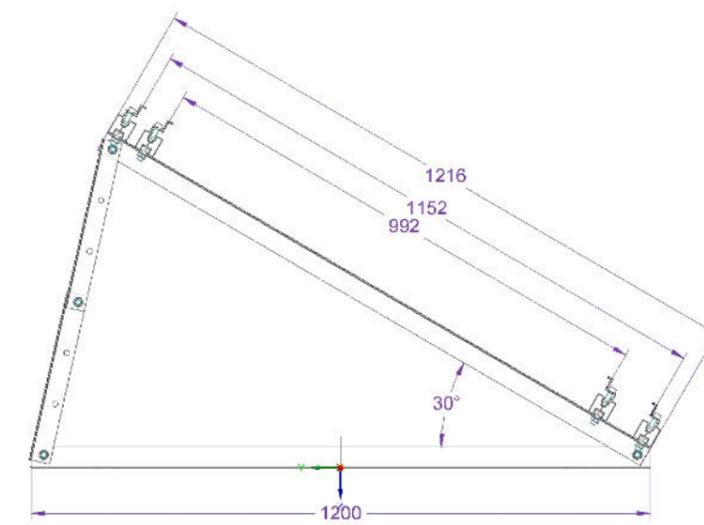


Fig.2-6 Angle 30°

Depending on the number and length of the modules mounted on one structure (from 2 to 6 pcs.), the axis spacing (parameter "b") may vary. Spacing "b" is the resultant. Depending on the number and length of PV modules (recommended number of supporting structures compared to the number of PV modules is given in Table 1), during the process of placing a support structure, the first and last structure should be positioned in such a way, that when connecting the transverse rail to support structure the distance from the edge of a transverse rail to the outer side of a support structure is 360 mm (see Fig. 3-1, Fig. 3-2). Spacing "b" see Table 1

