



# Assembly and Instruction Guide

Third Edition



FROM CONCEPT TO CREATION... A GENUINE, AMERICAN-MADE WORK OF ART





The Smoky Lake Crew  
volunteers at the  
Ledge View Nature Center

## Dear Fellow Maple Enthusiast,

It has been our absolute pleasure to design and produce this Dauntless™ Evaporator just for you. Maple season is such a special time of year, it means a lot to us to have the opportunity to share it with you.

Your purchase is a celebration of American craftsmanship and American dreams. Dauntless is the fruit of much hard work by fellow maple lovers in Hilbert, Wisconsin. Accept no imitations!

A portion of the funds from your purchase will support charities who are making the world a better place.

The wide variety of causes we've supported include conservation, veteran assistance, cancer research, animal welfare and youth arts just to name a few.

In short, we just want to give you a big "THANKS!" We are so grateful for your business and we send you our wishes for a happy and bountiful maple season. Enjoy your new Dauntless!

*Angela K M Schumacher*

Angela K M Schumacher  
Co-owner of Smoky Lake Maple Products





# CERTIFICATE OF AUTHENTICITY

## Certificate of Authenticity

This product is a genuine Smoky Lake Dauntless™ Evaporator, designed and manufactured by fellow maple syrup lovers in Hilbert, Wisconsin. Made in the USA, baby!

The design of this Dauntless has satisfied a rigorous battery of criteria to ensure efficiency and high-quality output. Each component is certified to uphold the Smoky Lake standards of excellence and craftsmanship.

As owner of this Dauntless Evaporator we welcome you as a member of the Smoky Lake community; a band of self-starters, mavericks, dreamers and purists. It is a community that inspires others to get off their duff and make something awesome. You are in good company.

This Is What It Boils Down To...™



James Schumacher  
Co-owner of Smoky Lake Maple Products





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# BONUS Video Library



**Dauntless Arch Assembly Video**  
[SmokyLakeMaple.com/dauntless-assembly](http://SmokyLakeMaple.com/dauntless-assembly)  
 Assemble your Arch right alongside us and pick up some helpful tips along the way.



**Leveling the Arch**  
[SmokyLakeMaple.com/backyard/#chap1](http://SmokyLakeMaple.com/backyard/#chap1)  
 Starting with a level foundation is important so that sap depth is consistent throughout your pans.



**Stack Pipe and Guy Support**  
[SmokyLakeMaple.com/backyard/#chap3](http://SmokyLakeMaple.com/backyard/#chap3)  
 How and why your Stack Pipe should be supported.



**Filling Pans with Sap**  
[SmokyLakeMaple.com/backyard/#chap4](http://SmokyLakeMaple.com/backyard/#chap4)  
 How to take advantage of your pan's Level Assist feature. Plus tips on maintaining depth while boiling.



**Light It Up!**  
[SmokyLakeMaple.com/backyard/#chap5](http://SmokyLakeMaple.com/backyard/#chap5)  
 How to load the firebox and boil efficiently. What to expect on start-up. When to use the damper. Preventing coal build up.



**Shutting Down**  
[SmokyLakeMaple.com/backyard/#chap6](http://SmokyLakeMaple.com/backyard/#chap6)  
 Great overview of Jim's process as he shuts down for the day. Concludes with some advice on storage and maintenance.



**Firewood**  
[SmokyLakeMaple.com/firewood](http://SmokyLakeMaple.com/firewood)  
 If you are struggling to get a nice boil, the culprit is nearly always the firewood.



# WARNINGS

## ⚠ Warnings

Always have a fire extinguisher nearby during operation. Make sure everyone working with you knows where it is located too.

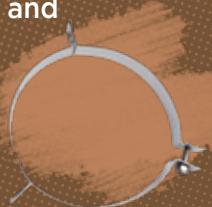
NEVER insulate the Stack Pipe nor the Stack Elbow. This may cause the pipe to overheat and collapse or otherwise fail.

The Smoke Stack MUST be supported. See Guy Support information, page 24.

The Stack Pipe manufacturer recommends a MINIMUM clearance of 18" to combustible materials. With that said, sparks and embers will exit the Stack Pipe during operation and can travel quite far. Be mindful of wind direction and nearby combustibles.

Remember that even though sparks are not highly visible in daylight, they are still present.

NEVER store flammable materials in the base of the Dauntless. Otherwise, coals from the firebox could potentially fall through the damper and land in the Arch base.



NEVER stick your face in the HOT steam, and NEVER touch the evaporator with a bare hand during or after operation. It will be HOT. Touching may cause burns.

ALWAYS wear gloves when loading the evaporator with wood and/or interacting with the evaporator in any way. A face shield is also recommended to protect you from heat and sparks when you open the firebox door.

Wear protective gloves, eye goggles, face mask and full body clothing when handling ceramic insulation. Avoid inhaling airborne particles. Wash your hands and clothes after handling insulation.



Read and understand all of the warnings and instructions listed on the cans of Arch Paint before using. Use only as directed in a well ventilated area. Spray cans must be stored in environments that are LESS THAN 120°F.



Do NOT attempt to lift or otherwise move an evaporator/pan containing hot sap/syrup. Allow the liquid/equipment to cool before handling.

Maintain 2" of liquid depth in the evaporator pan at all times. This will protect both the pan and your maple syrup.

If an unexpected foam-up occurs while boiling, add ONE small drop of vegetable oil to the pan to instantly quell the surge.

Do not walk away from your evaporator while it is in use.

After the fire in your firebox has been extinguished, your sap/syrup will continue to steam. Watch and maintain sap levels until the steam has completely stopped.

Remove protective vinyl from all pans before use. (If applicable)

Always use plumber's tape on stainless steel threaded connections. This will enhance the seal and will prevent thread binding.





# Flat Vs Divided Vs All-In-One Hybrid

Smoky Lake offers three different pan styles for the Dauntless Evaporator. The main differences between the different pans would be the style of boiling (batch vs continuous flow), and also the boiling rate (gallons evaporated per hour).



## Flat Pan

A Flat Pan is used for “Batch Boiling”. This means you are making one big batch of syrup. You must continue boiling until the entire pan has reached the proper density. After your batch is complete, you can either hang it up for the season, or start again making a new batch of syrup.

Dauntless Evaporator with Flat Pan, Optional Feed Pan and Sight Glass



Generally speaking, Batch Boiling creates darker, more robust-flavored syrup than Continuous Flow boiling because the sap is caramelizing for a longer period of time. If your goal is to make lighter, more delicate-flavored syrup, Divided Pans are the way to go. Note: Regardless of what type of pan you use, late season syrup is typically darker and more robust.



## Divided Pan

Pans with dividers enable “Continuous Flow Boiling” which means you will periodically draw off small amounts of finished syrup rather than wait for one big batch to finish. (See more explanation on the next page.) When you run out of raw sap, stop boiling. Then pick up where you left off in a few days when more sap is available.

