

SunZilla - Guide 2: Inverter and battery boxes

This is the second tutorial for building the Pop-up Solar Generator: SunZilla 3.0. Here we are going to build the inverter and battery box

 Difficulty **Medium**

 Duration **3 hour(s)**

 Categories **Energy**

 Cost **100 EUR (€)**

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Comments

Materials

Tools

Step 1 - Inverter Box (1/8 pallet Euro norm box)

To make sure that the inverter can't move around inside the inverter boxes, an inner mounting structure is required. The inverter attaches to the mounting structure, fixing it in place. The mounting structure is fabricated using laser cut wood structures. The .DXF source files for the laser cutting can be downloaded below.

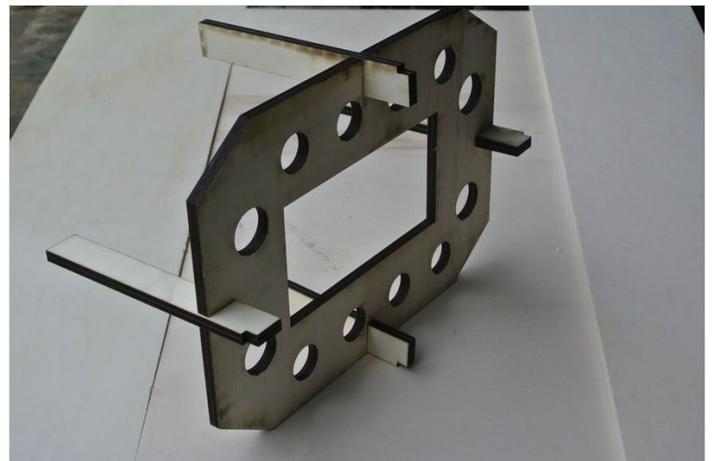
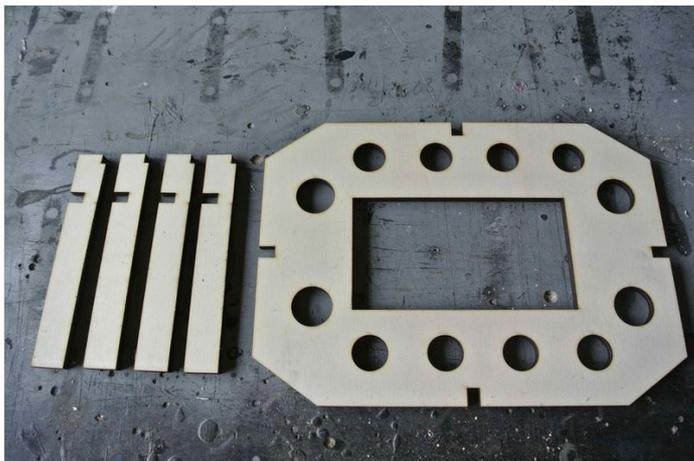
When using the files with the laser cutter, refer to the laser cutter tutorial.

The inverter and its mounting structure fit inside one of the 1/8 EURO norm boxes, which have external dimensions of 230mm (H) x 400mm (L) x 300mm (W), and usable internal dimensions of 208mm (H) x 370mm (L) x 270mm (W).