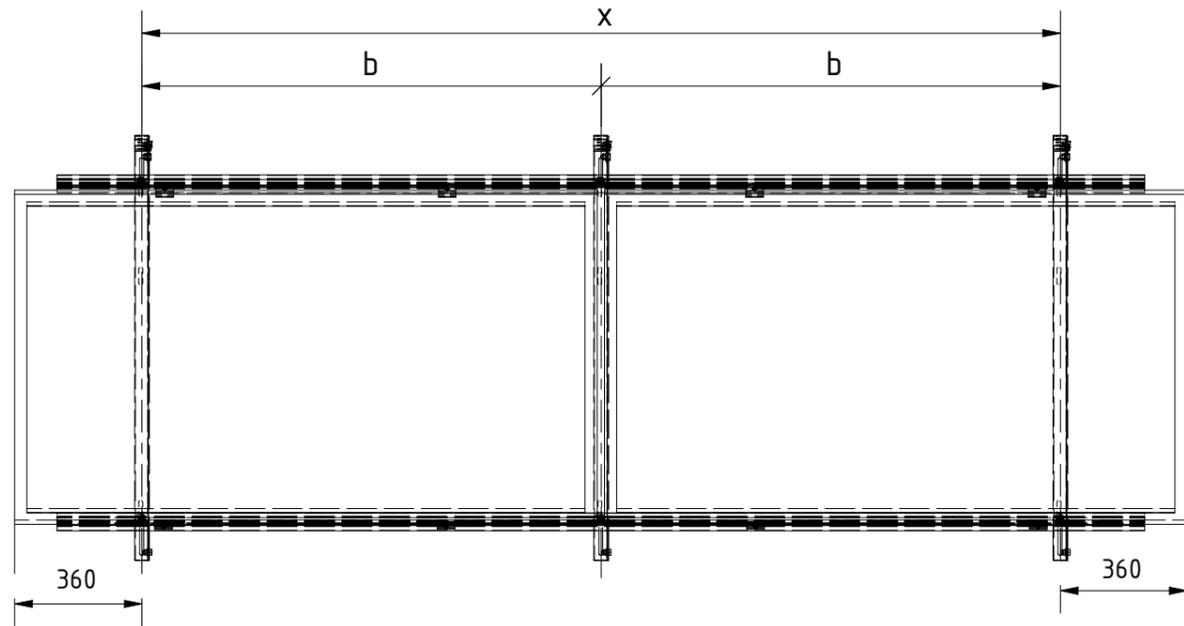


Fig. 3-1 Option for 2 modules

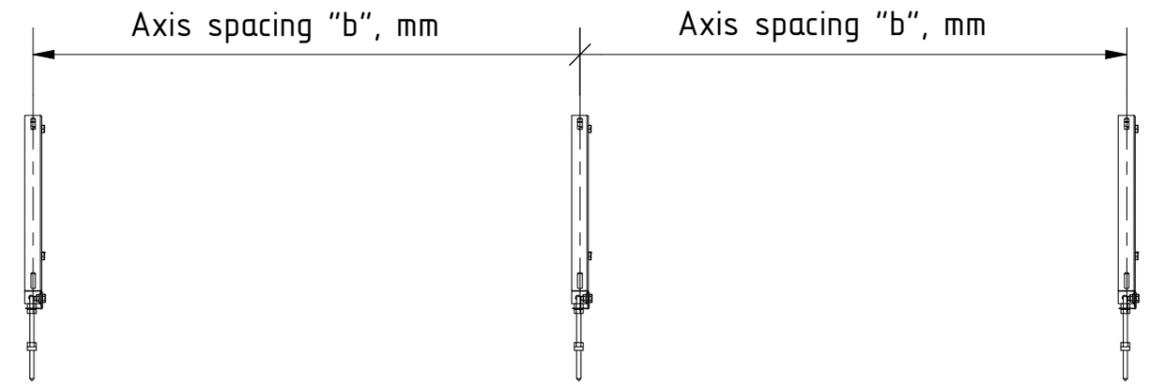


Table 1

PV modules Qty.	Support structure, Qty	Axis spacing "b"
2	3	$x/2$
3	4	$x/3$
4	5	$x/4$
5	6	$x/5$
6	7	$x/6$

