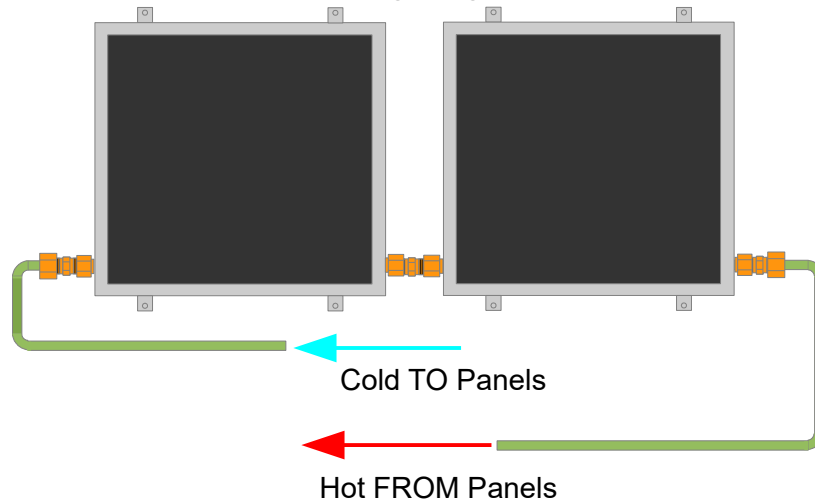




General Array Layout Sketch



Introduction

This document describes how to install SW or MH series panels. The SW and MH series panels are designed to be easily installed on any flat surface. They are equipped with 3/8" compression fittings so making reliable tight connections is easy and fast. No soldering or special tools are required.

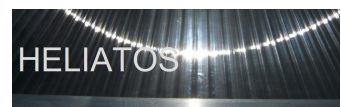
It is the installer's responsibility to assure that the panels themselves as well as the method and place of installation are in full compliance with all applicable regulations. Please consult the datasheet for the panels you are considering and assure that they are permissible and appropriate for your location.

Surface Preparation

In general, the surface you are planning to use for your installation should be fairly flat. Our panels are unique in that they can accommodate a base that is up to 1/4" uneven under each panel. Because of the special polycarbonate glazing they can flex a small amount without damage. The panels are equipped with four "feet". Each foot has a hole that is sized for a #8 deck screw. If you are mounting the panels to a surface that is suitable for using exterior deck screws, they are ready to install out of the box. However, if you require bigger bolts, you will have to enlarge the holes with a drill. Do not make the holes larger than 1/4", as the feet will not have sufficient strength to hold the panels down.

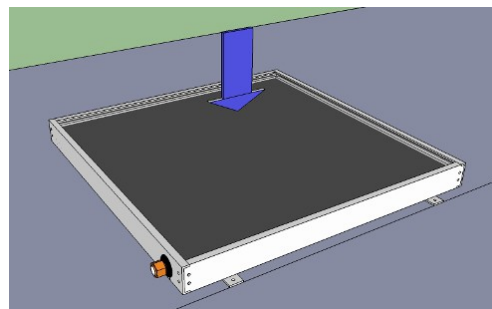
If you are using a rack to tilt your panels towards the sun, please make sure the feet all rest flat on the surfaces of the rack and all feet are securely fastened to the rack. Rack mounted panels can be subject to large wind forces.

SW-38 or MH-38 Panel Installation Instructions



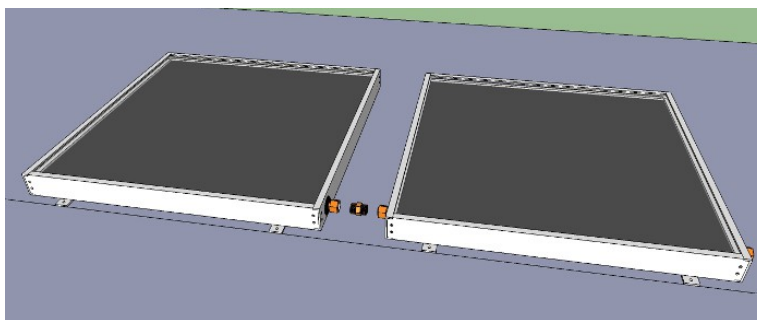
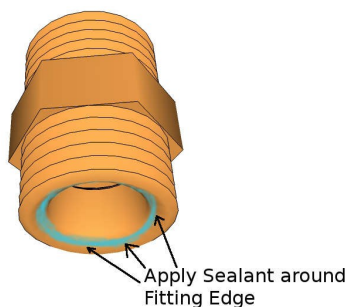
Step 1

Unpack the panels from the box and lay them on the installation surface next to each other. Each panel is connected to the next with a compression union. The compression nuts that are pre-installed onto the tube in the panels thread onto the two ends of these unions.

