



## **Heat Bank Installation Guide**

### **Specifications:**

100-850 Gallon capacity  
48" Height  
R-30+ Wall Insulation  
Rugged Modular Steel construction  
Quick Assembly  
Liner rated for 180° F continuous, 200° F intermittent

### **Assembly Instructions:**

#### **Tools required:**

Tape measure  
Electric drill or screw gun  
Caulking gun

#### **Parts included:**

12 - Wall panels  
3 - Cover panels  
13 - Foam base pieces  
130 - Self-drilling hex head screws (bagged)  
1 - #3 Philips screw driver for cover screws (bagged)  
1 - 5/16" Hex head driver for tank assembly (bagged)  
10 - Fender washers (bagged)  
18 - Cover screws  
1 - Dip tube cap  
1 - Tank liner  
4 - Metal corner angles  
1 - Tube of neutral cure silicone caulk  
1 - Can of spray foam

**BEFORE YOU START:** Inspect all tank components for shipping damage prior to assembly. Check the liner for any shipping damage, and please contact us if you have a liner that has received damage during shipping.

Be sure to install the tank on a level floor. These tanks contain water. Water weighs 8.32 pounds per gallon. The floor under the tank must be stable, solid and level.

It is advisable to install the tank on an additional layer of foam insulation. An inch or two of Styrofoam or polyiso foam is fine, but keep in mind that the tank must be completely supported with this foam, and the foam must be at least as big as the base of the tank, if not a little larger.

This will help protect your tank from corrosion from a wet floor and increase the base insulation.

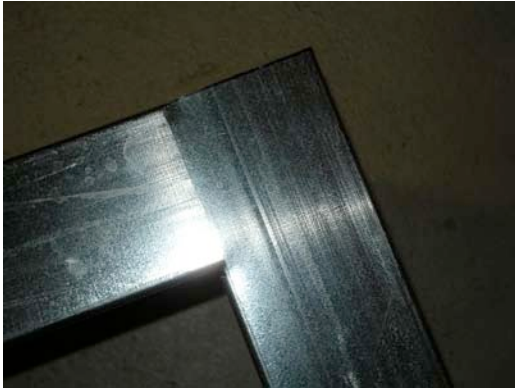


All wall segments have an additional inch of foam on the inside as a thermal break for the metal framing.

Take two wall segments and nest a solid end into the open end.



Push the segments together until the edges are squared up.



Fasten the corner with one self-drilling screw.



Place another wall section into the joined panels. Screw this wall panel to the joined panels after matching the edges up.

Fit the fourth wall panel into the last opening, check to see that the edges match up, and screw the panel into place.



Once the base layer is connected at each of the four corners, turn the layer over and place one screw in each of the bottom corners, as you did with the top corners. Be sure that all the corners are nested together properly before fastening.

Repeat this process, by assembling another four wall panels, again screwing them together on the top and bottom of the overlapped corners. Once the

second group is assembled, place this assembly on top of the first set of assembled wall segments. Make sure that the corner screws you install do not interfere with the next layer of corner screws.



Once again, repeat the assembly with the final four wall panels, the same as you have just done with the others. Place this layer on top of the other two.



You now have a stack of wall sections that is about 48" high.

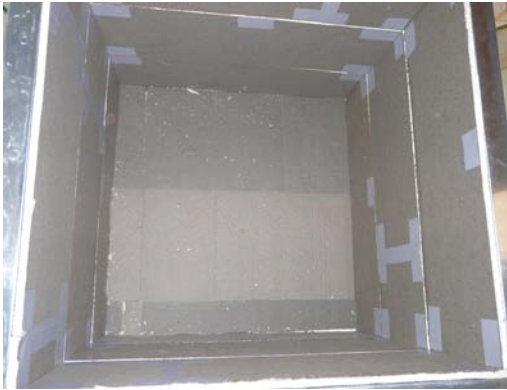
Check the tank to see if it is square. Measure the diagonal in both directions. You can kick the bottom corners to adjust the tank to make it square. Be sure that the edges are aligned.

Next, take one of the four sheet metal corners and hold it up against one of the corners of the wall panels. Push the corner tightly against the tank and install two screws in all the areas where the corner overlaps the steel of the wall panels, as illustrated below.



Install the other three corners.

Once the corners are installed, drop in the base foam insulation inside the tank. Most of the approximately 16" by 24" pieces of foam will fit in the base without needing to be trimmed, however you will need to cut some pieces to fit the last gaps inside the tank. Small gaps (less than 1/4") are okay, but anything more than that should be fitted with either the provided pieces of foam or with spray foam.



Base insulation installed.

While inside the tank, use the provided spray foam to fill the horizontal gaps between the wall panel layers. This will give the tank added strength. Wait until the foam cures, and if necessary, trim the spray foam flat.



The liner can now be installed.



The liner is made to fit the form of the tank. It will drop right in, once it is at room temperature and unfolded. The liner has a flange that will overlap the top edge of the tank.

You might have to get in the tank to install the liner properly. Please make sure your shoes are clean, or better yet, remove your shoes before getting into the tank.

The liner must be fit against the walls and base of the tank, especially in the corners.

The liner is to be fastened to the top metal flange of the tank with a screw and washer. **DO NOT PLACE FASTENERS NEAR THE WATER PORTION OF THE TANK** – this will void your warranty!! Fasteners should be installed as far away from the water as possible, nearer to the outside edge of the tank. Install one screw with a washer at each corner and one in the middle of each wall.

If you need to install any heat sensors, install them now, prior to filling the tank. They can be placed between the liner and the wall panels. There must be no sharp edges on the sensor, otherwise your warranty will be voided.

Once the liner is screwed into place and all sensors (if any) are installed, you may now begin to fill the tank.

