

# INSTALLATION INSTRUCTIONS FOR THE DS-V4N STRUCTURE



Manufacturer : BAKS – Kazimierz Sielski

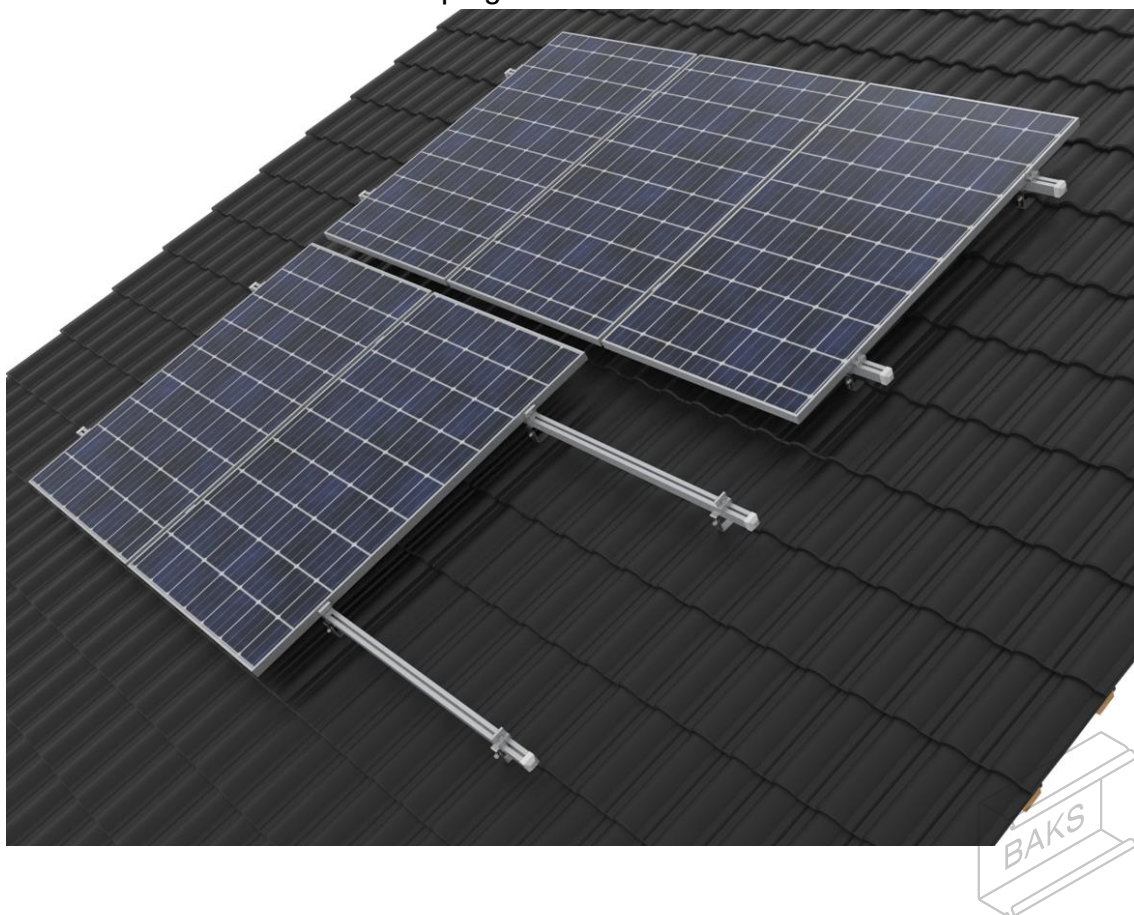
ul. Jagodne 5

05-480 Karczew

Poland

Construction for panels in a vertical arrangement (vertically).

Mounted on a sloping roof covered with ceramic tiles.