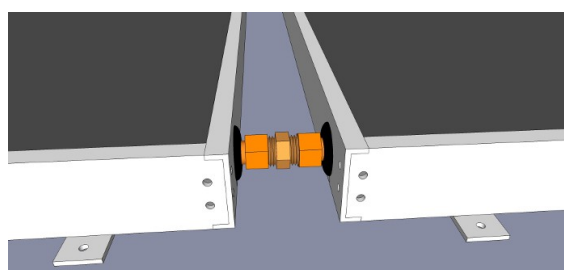
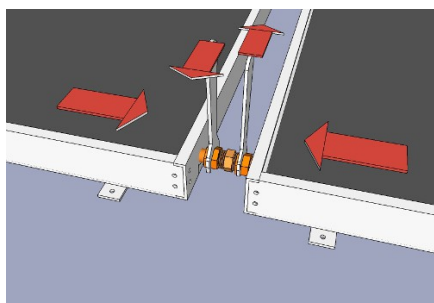


Step 2

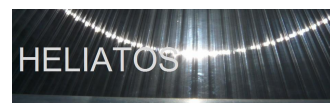
In this step you connect the panels to each other. The connection is formed by the included compression unions. First some sealant has to be applied to the union. You should put a ring of sealant around the inside lip of both sides of the union as shown in the illustration.



Start threading the union into the nuts on one panel and hand tighten only to allow some flexibility when lining up the panels. Bring the panels close to each other so the nuts on the second panel can be threaded onto the union, hand tighten. Slightly tighten the nuts on both sides. Not much torque is needed to form a tight seal. Once the system is pressurized you can tighten until all leaking stops.



