DIRECT GROUND MOUNT GUIDELINES

Generally we prefer direct ground mounting in desert and semi desert regions on sloping ground. If the ground area is not sloped it is better to use a rack structure to avoid issues with water puddling.

We will need to support the weight of the system ensuring it does not shift down the hill. We can create a beam across the top using concrete as shown below. Alternatives include landscape logs or concrete blocks secured with rebar driven into the earth.

The top header assembly will hang from this top beam. Often we will interface between the collectors themselves and the support beam with a 1-3/8” OD galvanized steel pipe. This is chain link fence top rail available at the local building store (shown below).
Notice that there are two rows of headers. Each header pipe is joined to the next with a pvc coupling and a piece of pvc pipe cut 9-5/8” long. Assemble top headers manifolds to fin tubing first. Don’t assemble the headers first and then try to glue the fin tubing on. Follow the technique described in the full installation manual at www.h2otsun.com/manuals.html Staggering means one bank of solar panels on top of another bank of solar panels eliminating all the spaces between the one foot sections. This is important. This protects the black poly tarp from the sun. The headers pipes are styrene but they take to pvc cement the same way pvc does. No removable couplings are needed because there is almost a foot of pvc pipe on either side of any one header pipe. Be very careful of the rotation of the headers as you glue sections together.

We normally loop the outer headers to the interface bar with 12” loops of plastic coated stainless steel strap / stainless steel strap clamps. The inner row of headers can be secured to the interface bar using the same technique and longer plastic coated stainless steel strap.

The bottom headers must also be secured this way because we want to prevent the top headers from moving closer to the bottom headers. As the system contracts we are resisting that stress.

The entire area where the collector is going must be clear of rocks and sticks. We normally run a roller over the area to expose any abutments. Then cover the area with a
sheet of black poly. Use landscape logs along the sides over the black poly. Then run glue strips made of Powerstrip material side to side. Anchor these down with spikes used normally to spike weedcloth into the ground. The pictures below show a full 6 tube wide strip but normally we’d specify a 2 tube wide strip spaced every 6 feet. The solar collector will be glued to these glue strips with construction mastic as the last step.

There are many variations on this technique possible. Every situation is different. Fill any areas where black tarp is exposed with smooth gravel. Note as with any conventionally oriented bank of solar collectors you feed at the bottom and return diagonally opposite at the highest point. You need to tilt the system a little so the high point is the high point. See plumbing at www.h2otsun.com Note that two headers at the bottom and top mean you can plumb 2” to and from this system and separate to 2 pieces of 1.5” at the collector inlet and outlet. Follow all the same procedures under start up instructions and elsewhere according to the full system installation manual downloadable at www.h2otsun.com/manuals.html
Please call Hot Sun for a discussion at 858 683 0800 if you like.
Paint the white pipe and fittings with a brush and a roller. Do not use spray paint. Use any paint that isn’t spray paint.

Note that these systems are usually at pool level and sometimes below pool level. This means we have to be more concerned with pressure than normally. Check the collector pressure and if its more than 5 psi with solar off or on call Hot Sun for help. Pressure issues are covered at www.h2otsun.com/pools and in the full installation manual at www.h2otsun.com/manuals.html.