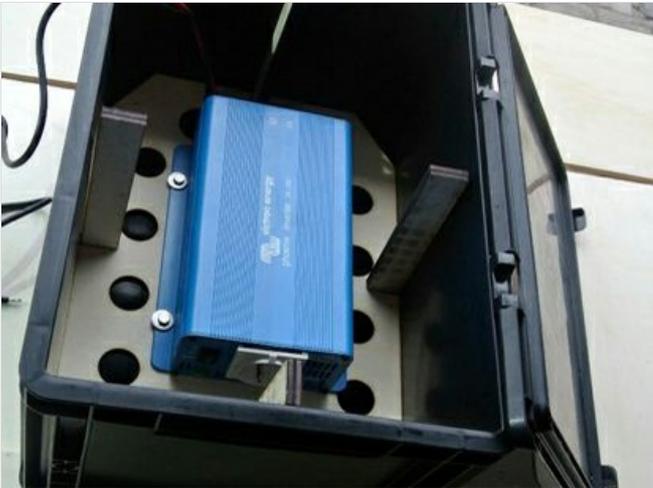
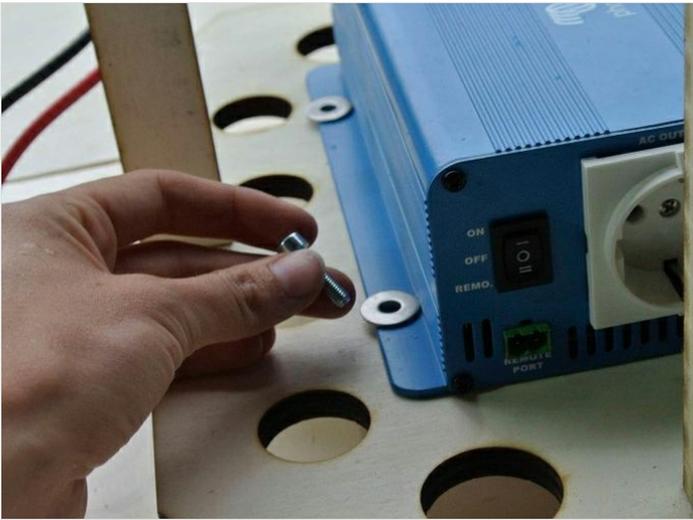
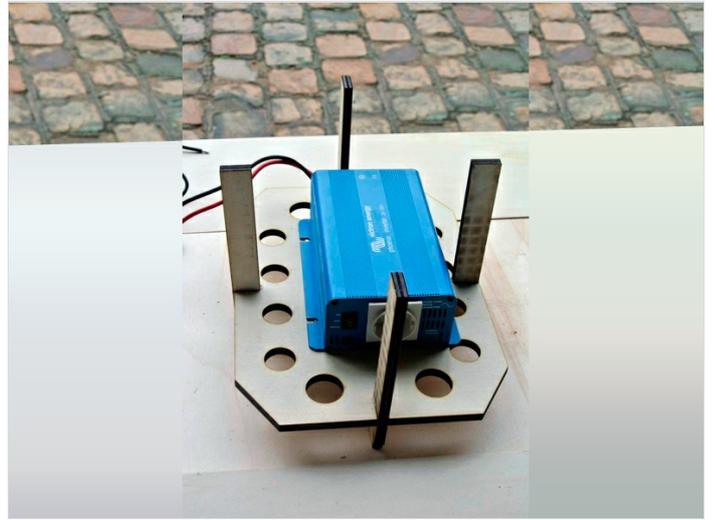
One piece of plywood measuring 800mm (L) x 600mm (W) x 10mm (th) is sufficient to laser cut parts for both the inverter and battery boxes' internal structures (see next step).

 We have used the Victron Phoenix-Inverter-350 with a spec of 350 VA, 24 V and dimensions of 72mm (H) x155mm (W) x237mm (D). If you use a different inverter, it will probably have a different form factor, and you will likely have to adjust the .DXF files accordingly.

 If you don't have access or prefer not to use a laser cutter, the inner structures can also be built by hand using normal wood crafting techniques with a jigsaw and wood drills. Therefore, the .PDF technical drawings of the structures can also be downloaded below.



Step 2 -



Step 3 - Battery Box (1/8 pallet Euro norm box)

To make sure that the battery can't move around inside the battery boxes, an inner mounting structure is required. The batteries are held in place by the mounting structure, and no physical attachment is required. As with the inverter box, the battery box mounting structure is fabricated using laser cut wood structures. The .DXF source files for the laser cutting can be downloaded below.

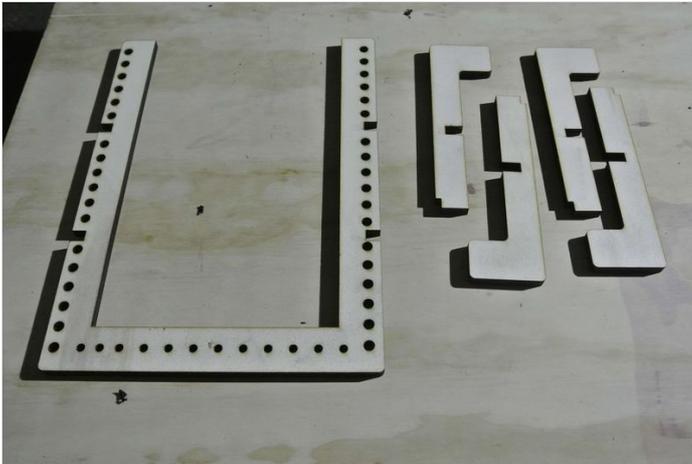
When using the files with the laser cutter, refer to the laser cutter tutorial.

The batteries and their mounting structure fit inside one of the 1/8 EURO norm boxes, which have external dimensions of 230mm (H) x 400mm (L) x 300mm (W), and usable internal dimensions of 208mm (H) x 370mm (L) x 270mm (W).

As mentioned in the previous step, one piece of plywood measuring 800mm (L) x 600mm (W) x 10mm (th) is sufficient to laser cut parts for both the inverter and battery boxes' internal structures.

 We have used Yuasa NP 38-12B batteries with a spec of 12 V, 38,5 Ah, and individual dimensions of 170mm (H) x 197mm (L) x 165mm (W). If you use different batteries, it will probably have a different form factor, and you will likely have to adjust the .DXF files accordingly.

 If you don't have access or prefer not to use a laser cutter, the inner structure can also be built by hand using normal wood crafting techniques with a jigsaw and wood drills. Therefore, the .PDF technical drawings of the structures can also be downloaded below.



Step 4 -

