



**WELCOMES YOU TO DOING EVERYTHING ON THE *SAPLING EVERYTHING GRILL* with
*EVAPORATOR PAN***

The Vermont Evaporator Company's *Sapling Everything Grill* is designed for the outdoor cooking enthusiast looking for a simple, authentic, wood-fired experience, as well as durability in manufacture, multifunctionality and curb appeal. Congratulations on your new acquisition! You are about to open the door to the tasty world of wood-fired grilling, smoking and baking. Trust us, once you've been in that world, you aren't going to want to come back!

But there's more! You've purchased a grill that can also make maple syrup. Despite the *Sapling*'s simple design, portability and multifunctionality, it still has the advanced features of more expensive evaporators. That is mostly due to the design of the *Sapling Evaporator Pan* itself. The *Sapling Evaporator Pan* is a continuous-flow pan, meaning that sap is channeled around the pan using dividers to create a sugar gradient. This configuration allows syrup to be drawn off and sap to be added without emptying the pan. The continuous flow is more efficient than other DIY methods, which means more syrup on more pancakes in less time!

With proper operation and care, you will get many years of enjoyment from your *Sapling*. Here's how to get started.

Wait! Before you start, be smart. You're dealing with hot temperatures and a live fire so:

- **DO NOT** operate your *Sapling* while intoxicated or under the influence of alcohol or drugs.
- **DO NOT** install your *Sapling* near combustible materials.
- **DO NOT** install your *Sapling* indoors; **DO NOT** install in a garage, barn or other outbuilding unless you know how to do so safely with proper ventilation and fire protection.
- **DO NOT** attempt to move your *Sapling* while the unit is hot.
- **DO NOT** start your *Sapling* as a grill OR as an evaporator without an insulating layer of sand or ash in the

bottom of the barrel. (A couple of inches should do!) Failure to place an insulating layer in the bottom of your barrel can result in coals burning right through the bottom of your barrel.

● **DO NOT** start or run your *Sapling* as an evaporator without sap or other fluid in the boiling pan; **DO NOT** allow your *Sapling* to cool without sap or other fluid in the pan. You can quickly destroy your pan by doing so.

GRILLING, SMOKING AND BAKING

The first step is assembling your *Sapling* barrel (aka, the *Sapling Firebox*).

What you will need besides your *Sapling*:

1. vegetable or olive oil;
2. an electric drill with a 3/32" bit (optional);
3. a Phillips screwdriver or power drill with a Phillips bit.

Remove all parts from inside the big box. Inside the big box, you will have:

- One (1) *Sapling* barrel;
 - one (1) *Sapling Evaporator Pan*
 - one (1) *Sapling Stack Flange*;
 - one (1) *Sapling Stack Elbow*;
 - one (1) *Sapling Stack Bracket*;
 - two (2) pieces of *Sapling Stove Pipe*;
 - one (1) door;
 - one (1) door frame;
 - two (2) leg sets; and
 - a bag of hardware, containing: seven (7) self-drilling screws, two (2) clevis pins, eight (8) each: bolts, nuts, and lock washers for the legs, sixteen (16) each: bolts, nuts and lock washers for the door frame, one (1) pour-off valve, and a smidge of pipe tape.
1. First, set aside the *Sapling Evaporator Pan*, the pour-off valve, and the smidge of pipe tape. Then, assemble the leg sets onto the barrel using the predrilled holes and the nuts, bolts and lock washers.

HINT: The easiest way to assemble the legs is as follows. (If you have already installed the door, uninstall it. We're going upside down!) Orient your *Sapling* "bottom-up," with the cavity facing down. (It helps to have a skinny table or workbench or pair of sawhorses to do this while steadying the unit.) Align the holes in each leg set (so that the feet face the rear of the machine) on the corresponding holes on the barrel and push a bolt through each pair of holes. When all bolts have been inserted, reorient the unit exit-hole down (door-side up) with the cavity facing you. Install the lock washers and nuts and tighten!