The tank must be filled slowly, initially. You can tug on the liner if necessary to help fit it into the base corners.



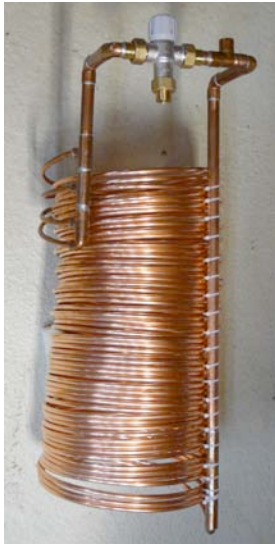
**STOP FILLING THE TANK IF THE LINER IS NOT FITTING PROPERLY!** Filling a tank when the liner is not fitted properly will NOT make the liner self-adjust. You **MUST** adjust it to fit. It is important to see that it is in the proper position, fitting into all corners, before filling that tank entirely.

Fill the tank until it is within 4-6 inches of the top.

You can place the heat exchangers and any other plumbing that goes into the tank before or after you fill it.

**It is extremely important that no sharp edges from the heat exchangers or the ties that hold them are rubbing on the liner. Please adjust as needed. The liner is very strong, but please be careful!**

All heat exchangers are designed to hang on the side on the tank, with no further fastening required. Heat exchangers must be installed on the same side, or on opposite sides.



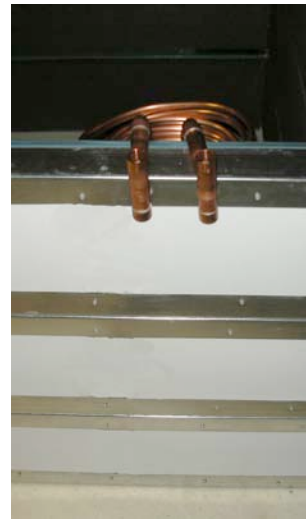
Domestic water heat exchanger



Domestic water exchanger installed



Space heat exchanger



Space heat exchanger also simply hangs on side

Almost done! The last step is the installation of the cover. The cover is built in three panels and is placed on the top of the tank.

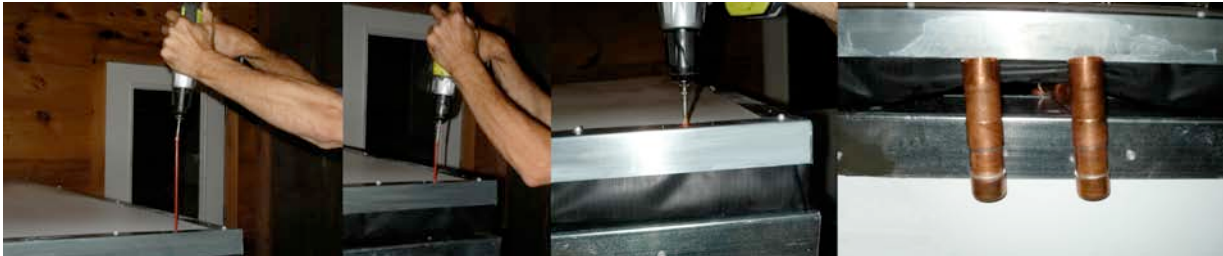


Before securing the covers, make certain that you have the cover panel with the 1" wide foam gasket on both long sides in the center of the tank between the two outer cover panels (both of the outer cover panels also have the 1" wide foam gasket, but only on one long side of the panel). The gasket seals the gap

between the three covers. It must be compressed when the three covers are installed.

There are cutout areas on each cover panel, two on the center cover panel (one on each end) and one on each of the outer cover panels (on one end only). These are in the center of the short edge the cover panels and feel spongy. These areas are insulated, but use a flexible foam insert that is 6" x 12" to accommodate either the domestic hot water and space heat exchangers. A heat exchanger must be placed in the center of the short edge of the cover panel. The heat exchanger can be carefully slid from side to side until it is centered.

The flexible foam insert areas on each cover will compress around the heat exchanger pipes once the cover is screwed down.



Use the long screws to fasten the cover to the top through the starter holes in the cover. Once the cover is screwed in place, you can caulk the cover to the liner at the perimeter. After the tank is operational, check for vapor leaks. **Use the silicone caulk to seal any gaps. You must double check the sealing of the tank cover once you are done.**

The final step is to caulk the horizontal gaps on the front of the tank, in between the tank panels. A bead of silicone caulk completes the tank assembly.



This tank requires minimal maintenance. You should check the water level monthly during the heating season and top off as required. Use the dip tube in the cover to check the level with a dowel stick. Keep the tube covered with the enclosed cap.



We do not recommend use of corrodible material like steel or iron in our tanks. Although the tank can be treated with corrosion inhibitors, these ferrous materials can tend to rust at the water/air interface and corrosion products might foul pumps if tank water is being circulated for any purpose.

**KEEP PEOPLE AND THINGS OFF THE COVER.** This is not a storage area, and although the cover is very strong, extra weight on the cover can damage your tank, belongings, or loved ones and void your warranty!



Please affix safety/serial number labels on all four sides of the tank and on the cover.

**Notes:**

All American Solartech heat exchangers are pressure tested prior to shipping.

Heat exchangers should be inspected carefully for shipping damage prior to installation.

All liners are tested prior to shipping. Since the liners are clear, they are quite easy to inspect for any problems that might arise from shipping. Please inspect them while handling.

It is prudent to remove your shoes if you are inside the tank while positioning the liner. This practice holds true for any lined tank.

The liner is very rugged, but if you accidentally damage the liner, it is field repairable. Please contact us.

If you have any questions, please feel free to call your rep at BioHeatUSA or American Solartech at 207-548-2148.