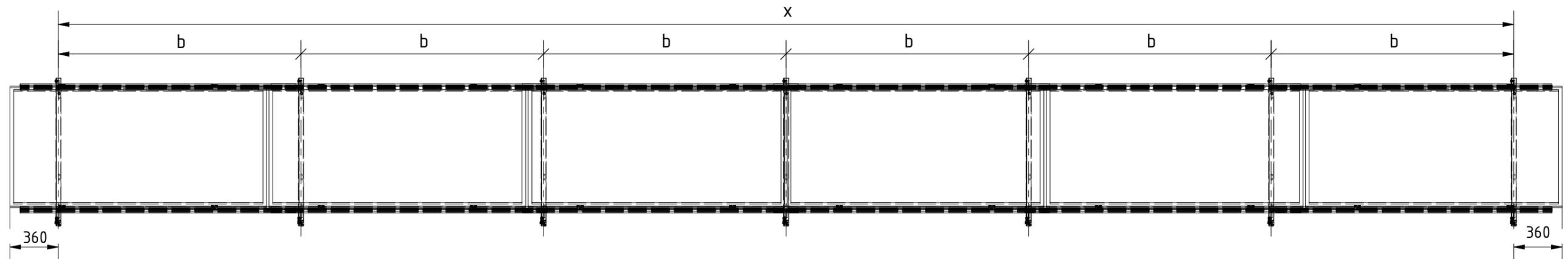
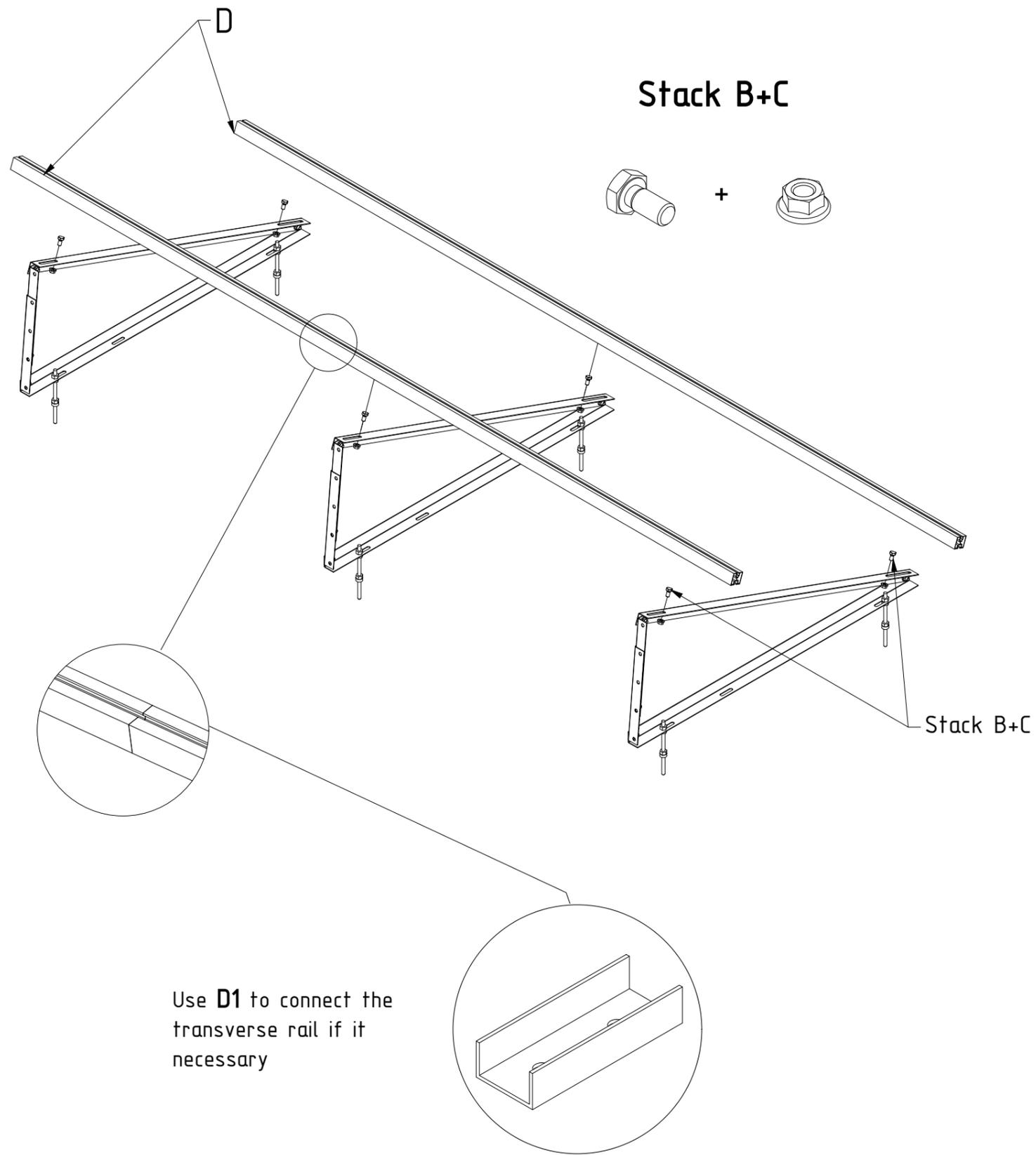