Dauntless Evaporator with Divided Pan, Optional Float Box and Sight Glass



The Divided Flat Pan is reversible. Reversing the flow of your sap through the channels will help deter sugar sand buildup on the floor of the pans. (Instructions included with the pan will have more information about this.)

Continuous Flow Boiling allows you to filter and bottle your syrup as you go rather than waiting to do everything at the end.





Dauntless Evaporator  
with All-In-One Hybrid



## All-In-One Hybrid

This pan includes a warming channel, three flue channels and two front finishing compartments — all in one pan, no linkages required. The main benefit of this pan is the Flues which increase the amount of surface area coming in contact with the fire. The result is greater heat transfer and evaporation rate while using less fuel.

Just like a Divided Pan, the All-In-One Hybrid enables “Continuous Flow Boiling”. Unlike a Divided Pan, a Hybrid Pan is not reversible.



## Drop Flue Pan Set

This 3-pan system was discontinued in Fall 2022. It has been replaced by the All-In-One Hybrid Pan model.

## How Continuous Flow Works

Continuous Flow Pans are made up of a series of channels. During the boiling process, raw sap is continuously being added to the pan’s first channel; typically using an accessory called a Feed Pan (shown below) or a Float Box (see page 31). The fresh sap displaces the sap that’s already in the pan, pushing it further into the system. Eventually a visible “density gradient” is established (shown below). This means the sap near the draw-off valve is closer to becoming finished syrup because it has been in the system the longest period of time. Hence, it will be darker in color and will have the highest sugar density.

The operator knows when to draw off finished maple syrup based on the temperature by the draw-off port. (Syrup finishes at 7°F above the boiling point of water. See page 27 for more details.) Density should then be verified/fine tuned with a hydrometer and Murphy Cup. (Sold separately. See page 28.)

When finished boiling for the day, the sap is typically left in the pans until the next boil. The gradient will automatically re-establish itself when you resume boiling/adding raw sap.

## How Long Can Sap Sit Between Boiling Sessions?

Treat your sap as you would milk. Cold weather helps preserve sap while warm weather and direct sunlight will cause it to spoil much quicker.



Divided Pan with  
optional Feed Pan  
and Gonzo Spout





**Lots of pieces here! Before unboxing, please clear a large workspace to help keep organized.**

We go to great lengths to ensure accuracy of every Dauntless package! Every hardware set has been audited by a third party. Every Arch box has been double checked by weight. For your reference, we also include a parts list sticker on the outside of each of the Dauntless Arch boxes. Please note that some parts may be nested inside each other. If you have any questions or need assistance, just give us a shout at (920) 202-4500.

## Hardware Set\*



Fender Washer  
(Qty 4)



Stainless Steel Washer  
(Qty 2)  
NOTE: These are THINNER  
than the other Flat Washers



Flat Washer (Qty 78)



Lock Washer  
(Qty 70)



1/2" Carriage Bolt  
(Qty 44)



3/4" Carriage Bolt  
(Qty 26)



2" Carriage Bolt  
(Qty 4)



1" Bolt  
(Qty 3)



Quarter Twenty Nut  
(Qty 74)



5/16" Lock Nut  
(Qty 3)

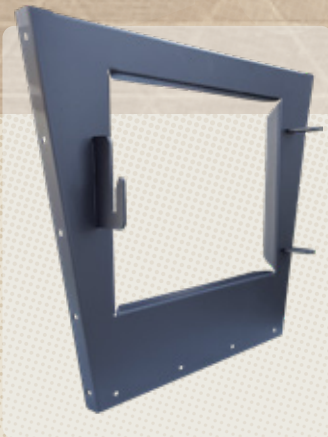




## Arch Panels\* (Shown Here With Proper Paint Application. See page 14 for more painting details.)



Back Panel (Qty 1)  
Detail on p 14, Fig 1F



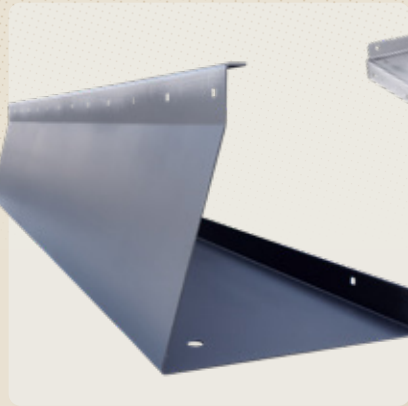
Front Panel (Qty 1)  
Detail on p 14, Fig 1E



Door (Qty 1)  
Detail on p 14, Fig 1G  
+ Handle (Qty 1)



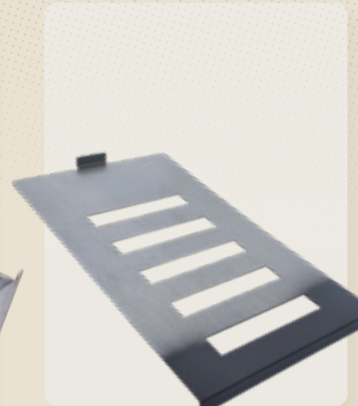
Side Panel (Qty 2)  
Detail on p 14, Fig 1A



Base Half (Qty 2)  
Detail on p 14, Fig 1B



Floor Panel (Qty 1)  
Detail on p 14, Fig 1C



Damper Slide (Qty 1)  
Detail on p 14, Fig 1D



Riser Panels (Qty 2)  
NO paint



## Insulation, Stack Pipe, Other\*



Front Panel Insulation (Qty 1) +  
Back Panel Insulation (Qty 1)



Door Insulation  
(2 Sizes, 1 of each)



Front Side Insulation (Qty 2) +  
Back Side Insulation (Qty 2)



Riser Insulation  
(Qty 1)



Satin Black  
Arch Paint  
(Qty 4)



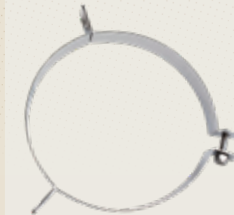
6" Elbow (Qty 1) +  
6" Snap-Lock  
Stack Pipe (Qty 4)



Steel Grates  
(Qty 1)



Emblem  
with Hardware  
(Qty 1)



Guy Support  
(Qty 1)



Accessory Kit\*\*  
(Qty 1)

\*The parts shown on these pages are not necessarily shown to scale relative to one another.

\*\*A complimentary Pan Accessory Kit is included with every Smoky Lake pan purchase. When purchasing a full evaporator (pan + arch), the kits will include a Maple Thermometer, Draw-Off Valve, and also the applicable stainless Nipple and Plugs for your particular model of pan.