Repeat steps 1 and 2 for all your panels

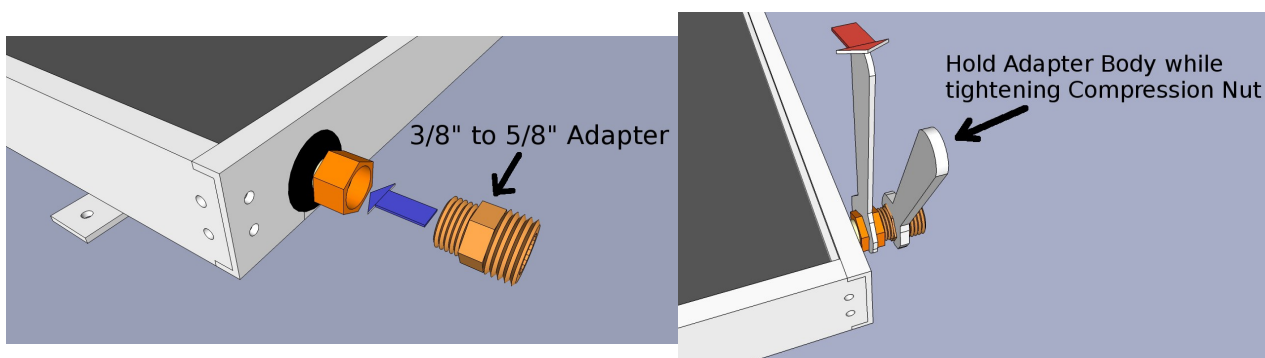


Step 3

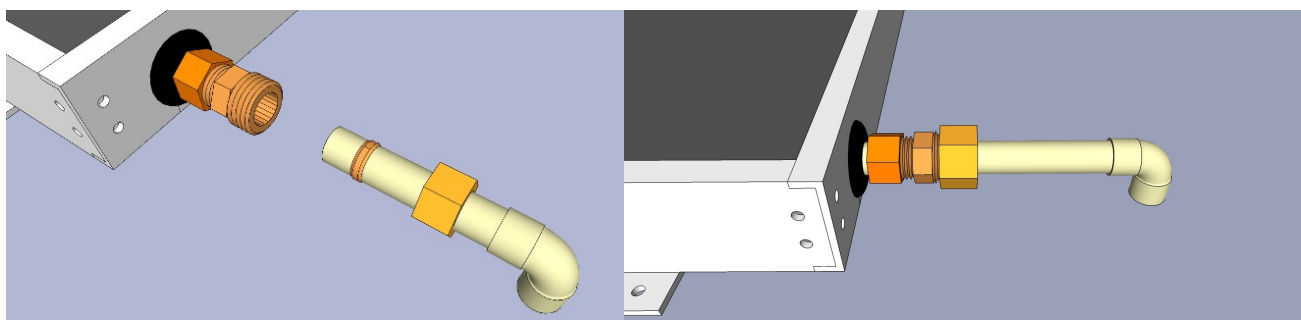
The direction of flow through the array of panels does not matter. It can go from left to right or the other way around.

You can use 1/2" or 3/8" pipe or tubing (copper, CTS CPVC, or 1/2" PEX). No soldering is required even if you are using copper pipe.

If you are using 1/2" pipe you will need two 3/8" to 5/8" compression adapters to connect the two ends of the array to the pipe. If you are using 3/8" tubing you can use 3/8" compression unions. First thread two 3/8" to 5/8" adapters (or 3/8" compression unions) onto the nuts on the two end panels (left and right) and hand tighten. Apply sealant as in step 2.

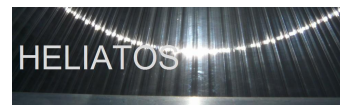


Next slide a compression nut onto both pipes followed by a brass ferrule (ring).



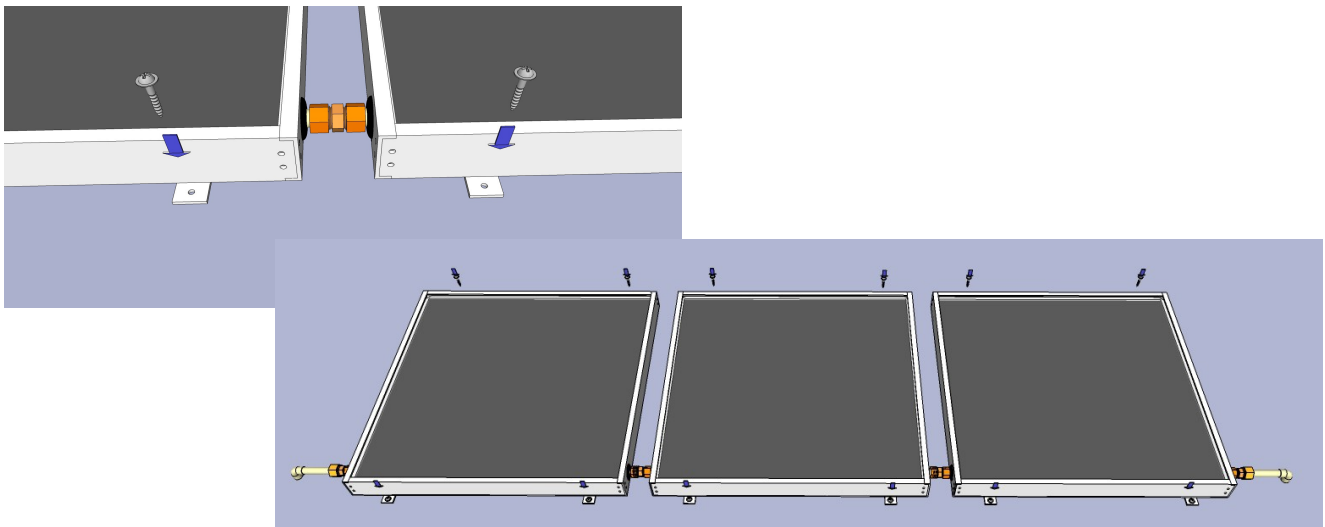
If you are using PEX insert a brass insert into the end of the PEX pipe. This insert gives the PEX the extra strength needed for a good seal with compression fittings. Finally push the pipes into the 5/8" side of the adapters (or into the 3/8" compression unions) and thread the compression nuts onto the adapter. At this time it is best to only tighten a little. Later when the system is pressurized the fittings can be tightened until all leaking stops.