## 1. Necessary tools for assembling structures

- Allen key (ampoule) size 6
- Cordless screwdriver with speed and torque control
- Hexagonal bit, Allen size 6 for screwdriver head
- Combination spanners in sizes 13, 15, 17 mm,
- Ratchet wrench with sockets in sizes 13, 15, 17 mm,
- Extension 100-120mm for socket wrenches
- Rubber hammer
- UV-resistant roofing sealant
- Torque wrench, range 10-45 Nm

## 2. General information:

- Possibility of using the structure in wind and snow zones in accordance with the following standards: **EN 1991-1-3 and EN 1991-1-4.**
- **Before starting the assembly of the structure, you should read the installation instructions for photovoltaic panels**
- Cutting elements is allowed only with low-speed reciprocating saws and hand saws with tools made of high quality steel, this avoids excessive heating of the material.
- Cut edges of elements made of steel with zinc coating must be unconditionally protected – sanded with sandpaper, cleaned and degreased again, after drying protect with zinc paste with a minimum of three layers.
- Avoid mounting pressure clamps in the extreme openings of mounting profiles
- **SAM8x...E** screws with **NRM8F** nuts should be tightened with a torque of 12-14 Nm
- **SAM8x...E** screws with **NKWSM8A** nuts should be tightened with a torque of 12-14 Nm
- When twisting the **SGKFM8x20** and **SGKFM10x20PV** screws, hold the screw head with your hand in such a position that the planting is blocked on the walls of the hole in which we mount the screw, and then with the help of a screwdriver, tighten the screw slowly until it is blocked in the hole. In the final phase, tighten the screwdriver with the following torques: M8 – 22 Nm; M10 - 42 Nm.
- **SSZ10x20E** and **SRM10x...F** screws... tighten with 20 Nm torque