2. Next, assemble the door frame onto the barrel using the nut and bolt assemblies provided, making sure that the catch for the door latch is on the left and the hinge pieces on the right.
3. Next, assemble the door on the frame by carefully aligning the holes on the door hinge piece just above the holes on the frame hinge piece. Then, gently tap the clevis pins in place to secure the door to the frame.
4. Center the *Sapling Stack Flange* to the exit hole in the back of the unit. Mark the location of the four predrilled holes in the flange on the back of the barrel with pencil, chalk or a nail. Predrill those holes. Using four of the screws provided, affix the flange to the back of the barrel. (The screws are self-tapping, and, when enough pressure is applied, will eventually tap into the barrel without the need for drilling holes. However, we recommend predrilling the holes for a smooth assembly.)
5. Slide the *Sapling Stack Elbow* on the flange affixed to the back of the barrel. Adjust the elbow so that the exit of the elbow is pointed straight up and the elbow is inserted into the flange as far as possible. Screw the elbow to the flange by driving one self-tapping screw straight down through the place where the elbow and flange overlap.
6. Looking at your *Sapling* from the stack-end (the back), position the stack bracket so that the bent end is flush with the back of the barrel, and the straight end is flush with the elbow above the elbow's uppermost adjustable crease (see below). Mark the position of the predrilled hole on the back of the barrel with pencil, chalk or nail. Predrill a hole in the barrel. Using one of the self-tapping screws provided, affix the stack stabilization bracket to the barrel. Use the last screw to affix the bracket to the side of the elbow (this metal is thinner than the barrel and doesn't need to be predrilled).



7. Fit a piece of *Sapling Stove Pipe* onto the elbow exit.
8. Fit the second piece of pipe onto the first piece of pipe.
9. Place a two-inch layer of sand and/or ashes in the bottom of your barrel. **CAUTION:** failure to place an insulating layer in the bottom of your barrel can result in catastrophic failure – the fire may burn right through your barrel! If you are insulating your barrel with *Sapling Firebrick* or the like, you may choose to skip this step or go belt & suspenders. Up to you!

10. Coat the exterior of the barrel with a thin layer of vegetable or olive oil (apply with a paper-towel or rag).
Voila! The *Sapling Firebox*, which forms the base of each of your *Sapling*'s four functions: grilling, smoking, baking and sugaring.

Next, open the small box and follow the instructions on setting up the grilling, smoking and baking functions! When you are done, you will have a machine that can do everything: sugar, grill, smoke and bake!

SUGARING

Finally, when it's time to make maple syrup on your *Sapling*, a few extra steps are in order.

11. Find your *Sapling Evaporator Pan*, your pour-off valve, and your smidge of pipe tape.
12. Place the pan on the unit so that the draw-off is on the front of the left side, as you look at the unit from the front.
13. Starting one thread back from the exit, wrap your bit of pipe tape around the draw-off to the right and wind around until completely used. Screw the ball valve on over the pipe tape. You're done!

Preparing Your *Sapling* for Use as an Evaporator:

1. Remove the pan.
2. Using shims and a two- or four-foot level, level your *Sapling* front to back and side to side.
3. Place a two-inch layer of sand and/or ashes in the bottom of your barrel (see above). **REMEMBER:** failure to place an insulating layer in the bottom of your barrel can result in catastrophic failure – the fire may burn right through your barrel!
4. If you have not already done so, coat the exterior of the barrel with a thin layer of vegetable or olive oil (apply with a paper-towel or rag).
5. Replace the pan. Using your level, confirm that your pan is level front to back and side to side.
6. Before you boil your first sap, you'll want to remove any residual impurities from the pan. Here's how:

Prepare a solution of 10 gallons of water combined with 2 tablespoons of baking soda.

Fill the pan to 2 or 3 inches with the solution.

Start by building a small fire in the barrel and gradually build to a larger fire. **NOTE:** We **DO NOT** recommend heating your *Sapling* to over 600 degrees (as measured just above the elbow at the exit pipe) at any time. You may want to use a magnetic stove thermometer such as the *Sapling Stack Thermometer* to track your *Sapling*'s temperature throughout operation.

Boil the solution for approximately 30 minutes, making sure the solution in the pan remains at approximately the 2-or 3-inch level by adding more solution, as needed.

7. While boiling, check your equipment:

Check to see that there are no leaks at the fittings in the pan.

Assuming you have an even fire underneath, check to see that the pan is boiling evenly.

Open the valve – ensure it works properly.