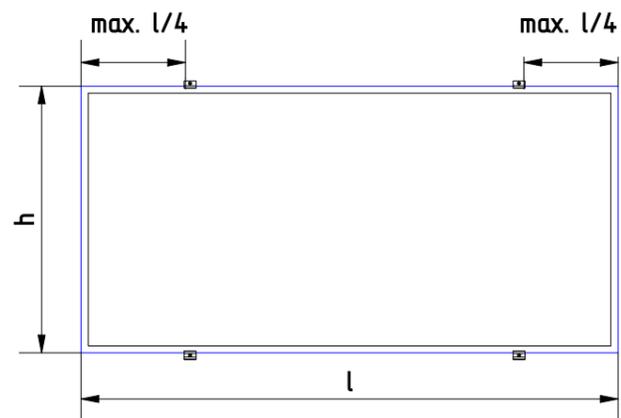
Fig.3-2 Option for 6 modules

Fig.3 Support structure placing scheme

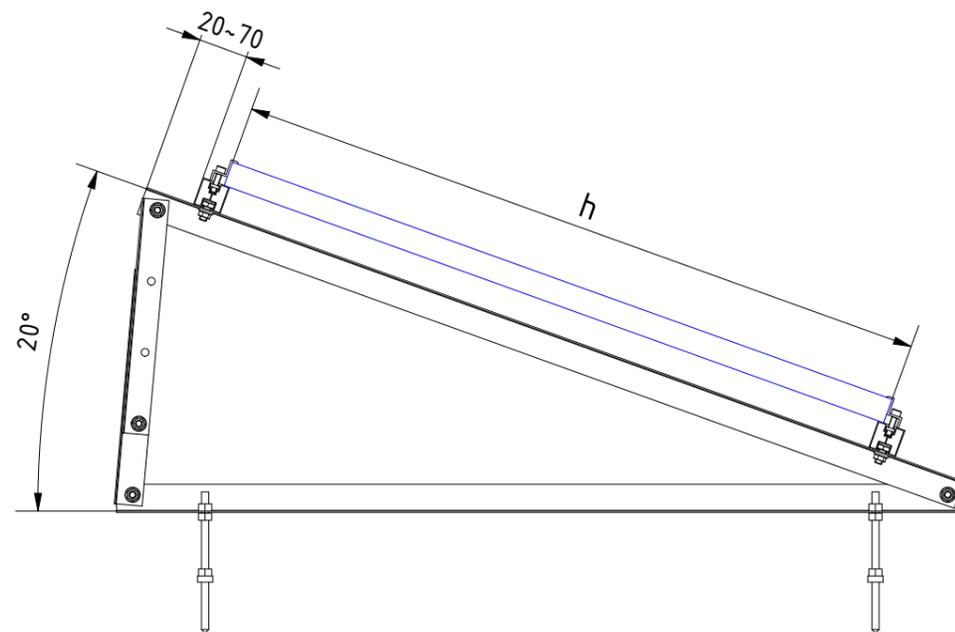


**Fig.4** Connecting the transverse rail to the support structure

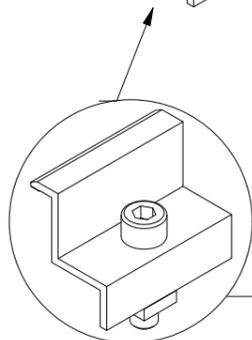
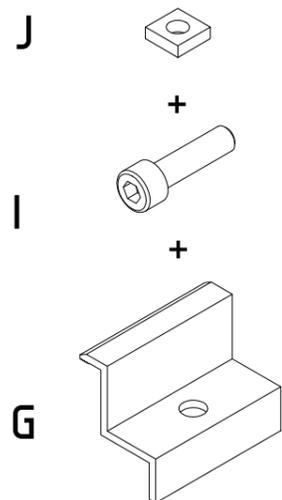
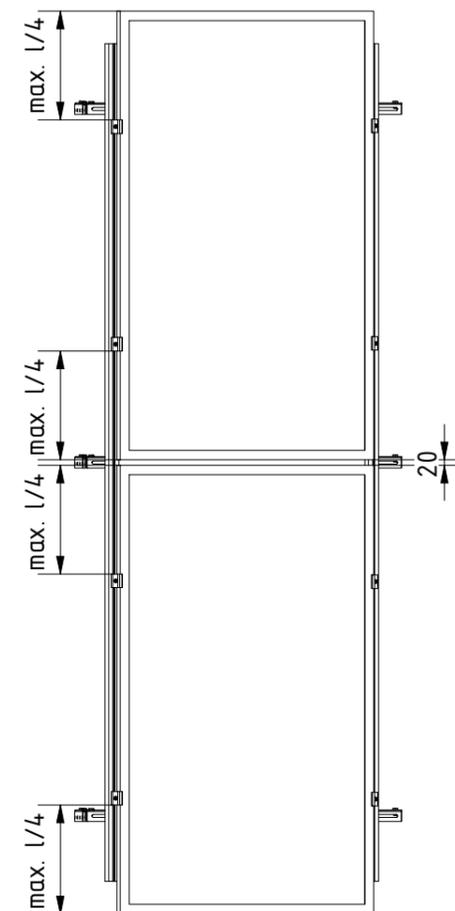
Scheme of mounting clamps to PV module