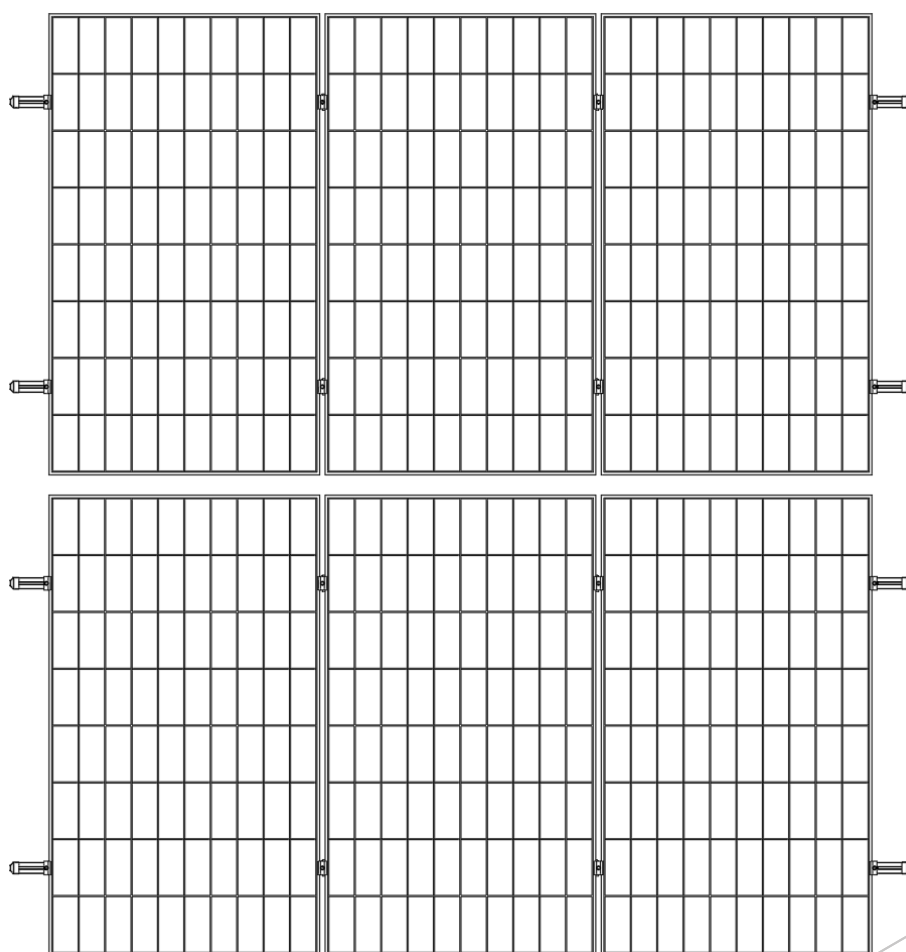
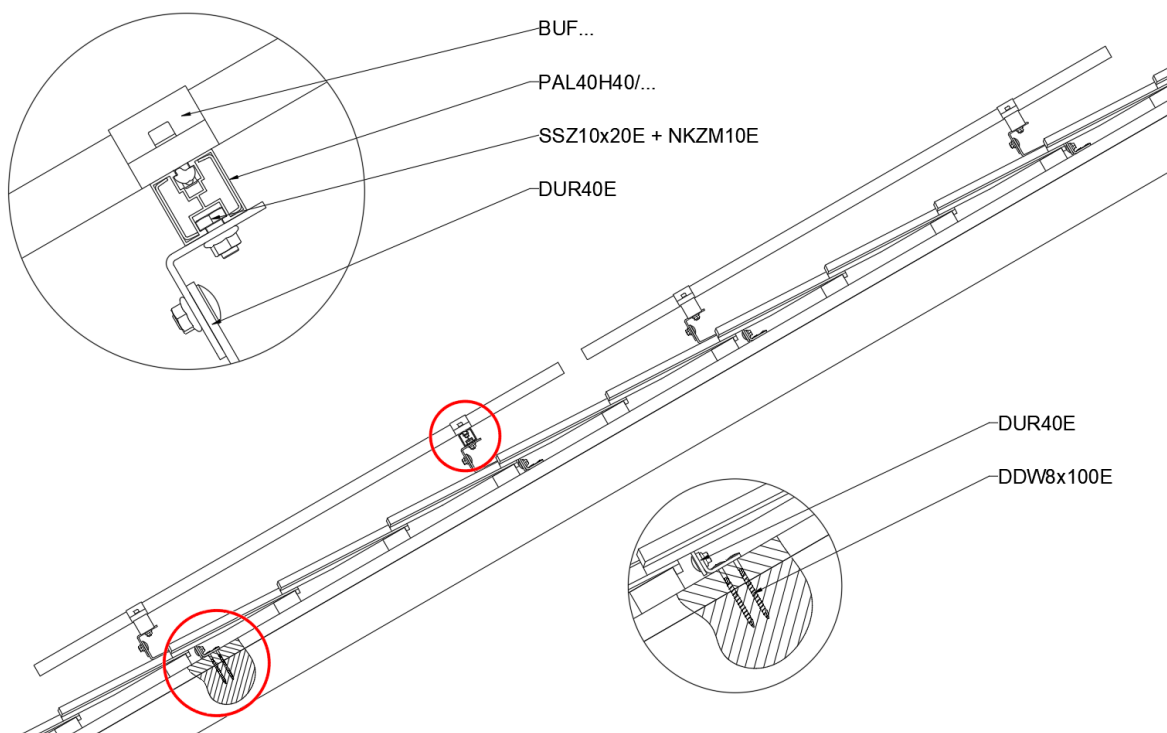
### 3. Assembly of the structure type DS-V4N