SW-38 or MH-38 Panel Installation Instructions



Step 4

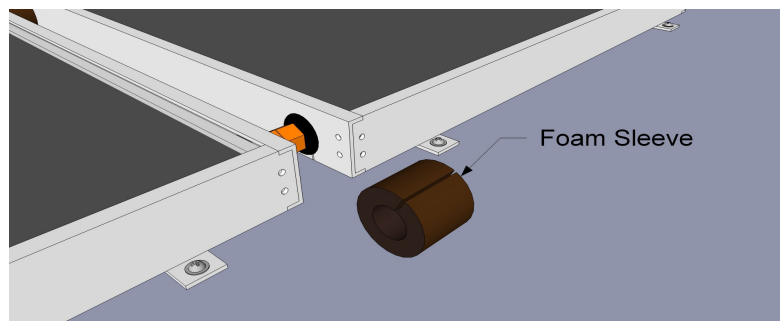
The panel array has to be securely tied down. This is especially true if it is mounted on a rack or on rails so that wind can catch the panels from below. We show a simple set of deck screws here, but depending what method you are planning to use you should follow the directions provided with your mounting hardware. Please remember that these panels are very light so that under no circumstances can you rely on their weight to hold them in place.



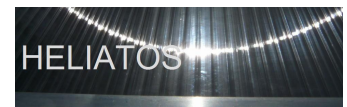
Mounting directly on a flat surface as well as on racks or rails is accomplished in a similar way. To achieve full wind loading capability it is important to attach all tabs securely to your mounting system.

Step 5

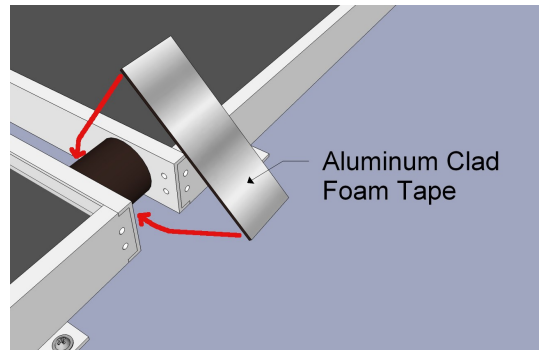
The exposed fittings and pipes have to be insulated next. This can be done by surrounding each joint with a foam or fiberglass sleeve. If you are using plastic foam a piece of aluminum adhesive tape should be wrapped around the foam sleeve to prevent rapid UV degradation.



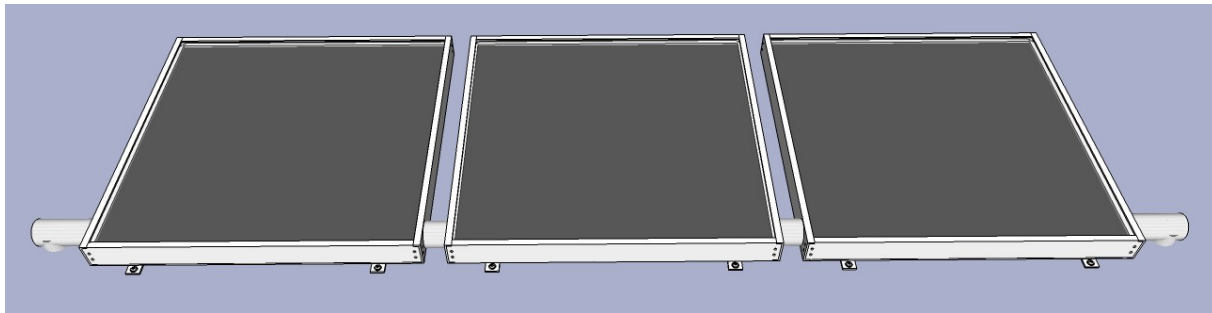
SW-38 or MH-38 Panel Installation Instructions



Install a foam sleeve over every fitting between panels as well as at the ends of the panel array.



Completed Array Installation



General Installation Hints

- No matter how warm the climate at your location the insulation of all exposed fittings / pipe is extremely important. Even small exposed areas will cause a lot of the solar heat to be lost. **The system WILL NOT FUNCTION PROPERLY until ALL the insulation is installed.**
- After installation and when re-starting the system after it was drained all air has to be bled out of the system. To do this you can slightly loosen one of the fittings near the highest point of the system and let the air escape. Once water starts to leak out re-tighten the fitting. Under normal operating conditions this should not have to be repeated.
- With any persistent problems please call (661)-7SOLAR7 (9am to 5pm pacific time) or email support@heliatos.com for tech-support.