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



TOP VIEW



End clamp

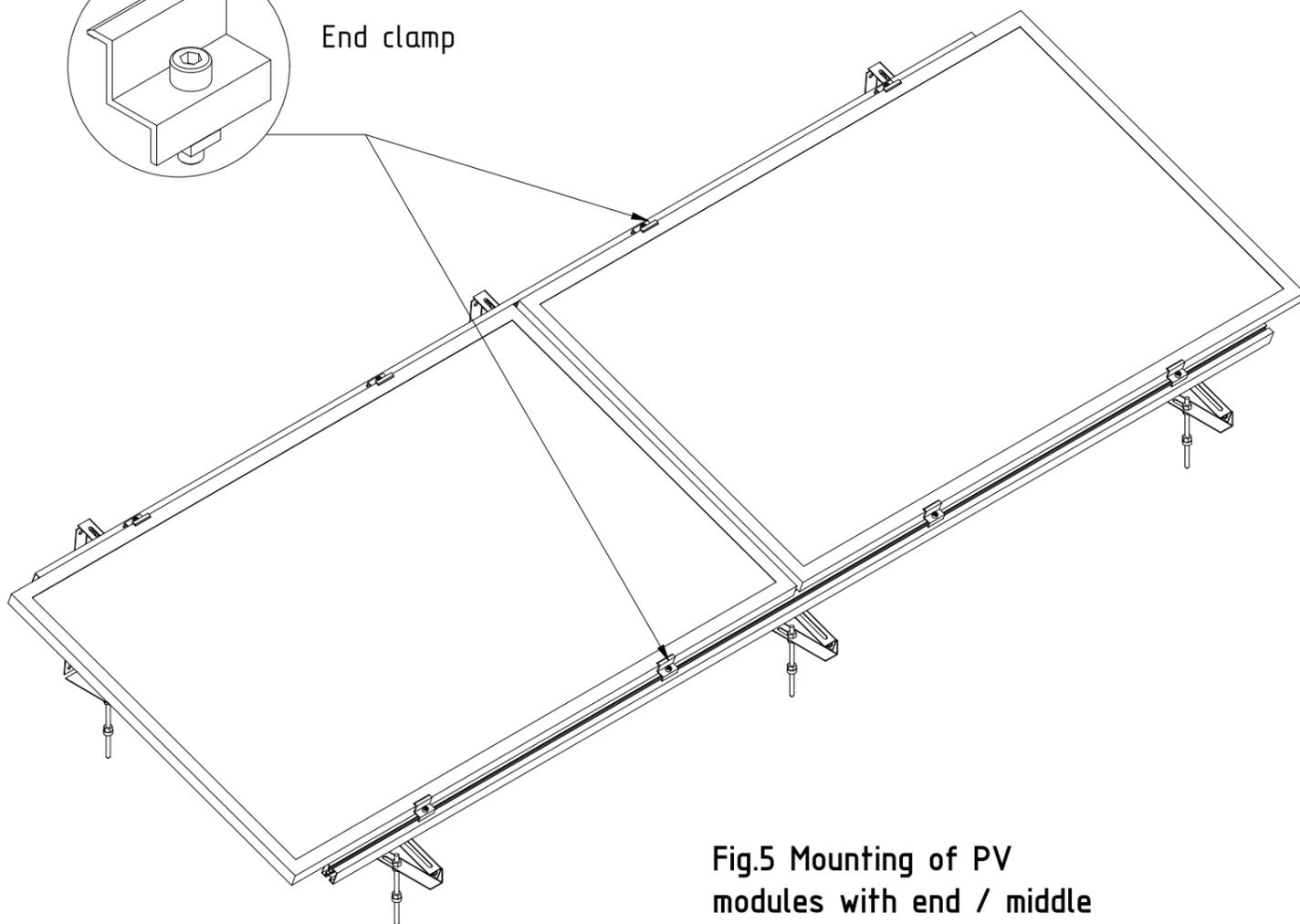


Fig.5 Mounting of PV modules with end / middle clamps

# BALLAST'S SYSTEM VERSION

For the ballast version, the arrangement