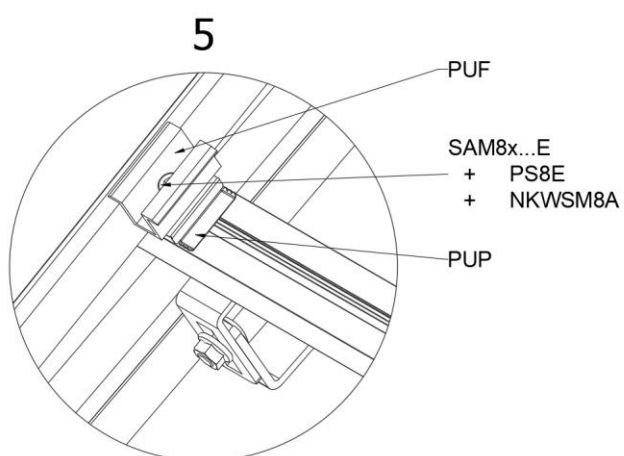
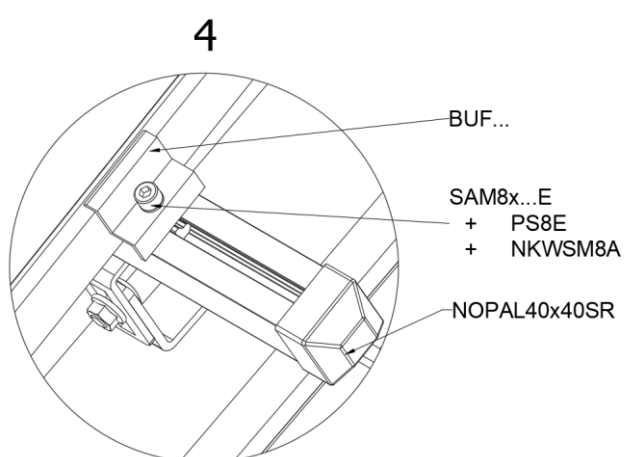
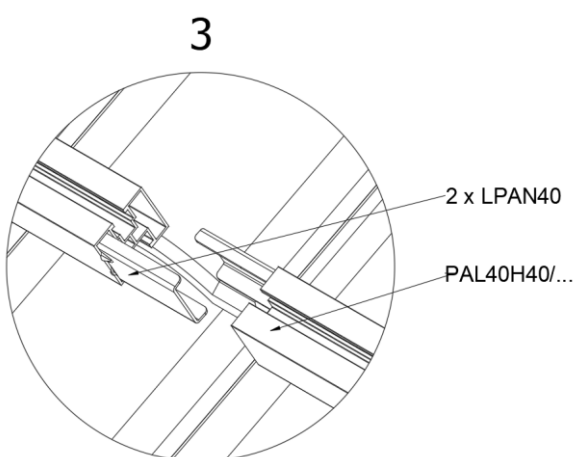
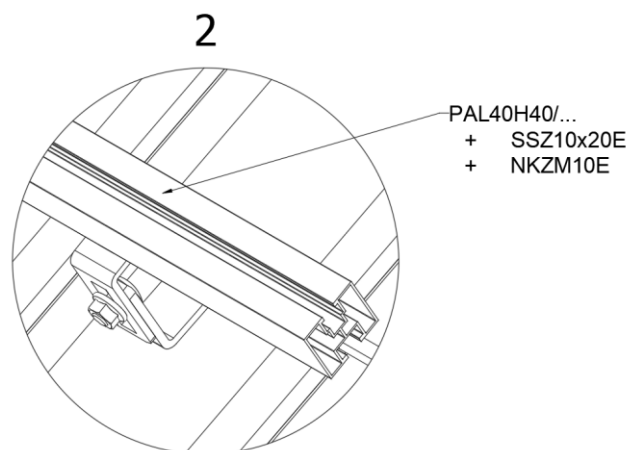
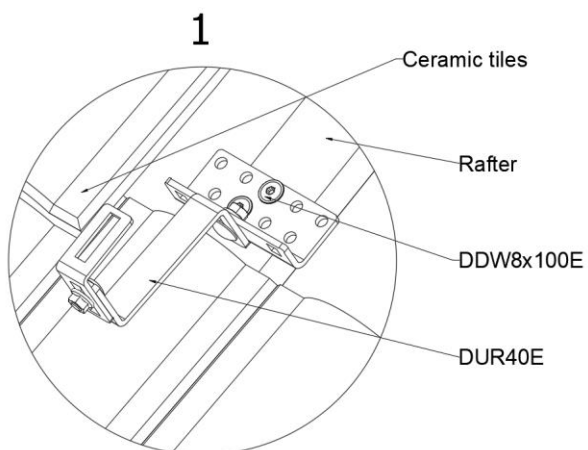
- Determination of the position of rafters
- Determining the position of the roof brackets on the edge, the support profile may protrude up to 300 mm behind the last handles.
- The edge of the PV panel must be at least 500 mm from the edge of the roof
- The spacing of subsequent brackets in the vertical axis depends on the mounting zones designated by the manufacturer of the panels used, in the horizontal axis they should be mounted in each rafter
- **PUP** grounding pads should be placed in the mounting areas of **PUF** intermediate holders
- If there is an even number of modules in a single row of construction, grounding washers are mounted every second pair of module
- In the case of an odd number of modules, **PUP** washers should be additionally added under the **PUF** handles to ensure grounding of the last module as well