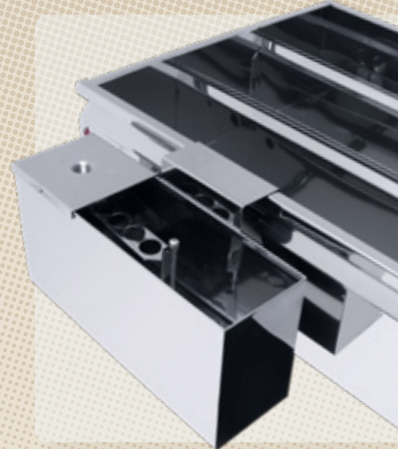
## Add-Ons



4-1/2" x 9" x 1-1/4"  
Insulated Firebricks  
(Qty 18 Required)



Feed Pan  
Optional Add-On.  
See Page 31



Float Box  
Optional Add-On.  
See Page 31



Sight Glass  
Optional Add-On.  
Two Styles. See Page 30.



1" Rail Gasket  
Optional Add-On.  
Includes adhesive backing for  
ease of initial installation.



Wheels  
Optional Add-On.  
Two Styles. See Page 32.



Lids or Hoods  
Optional Add-On.  
See SmokyLakeMaple.com



Forced Draft Kit  
Includes Elbow Upgrade.  
Optional Add-On.





*Let the  
Adventure  
Begin...*



# ASSEMBLY

**Gather These Additional Items Before Starting Assembly:**



Combination  
Screw Driver



7/16" Wrench, 1/2" Wrench,  
and Crescent Wrench



Pliers



Mallet



Two Dimes +  
Two Nickels  
(Spacers for Step 4)



Drill/Driver *(Choose a  
bit diameter appropriate  
for your particular Sheet  
Metal Screws)*



12 Sheet Metal  
Screws  
*(Securing the  
Stack Pipe, Step 8)*



Wire/Cable  
*(For the Guy Support,  
Step 8)*



7/16" Nut Driver  
*(Optional, but handy!)*



Paper Towels or Rags



## I) Paint

**WIPE:** The panels of the Dauntless Arch may be shipped with a light coat of oil to protect the steel. Before painting, thoroughly wipe down the panels to remove excess oil. Using solvent/soap is not necessary.

**READ:** Carefully read all of the warnings and instructions on the can of Arch Paint.

**GATHER PARTS:** Refer to page 8 for photos of arch panels that have been properly painted. Further detail and explanation available on page 14.

- Do NOT paint the interior of the Arch, including the two Riser Pieces.
- Do NOT paint any mirror finish stainless steel pan surface, nor any hardware/valves/insulation/bricks.
- Do NOT paint the entire length of the Damper Slide. Paint only the end. See Fig 1D.
- The Stack Pipe and Elbow are preprinted. Arch Paint can be used for touch ups if necessary.



**APPLY:** For optimal spray conditions, the surface, ambient air and the aerosol should be between 60 – 90°F.

Shake the can vigorously for at least two minutes. Hold the can 12 – 15 inches from the surface you are painting.

Use steady, even strokes.

Do NOT attempt to apply the all the paint in one heavy coat.

## Painting Techniques

Smoky Lake Arch Paint has been specially formulated for your Dauntless Evaporator by Forrest Technical Coatings. Their video tutorials for high temp spray paints are relevant to Smoky Lake Arch Paint and are a great reference for proper technique.

**VIDEO PAINTING TUTORIALS:**  
[SmokyLakeMaple.com/how-to-paint](http://SmokyLakeMaple.com/how-to-paint)



**VIDEO TIP:** Hold the can 12 – 15 inches from the part.



**VIDEO TIP:** Cover the parts with THIN coats of paint, rather than thick, heavy coats.



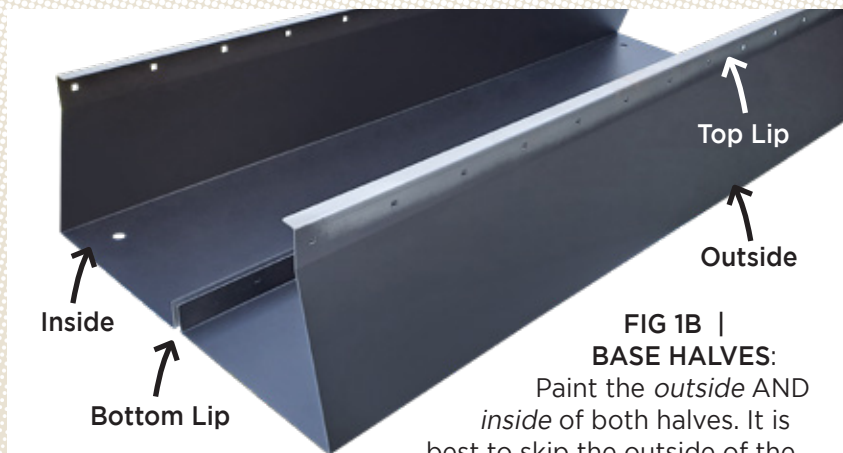




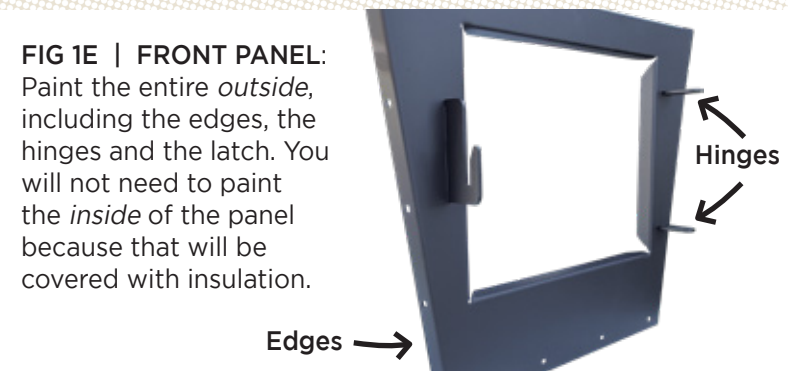
**FIG 1A | SIDE PANELS:** Paint the entire *outside* of this panel; including the edges. The *inside* of the panels will be lined with insulation and therefore do not need to be painted.



**FIG 1D | DAMPER SLIDE:** Paint the top and the underside of **THIS END ONLY**. In contrast, painting the entire length of the Damper may inhibit it from sliding smoothly.



**FIG 1B | BASE HALVES:** Paint the *outside AND inside* of both halves. It is best to skip the outside of the top lip and bottom lip which get covered in the assembly process.

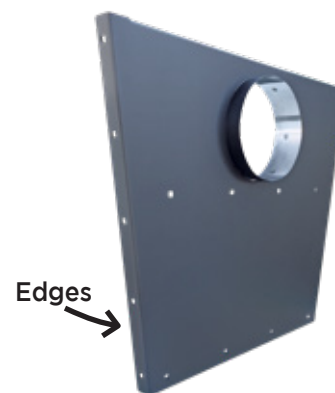


**FIG 1E | FRONT PANEL:** Paint the entire *outside*, including the edges, the hinges and the latch. You will not need to paint the *inside* of the panel because that will be covered with insulation.



**FIG 1C | FLOOR PANEL:** Paint the outside of both of the end lips. (There is a lip on either end of the panel). The rest of the panel will not be visible.

