



545 Morley Potsdam Rd., Canton, NY 13617

Email: info@ecoheatonline.com

315-386-2878 Fax 315-386-3009

820 Gallon Heat Bank Installation Manual

Specifications:

820 Gallon Capacity
76" x 76" x 54"
R-30+ Wall Insulation
Rugged Modular Steel Construction
Quick Assembly
Liner rated for 200°F continuous

You need:

Tape measure
Electric drill or screw gun
Caulking gun
Hand saw
Additional foam or plastic barrier for underneath the tank
Work gloves (optional, but recommended)

Parts included:

12 - Wall panels
2 - Cover panels
Thick (3 1/2" - 4") various sized interior foam base pieces (usually packaged between cover panels)
4 - Steel corners
1 – Liner/Hardware Kit containing:
130 - Self-drilling hex head screws
2 - Screw drivers (1-5/16" hex head screw driver for tank assembly, and either: 1-1/4" hex head screw driver **or** 1 - #3 Philips screw driver for securing the cover)
10 - Fender washers
18 - Cover screws
1 - Dip tube cap
1 - Tank liner
3 - Tubes of neutral cure silicone caulk
1 - Can of spray foam

PLEASE READ THIS ENTIRE MANUAL BEFORE BEGINNING THE INSTALLATION PROCESS!

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.

The tank must not be on bare concrete or dirt floor! The tank MUST be installed on a layer of foam insulation or at the very least, plastic sheeting. 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. FAILURE TO DO THIS WILL VOID YOUR WARRANTY. This will help protect your tank from corrosion from a wet floor and increase the base insulation.



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



Push the panels together until the edges are squared up.



Fasten the corner with one self-drilling screw.



Place another wall panel into the joined section. 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 are square, 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.

*It is advisable to install any heat sensors now, before attaching the metal corners and installing the liner. Sensors may be placed between any two tiers of panels. There must be no sharp edges on the sensors that could potentially damage the liner. Cover any sensors with duct tape to protect the liner. **Your warranty will be voided if sensors are installed in a way that might cause liner damage.**

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, you can now install the base foam insulation **inside** the base of the tank. In most cases, the interior base foam ships between the cover panels. You will have to get inside the tank and cut and fit some of the foam pieces to fit. **REMOVE YOUR FOOTWEAR BEFORE GETTING INSIDE OF THE TANK! Sharp stones tracked into the base of the tank may rub against the liner and cause a failure.** 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 any horizontal and vertical 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. Once the liner is at room temperature, carefully unwrapped and unfolded, it will drop right into the tank. The liner has a flange that will overlap the top edge of the tank.



You will have to get inside of tank to install the liner properly. **Please remove your shoes before getting into the tank, as dirt tracked brought into the tank on shoes can damage the liner.**

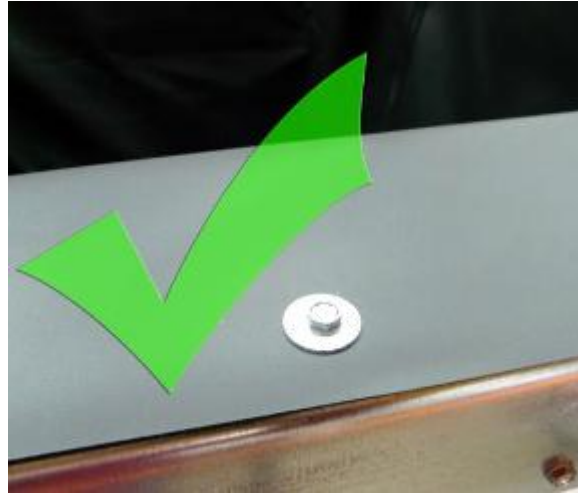
The liner must be fit against the walls and base of the tank, **especially in the corners**. The liner will not adjust itself when you start to fill it, so please be sure to nest the corners of the liner into the corners of the tank with your feet as best you can.



The outer most edge of the liner should be lined up with the outer edge to the top panel. The liner should not be overhanging the edge of the tank shell. 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.