of the supporting structure spacing in the axes, and the PV modules used are identical to the above-mentioned assembly instructions

Stack B1+C

Stack B1+C

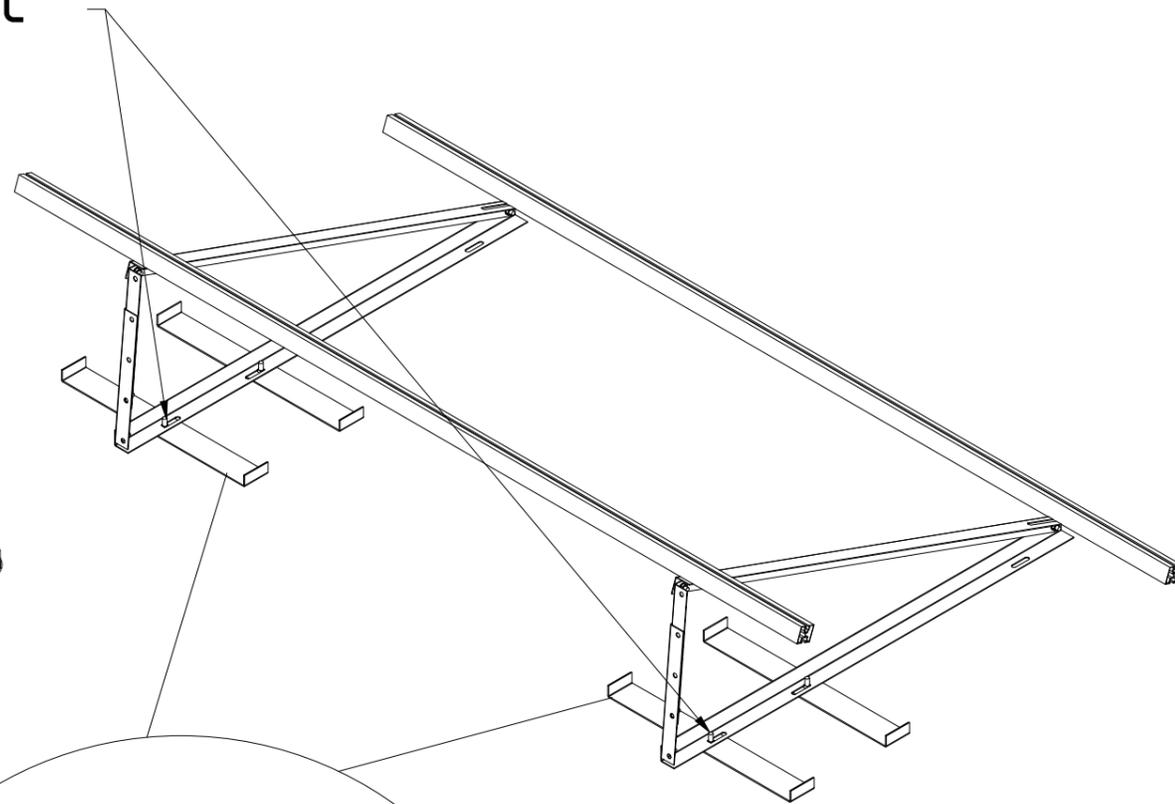
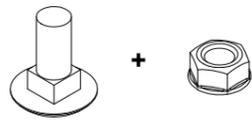