**FIG 1F | BACK PANEL:** Paint the *outside* and the edges. The *inside* of the panel will be covered with insulation.



**FIG 1G | DOOR:** Paint the entire *outside*, including all the edges, braces and latch. The *inside* of the panel will be covered with insulation.







Fig 2A

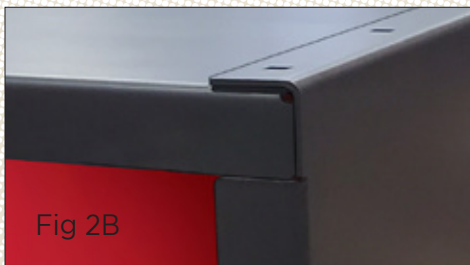


Fig 2B



Fig 2C

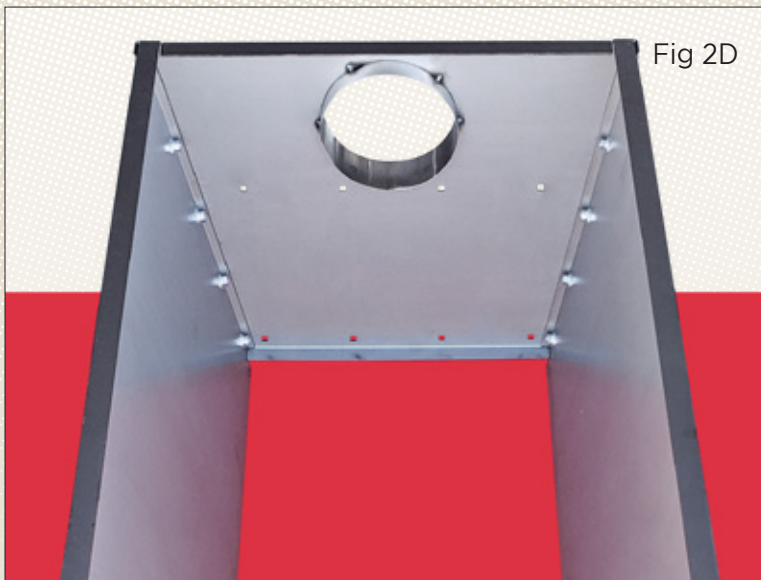


Fig 2D

## 2) Firebox Assembly

### BACK PANEL + SIDE PANEL #1 | See Fig 2A, 2B, 2C

Lay a Side Panel on your work table, facing up as shown in Fig 2A. Slide the Back Panel over the end of the Side Panel so that the two panels form a 90° angle (Fig 2A, 2B). Use a mallet to tap into place if necessary.

To fasten the two panels together, insert the 1/2" Carriage Bolts into the overlapping square holes. Loosely fasten each bolt in place with a Flat Washer, followed by a Lock Washer, followed by a Quarter Twenty Nut (Fig 2C). You will tighten all of the nuts in a later step.

### BACK PANEL + SIDE PANEL #2 | See Fig 2D, 2C

Stand the two joined panels upright. Then connect the second Side Panel to the Back Panel. (Fig 2D and 2C)

### FRONT PANEL + SIDE PANELS | See Fig 2E, 2C

On the opposite end, connect the Front Panel to the two Side Panels. Again, use a mallet to tap into place so that the square holes overlap perfectly.

Again, insert the 1/2" Carriage Bolts into each of the overlapping square holes and hand tighten each with a Flat Washer, followed by a Lock Washer, followed by a Quarter Twenty Nut.

After all the bolts are in, fully tighten all the nuts in the assembly.

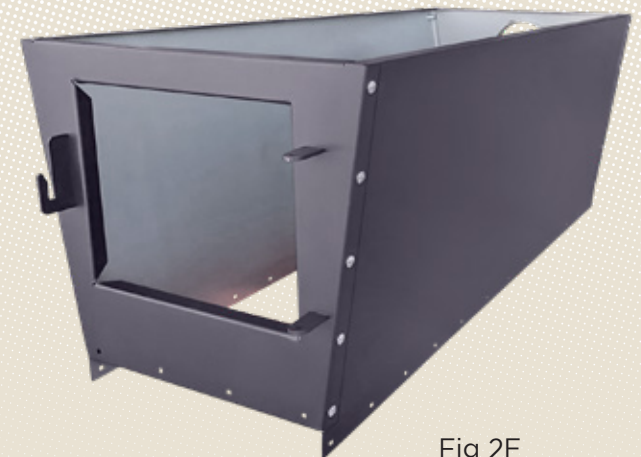
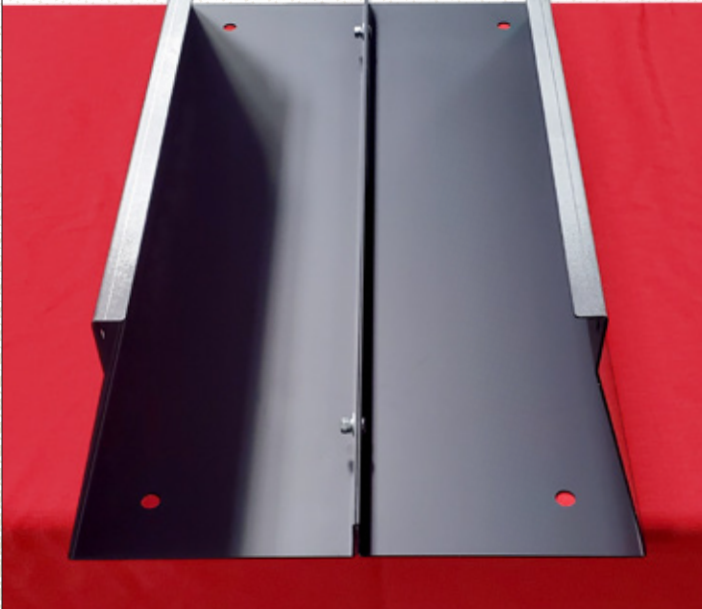


Fig 2E





Fig 3A



### 3) Base Assembly

#### **BASE HALF + BASE HALF | See Fig 3A, 2C**

Place the two Base Halves facing each other and join them with two 1/2" Carriage Bolts. Just as before, the bolts will be fastened using a Flat Washer, followed by a Lock Washer, and a Quarter Twenty Nut. Fully tighten.

#### **+ DAMPER SLIDE | See Fig 3B**

Place the Damper Slide on top of the Base Halves with the lip pointing downward. The end of the Damper Slide with the slots in it will be the front of your evaporator.

#### **+ FLOOR PANEL | See Fig 3B**

Place the Floor Panel on top of the Damper Slide. The slots in the Floor Panel should be positioned so that they are toward the front of your Arch — matching the position of the slots on the Damper Slide. The square holes along the long edge of the Floor Panel should align with the square holes of the Base Halves.