Check to see that your *Sapling* is drafting and venting correctly (that the fire has adequate air intake and that smoke is generally only coming out through the stack).

8. Allow the unit to cool and then drain the pan.

9. Rinse the inside of the pan thoroughly with clean water.

NOTE: It's always best to use non-chlorinated water if possible (chlorinated water can eventually cause corrosion of the pan).

Operating Your *Sapling* Evaporator!

CAUTION: NEVER, EVER, EVER fire the *Sapling* without liquid in the pan (or allow it to cool without liquid). Otherwise, the operation of the unit is relatively simple! Basically, you add sap at one location and it travels around the pan, becoming denser as it evaporates, until it gets to the valve. Here are the details:

1. Add 2 inches of sap in the pan. This is about 5 gallons of sap.
2. Start your fire.
3. Get the sap boiling.
4. After the sap has boiled down to half of its volume, gradually add more sap at the back, right corner of the pan until the sap level is back up to 2 inches. Continue to add sap at this location gradually as needed to keep the level at 2 inches. Do this for several hours.
5. There are a number of ways to tell if your syrup is “done.” The most sophisticated is to use an instrument called a syrup hydrometer to measure the sugar content of your boil. Another is to measure temperature: syrup boils at about 7 degrees F above the boiling point of water (so, approximately 219 degrees F). Therefore, when the temperature of the liquid close to the exit valve measures 219 degrees F, you can draw off syrup. The syrup should have an amber color and have the consistency of . . . syrup.
6. Get a clean container and place it under the valve exit.
7. Open the valve and watch your exit temperature.

8. If possible, simultaneously add fresh sap at the introduction location. If not possible, add some before you draw off and some more after.
9. Continue to draw off syrup until your exit temperature drops below 219°. You will likely get less than a pint of finished syrup per draw.
10. You may also choose to draw off a bit early into another pot or pan and “finish” on, for example, a propane burner outside, or on the kitchen stove inside, where it may be easier to control and monitor the temperature. **Do not feel badly about choosing to go this route, especially at the beginning. Finishing on the *Sapling* requires practice and skill. You will get better at this every year!**
11. At the end of your boiling day, draw off about a gallon of the sap closest to being syrup. You can finish it as described above, or use it the next time you boil for a faster startup.
12. Monitor your evaporator until the boiling stops and the fire has died out.

Some Tips:

Don't add too much new sap at one time and try to maintain a constant boil. This will result in a more efficient process and lighter syrup.

To obtain high, even heat, use dry, mixed wood (hardwoods and softwoods) that is thinly split (like the thickest part of a baseball bat).

Load often with small amounts of wood to maintain a consistent level of heat.

Maintaining your *Sapling*

Your *Sapling* will have a long life. Just how long (and how beautiful a life it is) will depend on how you care for it! The best practice is to clean out the ash and oil the inside of your barrel with vegetable or olive oil when not in use for extended periods of time, and, unless your *Sapling* can be stored in a garage or barn, you should cover it when not in use. Consider purchasing the *Sapling Grill Cover* for this purpose. If water gets in your barrel, be sure to dump it out, dry it out, and apply another layer of oil to discourage rust.

Expansion and contraction caused by heating, cooling and exposure to the elements may eventually cause some cracking, flaking or thinning in the paint on your *Sapling*. If you notice this, after the barrel has cooled, sand with 100 grit sandpaper and repaint with *Sapling Flat Black Paint*, or the equivalent.

Consider purchasing the *Sapling Care Kit*, which includes everything you need for maintaining the *Sapling* and all its accessories!



WELCOMES YOU TO DOING EVERYTHING. . . Continued!

The box you've just opened allows you to use your new Sapling as a Grill, Smoker and Wood-Fired Pizza Oven. Yow! Here's what you'll find in this box:

1. *Sapling Grill Lid*
2. *Sapling Damper*
3. *Sapling Grill Grates*
4. *Sapling Pizza Stone*
5. *Sapling Efficiency Baffle*

The *Sapling Grill Grates*, *Sapling Pizza Stone* and *Sapling Efficiency Baffle* require no assembly. Find those pieces and set them aside. The *Sapling Damper* and *Sapling Grill Lid* require some assembly and installation. Follow the directions below to install your *Sapling Damper* and *Sapling Grill Lid*.

