

PV Port & Store

OPERATION & MAINTENANCE FOR CONSUMERS

The PV Port & Store is an exciting new product which is designed to be easy to own and maintain for the consumers. Nevertheless, to ensure that your PV Port system keeps generating energy at its optimum capacity, certain aspects related to the operation and maintenance need to be taken care of. The sections below will describe how to care for your PV Port & Store

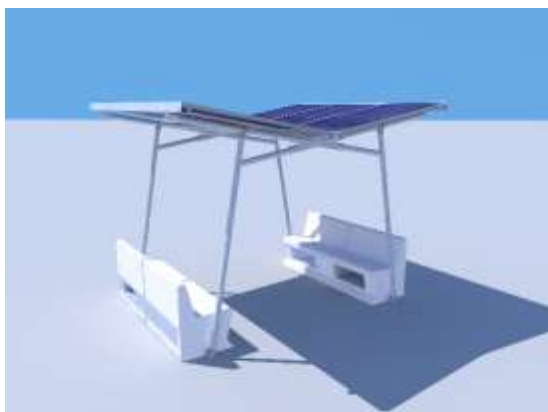


Figure 1: PV Port & Store (Version 2-5)

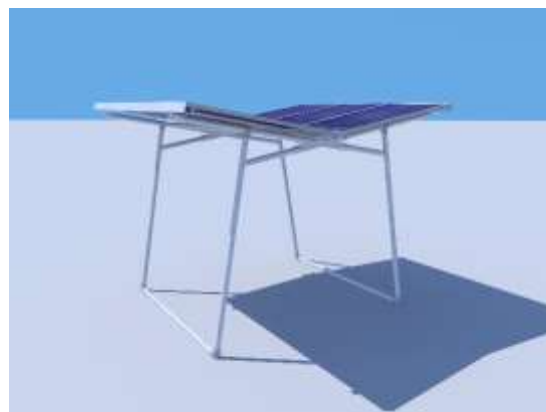


Figure 2: PV Port & Store (Version 1)

1. Why regular maintenance is for the PV Port & Store is required?

- Better performance leads to improved Electricity generation
- Safety for the consumers as well as the system
- Longer operating life of the system

2. Basic checks and precautions

- Regularly check of the water level in the benches, to ensure sufficient dead weight to withstand wind loads.
- Check battery health of the lead acid battery in Remote Console. When the following abnormalities are observed, discover the cause and replace any defective batteries:
 - (a) Any voltage abnormalities,
 - (b) Any Physical defects (e.g. a cracked or deformed container or cover),
 - (c) Any electrolyte leakage,
 - (d) Any abnormal temperatures.
- Ensure that all drawers are closed properly and there is no gap where water can enter the drawer.
- Check for damage or other issues to AC and DC cables

3. Cleaning of PV Modules

The Solar PV Modules play a crucial part in the PV Port & Store. The level of power output from the modules decides the amount of Electricity generated. Cleaning is important to ensure that the power output does not get affected.



Figure 3: Cleaning of Solar PV Module for better absorption of solar radiation

Things to keep in mind:

- The consumer should periodically check for dust & dirt accumulation on the PV modules. If found, the modules must be inspected and cleaned so that it does not cause any degradation in the performance of PV port system.
- Watch out for shading on PV modules due to any trees, building, or any object on module etc.
- The correct time to clean the Solar PV Modules is when there is low light condition or solar radiation is low **(before 7:30 AM and after 6:00 PM)**. This is the suitable time as PV modules are not in operation and the risk of electrical shock hazard is minimum.
- The panels should be cleaned **once every week**.
- Depending upon the location, if the soiling factor, bird droppings or accumulation of dust on the PV Modules is more and it affects the PV Power output then, the Solar PV Modules are preferred to be cleaned every alternate day.

The PV Port & Store provides you with 2 options for cleaning as described below:

A. Manual Cleaning

- Before starting with the cleaning of Modules thoroughly check for damage or cracks on module and any loose connections.
- Ensure that the water to be used is free from dirt and with low TDS (not hard water), in case, if you are using any cleaning medium, then use mild cleaning agent, non – abrasive detergents.
- Do not use high pressure pipes to clean the modules as water pressure may damage the module.
- Use ambient temperature water for cleaning the Modules.
- Wipe water immediately.
- Do not clean the back side of module which consist of cables, wires or junction box.
- Remove the bird droppings or stubborn marks using soft sponge, fibre cloth or non-abrasive brush. Please avoid the use of metal brushes or abrasive material for cleaning.
- Avoid standing or stepping on the Modules for cleaning, use ladder or proper methods to access the Modules.

B. Sprinkler based Cleaning

- Before starting with the cleaning of module with the sprinkler system, check that there is enough water available for cleaning either in the benches or in the household tank in case of direct water connection.
- Switch ON the sprinkler pump switch for starting the sprinkler. Run the sprinkler for at least 5 minutes.
- In case of automatic operation, the sprinkler will switch itself ON as per a pre-defined schedule.
- Please stand away from the PV Port & Store when the sprinkler is in operation to avoid getting water sprayed on yourself.
- If using water from benches for sprinkler operation, please refill water in the benches at regular intervals.

4. Filling the benches with water

- Each roto molded PE bench has an empty weight of 25 kg which makes transport easy. The benches must be filled with water to serve as dead load for high wind speed.
- Fill all four benches with water until level of the sitting area is reached.
- Close the upper four plugs and seal them well with Teflon tape or semi-transparent silicone sealant.
- Check all benches for leakages, also inside the drawers.
- Water can be removed easily for moving the system to another location, just open the upper and lower plugs.
- Check all benches for leakages, also inside the drawers.
- Water can be removed easily for moving the system to another location, just open the upper and lower plugs.

CAUTION: Not filling the bench with sufficient water will make the structure less resistant to high wind speeds, which can result in harming persons or causing material damage!!!

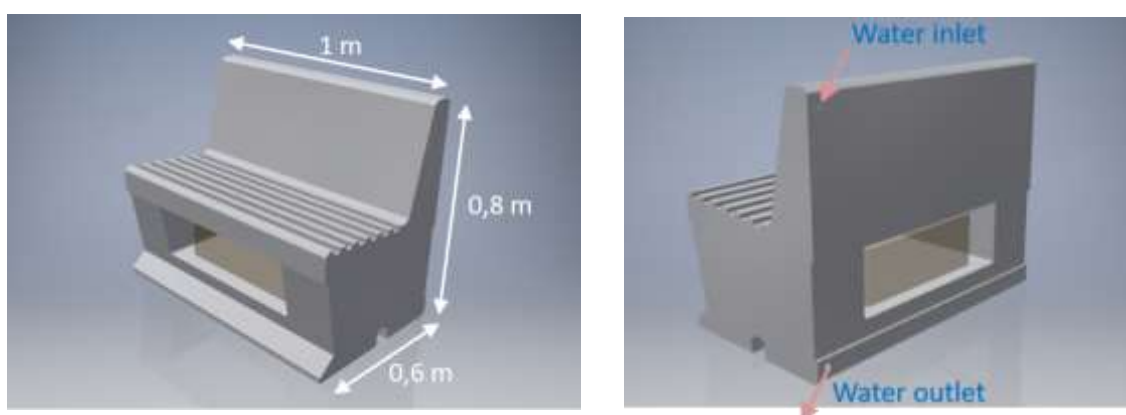


Figure 4: PV Port & Store benches (Water inlet & outlet position)

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For further information please see the manual or visit Servotech website:

www.servotech.com.

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