← Floor Panel  
← Damper Slide  
← Base Halves

Fig 3B





Fig 4A

## 4) Joining the Top and Bottom

### FIREBOX ASSEMBLY + BASE ASSEMBLY | See Fig 4A

Place the Firebox Assembly on top of the Base Assembly. The doorway of the Firebox should be positioned toward the front, the same end as the slots in the Floor Panel.

### SPACERS | See Fig 4A, 4B, 4C

At the front of the Arch, position the edge of a dime in between the Floor Panel and the Damper Slide (Fig 4B). Similarly, place two nickels at the back of the Arch between the Base Halves and the Floor Panel (Fig 4C). These coins are being used as temporary spacers. The purpose of these spacers is to prevent the Damper Slide from becoming too restricted when we tighten all the Side Panel bolts. We want to ensure that the Damper Slide can slide freely — even when the metal expands and contracts during use.



Fig 4B  
Use dime spacers  
in the front



Fig 4C  
Use nickel spacers  
in the back

### HARDWARE | See Fig 4B, 2C

On the long sides of the Arch, there are now three layers of overlapping metal with matching square holes. If necessary, insert a screwdriver through the three layers of holes to help align them perfectly.

Start by installing a 3/4" Carriage Bolt in the first and last set of overlapping holes on each Side Panel. Like before, hand tighten with a Flat Washer, Lock Washer and Quarter Twenty Nut.

Then, continue installing the remaining 3/4" Carriage Bolts on the Side Panels the same way.

**NOTE:** If you have the Forced Draft Kit upgrade, ten of the side bolts in this step could/should be left open for now. See pages 33 - 34 for details.

Next, install the hardware on the front and back of the Arch. You will be using eight 1/2" Carriage Bolts. Again, hand fasten with a Flat Washer, Lock Washer, and Quarter Twenty Nut. After all the bolts in this step have been installed, go back and fully tighten.





Fig 5A



Fig 5B

## 5) Installing the Riser

### **RISER ASSEMBLY | See Fig 5A**

Connect the two riser panels by overlapping them at a 90° angle. You will be using four 1/2" Carriage Bolts. Again, fully tighten with a Flat Washer, Lock Washer, and Quarter Twenty Nut.

### **RISER ASSEMBLY + FIREBOX ASSEMBLY | See Fig 5B, 5C**

After you insert the Riser Assembly into the Firebox, there will be three overlapping square holes along each side wall and four overlapping square holes along the back wall.

Insert a 1/2" Carriage Bolts into each of these square holes. Hand tighten each from the inside of the Arch using a Flat Washer, followed by a Lock Washer, followed by a Quarter Twenty Nut. After all of these bolts are in, fully tighten.

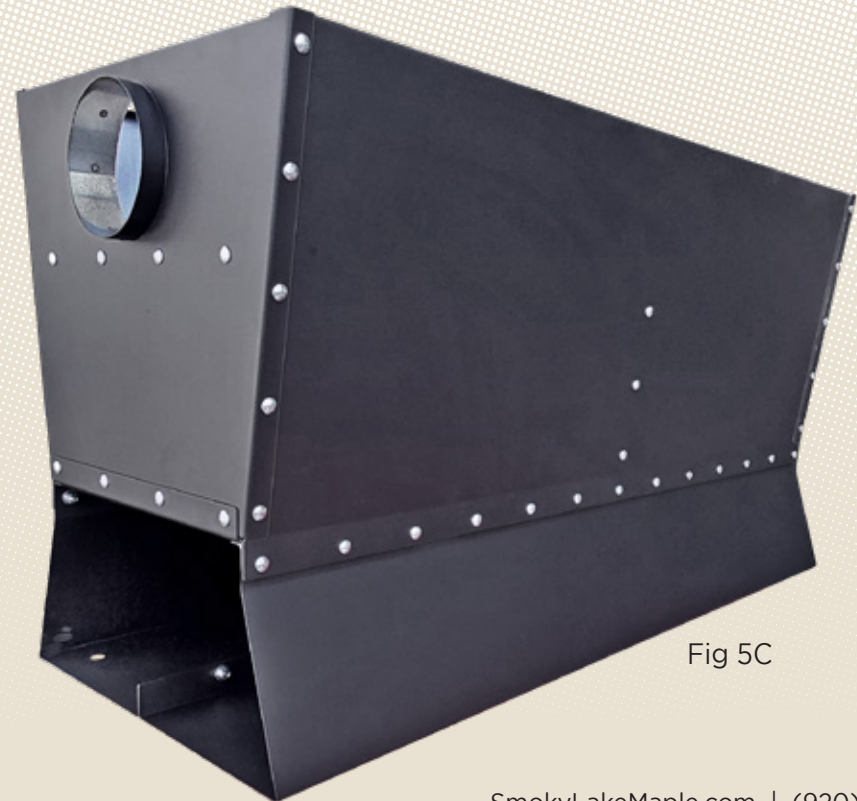


Fig 5C



## 6) Door Assembly

### DOOR + HANDLE | See Fig 6A, 6B

Place the Door flat in front of you with the outside of the Door facing upward and the hinge to the right. Stack two Flat Washers on top of the circular hole in the center of the door. These Flat Washers are spacers that will prevent the Handle from rubbing on the Door.

Slide the Handle through the slot on the left side of the Door so that the round hole on the Handle is positioned directly over the top of the stacked Flat Washers, and the finger grooves are pointing toward you. Stack an additional Flat Washer on top of the hole on the Handle. Then, insert a 1" Bolt through the entire grouping. (The grouping is 1 Flat Washer + the Handle + 2 Flat Washers + the Door)

Hold the 1" Bolt in place and tip the Door up. Fasten it on the back side using a Flat Washer followed by a Lock Nut. (Note: A Lock Nut has a front and back side. See Fig 6B.) Tighten firmly. Test swing the handle up and down. If it is too tight, loosen the nut. If it feels too loose, tighten it up a bit more.

### DOOR + EMBLEM | See Fig 6C, 6D

Align the Emblem over the two round holes at the top of the outside of the Door. Fasten using the hardware that was provided with the Emblem.

### DOOR + INSULATION #1 | See Fig 6E

We recommend wearing gloves, a mask, and full length clothes when handling insulation. Direct contact could potentially irritate skin.

You have received two precut rectangular pieces of insulation with your Dauntless. Take the larger of the two and pack it into the back side of the door. You will note that this piece of insulation is slightly larger than the door itself. This allows it to pack firmly into place.

Fig 6A

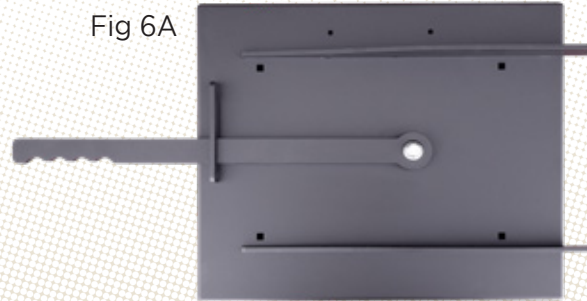


Fig 6B



Fasten the Handle with a Flat Washer and Lock Nut.