Installing the *Sapling Damper*

The *Sapling Damper* installs into one of your stove pipes to give you better control over your heat while cooking. (Once installed, the damper can remain in the pipe for all of the *Sapling's* functions, including sugaring.)

You will need the following tools to install the *Sapling Damper*:

1. One of the *Sapling Stove Pipe* pieces that came in the big box! You will be installing the damper on the bottom end of the bottom length of pipe – the length installed closest to the elbow on your *Sapling*;
2. The *Sapling Damper*;
3. A drill with a quarter-inch (0.25") bit suitable for metal;
4. A marker;
5. A ruler; and
6. A T-square (optional).

Step 1: Align the Parts

Align the stove pipe with the end installed closest to the elbow facing UP as in the photo below on the left. Place the damper in the center of the pipe as shown in the photo below on the right.



Step 2: Measure and Mark

With the damper aligned in the center of the pipe, measure down from the top of the pipe at both sides of the pivot arm three inches (3") and make a mark as shown in the two photos that follow. Be sure the ruler is straight in line with the smoke pipe (use a T-square if necessary).



Step 3: Drill

Drill through the smoke pipe wall at each of the two marks as shown on the next page.



Step 4: Disassemble the Damper for Installation

Remove the pivot arm from the damper. The pivot arm is held to the cast iron damper by the spring on the end of the arm and a small bend in the pivot arm. By holding the pivot arm handle and pressing in on the pivot arm while holding the cast iron damper with your other hand, you can then rotate the arm and remove it from the damper.



Step 5: Assemble the Damper into the Pipe

Place the damper into the smoke pipe and pass the pivot arm through the two holes drilled in Step 3, above. Lock the pivot arm into the cast iron damper plate using the opposite rotation used to disassemble the unit. Confirm that the small bend in the pivot arm is locked into the iron damper. Test the operation of the damper by moving it 180-degrees in the smoke pipe and note alignment of the damper to the handle for ease of operation. The final installation, as seen from above, is shown in the picture on the next page.



Assembling the *Sapling Grill Lid*

The *Sapling Grill Lid* is essential for smoking and baking and can be handy for grilling as well. You will need to assemble the handle – handmade of locally harvested hardwood – to your new lid. Remove the lid, handle, and bag of hardware from the box. Insert the carriage bolts into the handle, and, taking care to pad the underside of the handle against a hard surface, hammer the heads of the bolts into the wood. Place the carriage bolt covers (spacers) over each bolt. Align the bolts with the pre-drilled holes in the lid and affix the handle to the lid using the lock washers and nuts.

Congratulations! You’ve made it through assembly.

Grilling on the *Sapling*

Take your *Sapling Grill Grates* out of their box; place the three grill grates on the barrel opening. Light a small charcoal or wood fire in your barrel directly under where you will be grilling, and let the grates heat up for a bit. Grill away! But don’t use starter fluid or charcoal infused with starter fluid. (It tastes bad!).

Smoking on the *Sapling*

Time to smoke! With your *Sapling*, you can smoke all sorts of foods – like meats, potatoes, corn, and apple pie! Follow these directions to get up and running in no time.

Get some Wood Chunks/Chips and Water Pans: Wood chunks and chips can be found at hardware and agricultural stores - or even your own backyard. There are even wine barrel chips sold at fancy food stores. We have a few apple trees on our property and as we prune them each year, we save the trimmings in a bag to use for smoking.

Typically, you’ll want to have a water pan or two in your smoker to add moisture (especially for long, slow smokes). Tin foil pans work great for this – grab a few low-profile pans at your local supermarket.

Soak the Wood: When we are going to start up our *Sapling* for smoking, we usually start the day by soaking wood chunks (better, in our opinion) or chips (ok in a pinch) in a bucket of water. For best results, soak the chunks or chips for at least one hour – longer is better.

Position Your *Sapling Smoker*: Position your *Sapling* on a level, heatproof surface away from buildings.

Insert the *Sapling Efficiency Baffle*: The *Sapling Efficiency Baffle* allows you to smoke your food with indirect heat, thus helping you smoke slow with a low temperature. Handily, it also holds your water pan(s). Insert your baffle into the barrel opening so that it is as far forward (toward the door and away from the smokestack) in your *Sapling* as you can get it.