### 4. List of elements included in the DS-V4N structure in the version on aluminum profiles PAL40H40

| Nr | Name                    | Product symbol | Purpose in construction                  |
|----|-------------------------|----------------|------------------------------------------|
| 1  | Aluminium profile       | PAL40H40/...   | Carrier profile                          |
| 2  | Connector               | LPAN40         | Aluminium profile connector              |
| 3  | Roof bracket adjustable | DUR40E         | Mounting the structure to the rafters    |
| 4  | Wood screw              | DDW8x100       | Mounting the structure to the rafters    |
| 5  | Side handle             | BUF...         | Side clamp fixing panels                 |
| 6  | Intermediate handle     | PUF            | Intermediate clamp fixing the panels     |
| 7  | Grounding pad           | PUP            | Grounding of panels                      |
| 8  | Screw                   | SAM8x...E      | Clamp mounting screw                     |
| 9  | Sliding nut             | NKWSM8A        | Nut                                      |
| 10 | Spring washer           | PS8E           | Washer                                   |
| 11 | Screw                   | SSZ10x20E      | Attaching the profile to the seam holder |
| 12 | Channel nut             | NKZM10E        | Attaching the profile to the seam holder |







## 5. List of components included in the DS-V4N design with alternative profiles

| Nr | Name                    | Product symbol | Purpose in construction               |
|----|-------------------------|----------------|---------------------------------------|
| 1  | Channel                 | CWP40H35/...MC | Carrier profile                       |
| 2  | Connector               | LC40H35MC      | Channel connector                     |
| 3  | Roof bracket adjustable | DUR40E         | Mounting the structure to the rafters |
| 4  | Wood screw              | DDW8x100       | Mounting the structure to the rafters |
| 5  | Side handle             | BUF...         | Side clamp fixing panels              |
| 6  | Intermediate handle     | PUF            | Intermediate clamp fixing the panels  |
| 7  | Grounding pad           | PUP            | Grounding of panels                   |
| 8  | Screw                   | SAM8x...E      | Clamp mounting screw                  |
| 9  | Channel nut             | NRM8F          | Nut                                   |
| 10 | Spring washer           | PS8E           | Washer                                |
| 11 | Mushroom head screw     | SGKFM...       | Bolt + flange nut                     |

- PAL30H32 aluminium profiles can be used in 1 wind zone and 1, 2, 3 snow zones
- Spacing of supports not more than 0.8 m

| Nr | Name                    | Product symbol | Purpose in construction                  |
|----|-------------------------|----------------|------------------------------------------|
| 1  | Aluminium profile       | PAL30H32/...   | Carrier profile                          |
| 2  | Connector               | LPAN30         | Aluminium profile connector              |
| 3  | Roof bracket adjustable | DUR40E         | Mounting the structure to the rafters    |
| 4  | Wood screw              | DDW8x100       | Mounting the structure to the rafters    |
| 5  | Side handle             | BUF...         | Side clamp fixing panels                 |
| 6  | Intermediate handle     | PUF            | Intermediate clamp fixing the panels     |
| 7  | Grounding pad           | PUP            | Grounding of panels                      |
| 8  | Screw                   | SAM8x...E      | Clamp mounting screw                     |
| 9  | Sliding nut             | NKWSM8A        | Nut                                      |
| 10 | Spring washer           | PS8E           | Washer                                   |
| 11 | Screw                   | SSZ10x20E      | Attaching the profile to the seam holder |
| 12 | Channel nut             | NKZM10E        | Attaching the profile to the seam holder |