Fig 6C



Fig 6D



Fasten the nameplate inside the door

Fig 6E







Fig 6F

### HINGE | See Fig 6F, 6G

Set a Stainless Steel Washer on top of each hinge arm on the front of the Dauntless. (Fig 6F) This will be a spacer that prevents the paint from scratching off every time you open and close the door.

Thread one Flat Washer onto each of the two remaining 1" Bolts. Then insert each 1" Bolt through the top of the holes on the hinge on the Door. Then set the Door on the hinge on the front of the Dauntless. (The bolts should go through the top of the Washers we had just placed on the hinge. (Fig 6G)



Fasten the Bolts in the door hinge using a Flat Washer followed by a Lock Nut. Tighten until firm. Swing the door open and closed to test how it feels. If it feels too tight, loosen the Lock Nuts slightly.



Fig 6G

### DOOR INSULATION | See Fig 6H, 6J

Close the Door. From inside the firebox, center the smaller rectangle of Insulation over the top of the door's existing rectangle of Insulation. Press the four 2" Carriage Bolts through the front of the Door and through the Insulation. (Fig 6H)

Fasten each 2" Carriage Bolt, inside the firebox, using a Fender Washer and a Quarter Twenty Nut.

Do NOT over-compress the door insulation as this could negatively impact the air-tightness of the door. (Fig 6J)



Fig 6H

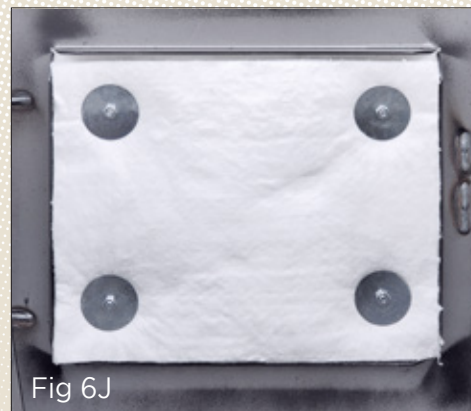


Fig 6J

**NOTE:** If you have the Forced Draft Kit upgrade, now is a good time to install that add-on. See pgs 33 - 36. After your Forced Draft Kit is installed, continue with the remainder of the Arch build on pages 21 - 24.



## 7) Inside the Firebox

### INTERIOR INSULATION | See Figs 7A - 7C

All pieces of insulation are intentionally cut slightly oversized so that they pack securely into place. You will NOT need any bolts or adhesives to hold them in place.

First install the Back Panel Insulation (the piece with the circular hole in it) and the Front Panel Insulation (the piece with the rectangular hole in it). (Fig 7A)

Next, install the Riser Insulation to cover the Riser, starting at the back exhaust hub and running down to the floor of the firebox. The tapered end of this piece of insulation is positioned toward the bottom of the firebox. (Fig 7B)

The remaining four pieces of insulation are used to insulate the side walls of the firebox. The two identical

larger pieces are installed in the firebox. The two identical smaller rectangles are installed in the back of the arch. (Fig 7C)

### GRATES | See Fig 7D, 7J

The following steps will add a lot of weight to the Arch. Before proceeding, place the Arch in its final resting location, OR install the optional Caster Wheel Kit or Pneumatic Tire Kit. (See page 32)

Place the Grates inside the firebox so that the Vs are facing upward. The the base of the Grates extend past the Vs on one end. That end should be positioned to the BACK of the firebox (Fig 7J). Center the Grates left to right within the firebox. (Fig 7D)



Fig 7A



Fig 7B

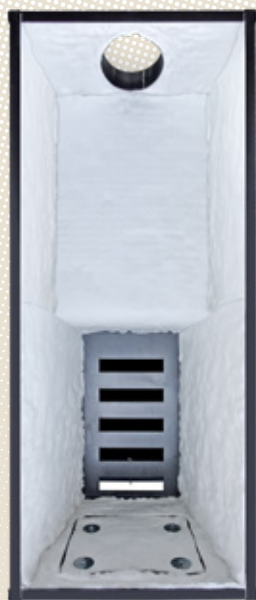


Fig 7C



Fig 7D



Fig 7E





Fig 7J — The end of the grate assembly in which the base extends past the “Vs” should be positioned at the back of the Firebox.

### BRICKS | See Fig 7E — 7H

The first two bricks will be installed at the back of the firebox. (Fig 7E) Stand them vertically. They will be held in place by the grates.

Next, we will install a row of vertical firebricks on either side of the firebox. These bricks will rest on top of the Grate’s base rails and will ultimately fit snug, side-by-side, without gaps between them. Install the bricks in the following order, to prevent ripping the Insulation:

- First, place a vertical brick as close to the firebox door as possible. Then position two more bricks, side-by-side, right next to it. (Fig 7F)
- Next, position a vertical brick at the back of the firebox, snug against the riser insulation. (Fig 7G)
- In the gap that remains, install an additional vertical brick. (Fig 7G)
- Stack a row of three horizontal Firebricks on top of the five vertical Firebricks. (Fig 7H)



Fig 7F



Fig 7G



Fig 7H



The purpose of the Firebrick is to protect the insulation from your firewood. We do NOT brick the entire interior of the Arch because brick holds onto heat. Consequently, having more brick than necessary would prolong both your start-up and shut down.

Visit our website’s knowledge base to learn more:

[SmokyLakeMaple.com/firebrick-faq](http://SmokyLakeMaple.com/firebrick-faq)





Fig 8A



Fig 8B

## 8) Smoke Exhaust

### ELBOW | See Fig 8A

Insert the crimped end of the Elbow into the hub on the back of the Dauntless. Drill 4 holes through the hub on the Arch to secure the Elbow with sheet metal screws.

**NOTE:** If you chose the Forced Draft Kit upgrade, use the Heavy Duty Elbow from that kit rather than the default Elbow that was boxed with the Arch.

### STACK PIPE | See Fig 8B, 8C



Fig 8C

Assemble the four 2-foot-long Stack Pipes by snapping the seam together (Fig 8C). After it is snap-locked, press the pipe as needed to return it to a circular shape.

Place the tapered end of one of the Stack Pipes into the Elbow on the back of the Arch. (Fig 8B)

Insert the crimped end of the second Stack Pipe into the top of the first Stack Pipe.

Then insert the crimped end of the third Stack Pipe into the top of the second Stack Pipe and so on. Add four sheet metal screws at each connection.

It is important to use all 8 feet of this Stack Pipe because this will create pneumatic draw in your Arch. This helps draw oxygen into the Arch through the Damper Slide to create clean, efficient combustion.





**SAFETY:** The manufacturer of the Stack Pipe calls for 18" minimum clearance from combustibles. That being said, please keep in mind that burning embers will inevitably be emitted from the pipe during use. Be mindful of wind direction and keep a fire extinguisher on hand at all times.