Steel fasteners too close to the water.



Just right!

Once the liner is screwed into place you may now begin to fill the tank.

With an inch or so of water in the tank, you can tug on the liner if necessary to help fit it into the base corners. The liners are made over sized. Wrinkles of excess material are not a problem. The liners are very strong.



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.

Once you are sure the liner is fitting correctly, fill the tank with water until it is within 4-6 inches of the top.

You can place the heat exchangers and buffer strips or any other plumbing that goes into the tank before or after you fill it, although they are easier to install in an empty tank.

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.



Domestic hot water heat exchanger



DHW heat exchanger installed



Space heat exchanger



Space heat exchanger also simply hangs on side

When installing any heat exchanger in one of our tanks, it is wise to use unions for simple removal, in case the heat exchangers or tank ever require service. This will expedite any need to access the tank or hardware in the tank

Almost done! The last step is the installation of the cover. The 820 Gallon Heat Bank cover is built in two panels that are placed on top of the tank. Each panel is 38" wide by 76" long.



It is wise to place the covers on the tank as a "dry fit" before securing them to the tank. Make sure that you have the edge of the cover panels with the 1" wide foam gasketing tape on it facing one another, towards the inside of the tank. The gasket seals the gap between the covers. It must be compressed when the two covers are installed.

There are cutout areas on each end of the two cover panels. These are in the center of the short sides of 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, but you must be certain that the heat exchangers' pipes are nesting beneath the flexible foam in the covers before securing the cover panels to the tank.

Once you are certain that you have the cover panels and heat exchangers situated correctly, remove them.

Make sure that the liner flange is dry and clean. This is important to ensure a good bond is formed between the caulk and the liner.



Apply the supplied silicone caulk to the top flange of the liner, where it rests on the top panel of the tank.



A continuous bead of caulk that is about 3/8" in diameter should suffice. Since we do not want the fasteners that hold the liner in place to rust, this bead should be on the **inside** of any metal fasteners that are holding the liner in place—closer to the water. A good guideline is to place the caulk about 1.5" out from the inside edge of the liner.



Once the caulk is installed, place the first cover on the tank and screw it down to the top panel of the tank with the 6" long fasteners. There are starter holes drilled in each cover panel. Place the second cover panel on the tank and butt it to the previous one, so the gasket foam compresses in between the panels, and screw it down.



Wherever there is a heat exchanger installed, the pipes pass to the outside of the tank via flexible foam that is inside the cover panel, underneath the vapor barrier. **The voids that are formed where the flexible foam has compressed over the heat exchanger's pipes MUST be COMPLETELY caulked. You MUST also caulk any gaps between where the heat exchanger comes in contact with the liner.**



A well-sealed cover and heat exchanger

The caulk that is sealing the cover to the liner must be in touch with any caulk that is sealing around the heat exchanger. THE COVERS MUST BE COMPLETELY SEALED OR YOU WILL VOID YOUR WARRANTY.

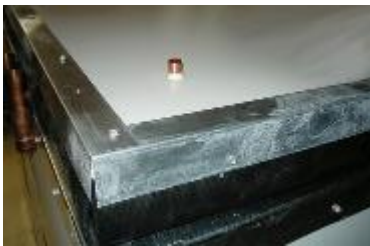
Install both covers, making sure to seal any gaps where water vapor might leak out.

Once the system is up to temperature, check the tank for any water vapor leaks. If the tank's temperature is above 130°F, you should be able to see and feel escaping hot water vapor. **If you discover any leaks, dry off the surface surrounding the leak and seal the gap with more silicone caulk.**

This follow up step is also critical for proper energy savings and tank performance.



Affix the safety/serial number labels on all four sides of the tank and on the cover. 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 will rust. Corrosion products might foul pumps if tank water is being circulated for any purpose. We will not warranty any tank that shows evidence of corrison.

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!



Notes:

All 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. They are quite easy to inspect for any problems that might arise from shipping. Please inspect them while handling and installing.

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.