Fill Your Water Pans: Including water while you smoke adds moisture to the smoking process so meats come out flavorful and tender. Be sure to keep the water pan full. For large roasts and turkeys, you may have to add water to the pan a couple of times while smoking. Check the pan each time you add charcoal. Note: When smoking cheese, add ice to the water pan so the cheese doesn't melt above it.

Install your *Sapling Grill Grates*: Place your grill grates over the baffle and water pans.



Food: Place food in the center of the grate above the baffle, directly above the water pan(s). Remember that smoke and heat escape every time you peek into the grill, so add 15 minutes to your cooking time for each peek (more if you are smoking in cold weather). Boneless meats, such as beef brisket and pork shoulder, will shrink considerably during smoke-cooking, unless they have a heavy layering of fat. Simply cut off the fat before serving. Add more cooking time for wind, cold, high altitudes, and full moons (kidding).



Preparing to Smoke: To prepare to smoke, heap charcoal in the front of the *Sapling*, ignite the coals, and when coals have a light coating of grey ash, spread them out a bit in a circular pattern. **IMPORTANT:** Do not place coals directly on the bottom of the *Sapling* – put a layer of sand or ash first!

Place soaked wood on the coals through the door on the front of the *Sapling*. Close the front door vent and close the damper. Place food on the cooking grate. Arrange food in a single layer leaving space for smoke to circulate around each piece. Every half hour or so, add 6 to 12 briquettes and 4 to 8 wood chunks and replenish water and seasonings.

If you are heating and smoking with wood (this is generally considered advanced smoking), use hardwoods (oak, maple, cherry) as your heat source as it will burn slower and at a lower temperature than soft wood (e.g., pine, birch, etc.). You'll want to get your hardwoods down to a bed of coals before putting on your soaked wood. Add heating wood and soaked wood as needed and replenish water and seasonings.

Extra Tips:

- For most smoking (although it will vary by recipe), keep the temperature, as measured on the side of the *Sapling*, at about 250 to 300 degrees Fahrenheit – the lower the better.
- Use a meat thermometer to ensure your food is cooked properly.
- Use tongs and protective hand wear when handling coals, soaked wood, water pans, etc.
- Don't use charcoal infused with starter fluid (it tastes bad!).
- Everything can be smoked! Just give it a try (it's almost guaranteed to taste like bacon - and there's really nothing wrong with that!)

Baking on the *Sapling*

Place the pizza stone on your *Sapling Grill Grates*, and light a charcoal or wood fire in your barrel directly under the stone. Cover with your *Sapling Grill Lid*. Let your unit get up to the desired temperature. Bake away!

A Note on the Grill Lid

Your *Sapling Grill Lid* is made of a heavy gauge of aluminum so that it is lightweight as well as durable. We choose heavy gauge aluminum for sturdiness and durability and to keep the weight reasonable for easy handling. But aluminum can't be non-toxically galvanized and doesn't take buffing or polish well. It will scratch. Aluminum also “moves” when heated and your lid may warp slightly in use. Don't let it bother you! The grilling, smoking and baking surface is not designed to be sealed, and every piece is designed to last for a LONG time with a bit of give.

Reminder: Maintenance

The best practice is to clean out the ash and oil the inside of your barrel with vegetable or olive oil when not in use for extended periods of time, and, unless your *Sapling* can be stored in a garage or barn, you should cover it when not in use. Consider purchasing the *Sapling Grill Cover* for this purpose. If water gets in your barrel, be sure to dump it out, dry it out, and apply another layer of oil to discourage rust.

Expansion and contraction caused by heating, cooling and exposure to the elements may eventually cause some cracking, flaking or thinning in the paint on your *Sapling*. If you notice this, after the barrel has cooled, sand the area with 100 grit sandpaper and repaint with *Sapling Flat Black Paint*, or the equivalent.

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Bonus: Sugar with the *Sapling Efficiency Baffle*

Your baffle can create a reburn chamber to increase your efficiency while sugaring. Simply place the baffle all the way to the rear of your unit (instead of the front) while sugaring and watch your efficiency increase!