**GUY SUPPORT:** Your Stack Pipe must be secured and supported for safe operation.

In the past, some of our customers have opted to secure their Stack Pipe by attaching a brace to the pole of a basketball hoop or to the pole of a clothesline. However, if you do not already have a plan such as this to secure your Stack Pipe, please use the Guy Support that was supplied with your Dauntless.

The stainless steel Guy Support should be tightened high on the Stack Pipe like a belt. Next, attach a cable or wire to each wing of the support and stake each cable to the ground, at least 4' away from the base of the Dauntless. If you don't have stakes, or if the ground is too frozen for stakes, cinder blocks can make great anchors. Attach a ribbon midway down each cable to make them more visible so that nobody walks into them.

Alternatively, if you are installing inside a sugarhouse, with the Stack Pipe going up through the roof, see "Double Wall Exhaust" on SmokyLakeMaple.com.



For more detail on installing the Stack Pipes and Guy Support, check out our demo video:  
[SmokyLakeMaple.com/backyard/#chap3](https://www.SmokyLakeMaple.com/backyard/#chap3)

## 9) Enjoy!

Ain't she a beaut'?! Your Dauntless is now ready for operation. We hope you have enjoyed this journey so far. The most important instruction we can leave you with today is HAVE FUN THIS SEASON!

Please give us a shout if you have any questions about your Dauntless. We also have a ton of valuable online resources that you can reference at any time of the day or night. (Links below)



**Knowledge Base**  
[SmokyLakeMaple.com/  
support-dauntless](https://www.SmokyLakeMaple.com/support-dauntless)



**Production Tips**  
[SmokyLakeMaple.com/  
production-tips](https://www.SmokyLakeMaple.com/production-tips)



**Beginner Maple Syrup**  
[SmokyLakeMaple.com/  
make-maple-syrup](https://www.SmokyLakeMaple.com/make-maple-syrup)



A full line of premium equipment for maple syrup production



# FAQ

## Frequently Asked Questions

### What is the expected lifespan of Ceramic Blanket Insulation?

The blanket is extremely resistant to heat, so you will only need to replace it if it gets torn by firewood or otherwise damaged. Unruly mice can sometimes chew up insulation in the off season. We have no idea why any animal would choose to chew on the stuff, but it happens. If your ceramic blanket insulation needs to be replaced, have no fear. Smoky Lake makes it easy with precut, replacement insulation kits on [SmokyLakeMaple.com](http://SmokyLakeMaple.com).

### Do I need Rail Gasket?

Rail gasket helps seal up any gaps between your pan and arch, resulting in higher boiling efficiency. If you are asking if you NEED Rail Gasket on Dauntless, the answer is “No”. But if you are asking if you WANT it, the answer is.... “Maaaybeee”.

Rail Gasket is most commonly used in larger evaporators whose arch rails are at least 2” wide. This thicker width is inherently more accommodating, making it much easier for a Rail Gasket to stay in place.

The arch rails of the Dauntless are narrower (1” wide) which makes the industry’s traditional Rail Gasket tricky to install. Because of this, Smoky Lake offers a 1” Rail Gasket with temporary adhesive backing to help with the initial installation.

### How much longerrrrr?

Yes, maple syrup requires a lot of boiling. Enjoy the journey! Monitor density using temp/hydrometer (See pages 27 – 28). More information about boiling time available here: [SmokyLakeMaple.com/boil-time](http://SmokyLakeMaple.com/boil-time).

### What is a Damper Slide for?

A damper allows air into the firebox to fuel the fire. Usually we’ll leave the damper all the way open while we are running the Dauntless. Close the damper to help extinguish the fire in an emergency shut down situation.

### Will ash/coals build up in the firebox and need to be cleared?

Compared to a home wood stove, the Dauntless will NOT develop a lot of ash. If you are using well-seasoned wood, you should not need to worry about excessive ash/coal. The draft carries much of the ash up and out the smoke stack. As a precaution, keep a fire extinguisher on hand. (See page 4 for additional safety tips.)

### Why is the Stack Elbow twistable rather than static?

The benefit of the twistable Elbow is that if your Stack Pipe were to be pulled down, the Elbow can shift rather than tip over your entire hot evaporator. That being said, we do offer a Heavy Duty Elbow with our Dauntless Forced Draft System which is required for that system’s elevated heat. That Elbow option is available separately on [SmokyLakeMaple.com](http://SmokyLakeMaple.com).

### Can I insulate the Stack Pipe with Ceramic Blanket?

Solid NOPE. Wrapping insulation around the Stack Pipe may cause it to overheat and potentially collapse or otherwise fail.





## Eh. How do I make Maple Syrup?

In a nutshell, maple syrup is made by boiling maple sap until it has reached at least 66° BRIX (66% sugar density). It is then filtered and hot packed into bottles.

You can find a detailed guide to making maple syrup on our website at [SmokyLakeMaple.com/make-maple-syrup](http://SmokyLakeMaple.com/make-maple-syrup).

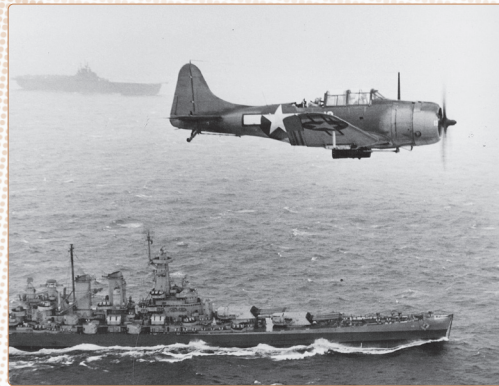
You can also order a paper copy of this guide on our website. Simply type “Beginner Backyard Sugaring” in the product search box on [SmokyLakeMaple.com](http://SmokyLakeMaple.com).

Follow us on Facebook for tips, tutorials, contests and to hear about upcoming events. It’s a great way to learn and connect with other maple producers.

There are also many state maple associations that offer excellent mentorship and year round events for maple producers. You may also find seasonal maple events at your local nature center.

More great resources are listed on pages 3 and 24 of this guide.

## How did the Dauntless Evaporator get its name?



Like most Smoky Lake evaporators, the Dauntless was named after an American, WW2 era fighter plane. The “Douglas SBD Dauntless” was the primary US Navy dive bomber during World War 2.