Fig.6 Supporting stucture - ballast version

Concrete blocks

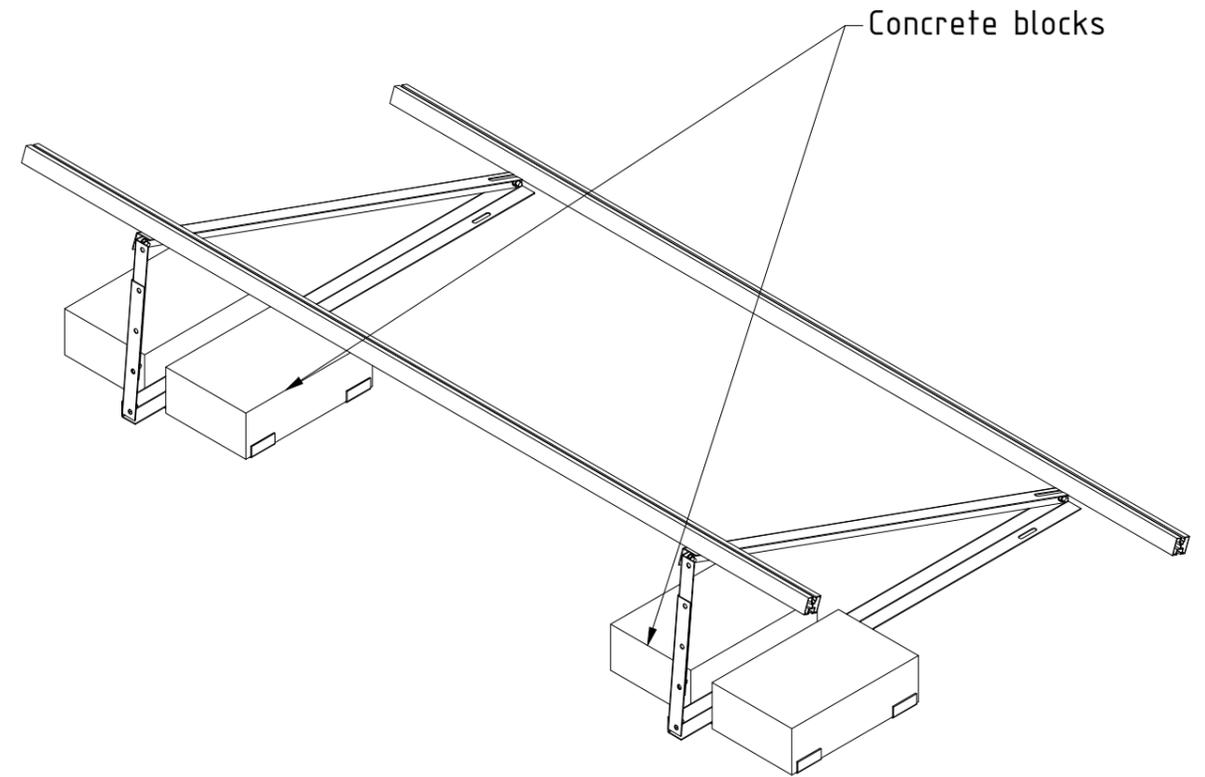


Fig.7 Concrete blocks placing - ballast version

Narrow resistance clamp