◀ SBD-5 Dauntless aircraft flying over USS Washington & USS Lexington in the Pacific Ocean en route toward the Gilbert Islands, Nov. 12, 1943

Photo courtesy of: United States Navy National Museum of Naval Aviation

## Thoughts on firewood...

- For the Dauntless, 16 – 20" length firewood is a great fit.
- Split logs into wrist-size pieces. This will help them burn more efficiently, resulting in a more rapid boil.
- Firewood should be DRY, DRY DRY. Note that some species need SEVERAL years to dry in a covered location with good air flow before they will be ready to perform well in a maple evaporator.
- Some tree species burn hotter than others. For more details, see [SmokyLakeMaple.com/btu](http://SmokyLakeMaple.com/btu)



This video demonstrates proper firing techniques on a Dauntless Evaporator. [SmokyLakeMaple.com/light-it-up](http://SmokyLakeMaple.com/light-it-up)



This video discusses various tree species and their merits as a fuel source in a maple syrup evaporator. [SmokyLakeMaple.com/firewood](http://SmokyLakeMaple.com/firewood)



# Using A Maple Thermometer\*

**WHY WE USE IT:** Maple syrup finishes at 7°F above the boiling point of water. What is the boiling point of water? Well, that depends on things like altitude, the current barometric pressure and other factors. Since the boiling point of water fluctuates, we calibrate a maple thermometer in boiling water before each use. Once calibrated, we watch for the needle of the thermometer to reach the bold 7 mark, indicating that the syrup is 7°F above the current boiling point of water.



## HOW TO CALIBRATE THE THERMOMETER:

Fill a medium-sized pot with **4 inches** of tap water and bring it to a boil. (Note: Smaller sauce pans are typically not deep enough for this.)



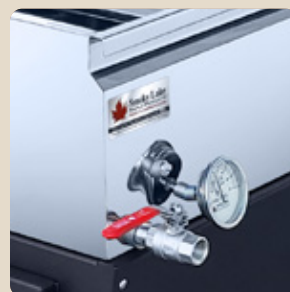
Find the dimple on the stem of your thermometer. This dimple indicates the minimum amount of the stem that must be submerged in order to get the most accurate reading.



Wear protective gloves and hold the thermometer in the boiling water with a set of tongs, submerging the stem at least up to the dimple mark. Do NOT allow the thermometer's stem tip to rest on the bottom of the pot.



The needle of the thermometer should make one full revolution before coming to rest on the "0". If the needle does not land on zero, use a 6 mm wrench to turn the calibration screw on the back of the thermometer. This will adjust the needle's position. Then re-immers the stem in the boiling water to check your adjustment.



Now that your thermometer has been calibrated, the bold "7" mark will represent finished syrup. Install the thermometer on your evaporator pan. Use plumbers tape to enhance the seal and prevent thread binding.

Always verify your finished maple syrup's density with a hydrometer and Murphy Compensation Cup. (See page 28).

\*A Maple Thermometer is included with the purchase of a full, complete Dauntless evaporator. The thermometer is available separately if you have purchased only the Dauntless Arch (without pans).



# Achieving Perfect Density\*\*

**WHY DENSITY IS IMPORTANT:** If your finished product is less than 66% sugar density, it will spoil more quickly. In contrast, if your syrup is over 67% sugar density, you may develop sugar crystals at the bottom of your containers.

## HOW TO DETERMINE DENSITY WITH A HYDROMETER:

- 1) Fill a testing cup at least 8" deep with a sample of your maple syrup. (Wear rubber gloves to protect your hands if your syrup is hot.)
- 2) Since hydrometers are affected by temperature, you will need to quickly determine the temperature of your sample and use the below chart to determine your **target hydrometer reading**. (Hot syrup cools quickly, especially when placed in a cold cup. Work quickly.)

Syrup Temp (Fahrenheit)	209°	190°	170°	152°	133°	114°	95°	77°	58°	40°
Target Hydrometer Reading	59	60	61	62	63	64	65	66	67	68

*If you are using a **Murphy Compensation Cup**, you can skip this chart because the Murphy Dial calculates your target for you. Also, Murphy will update the calculation in real time as your sample's temperature changes.*

- 3) Slowly lower a clean hydrometer – bulb-side-down – all the way into the testing cup. (A hydrometer is a fragile instrument. Never *drop* it into the testing cup because it may break if it hits the bottom.) Allow the hydrometer to float freely and note the number at which the hydrometer is floating. If your hydrometer reading **matches** your target reading from Step 2, your syrup is at perfect density. If your hydrometer reading is **higher** than your target, slowly mix in sap until perfect density is achieved. If your hydrometer reading is **lower** than your target, continue boiling your syrup.

**HYDROMETERS, TEST CUPS and MURPHY COMPENSATION CUPS are sold separately.**

Visit [SmokyLakeMaple.com](http://SmokyLakeMaple.com)

← The **HOT TEST** line indicates finished syrup at 211°F

← The **COLD TEST** line indicates finished syrup at 60°F



**66° - 66.9° BRIX**  
Excellent!

**BRIX** is a scale used to measure the percentage of sugar in a liquid. If someone says their syrup is “66 BRIX”, that means that the syrup is 66% sugar.

**NOTE:** These instructions assume that you are using a hydrometer with a BRIX scale. It also assumes you are using a US hydrometer calibrated at 60°F. The calibration temperature is written on the paper inside the hydrometer.



\*\*This instrument is sold separately from the Dauntless, but we have included the information in this book since the two items are so commonly purchased together.



# Why Maintain Sap Depth?

Maintaining consistent depth will protect the evaporator pans from overheating, prevent the maple sugars from scorching, and increase boiling efficiency. In order to maintain depth in your pan during the boiling process, additional raw sap must be added to replace the water that was removed via steam.

## Methods of Maintaining Sap Depth Based On Pan Style



### METHOD 1: POUR BY HAND

Slowly pour sap into the evaporator pan at frequent time intervals to maintain 2" depth. A large influx of cold sap may kill your boil, but the method can work as long as you are diligent. If you have a continuous flow pan, it is imperative to constantly add raw sap near the pan's inlet port to maintain gradient.






### METHOD 2: FEED PAN\*

A Feed Pan constantly trickles raw sap into your evaporator pan via a valve whose flow rate is adjusted manually. The constant trickle of sap enhances boiling efficiency and helps establish/maintain the density gradient in divided pans. Feed Pans also help by preheating the sap before feeding it to the evaporator pan. See p 31.



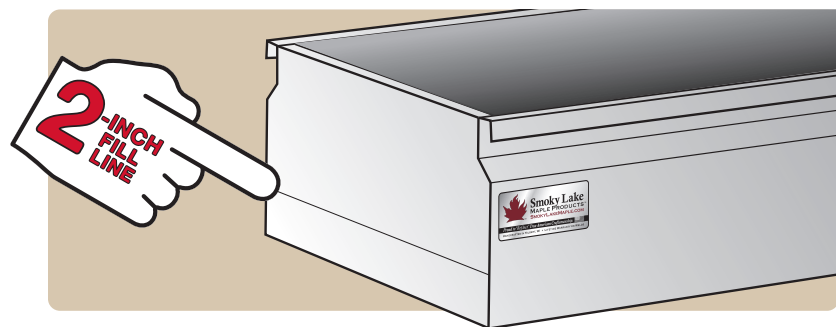
### METHOD 3: FLOAT BOX\*

The beauty of a Float Box is its ability to maintain sap depth so precisely with virtually no "babysitting". Simply set your desired level and the Float Box automatically regulates incoming sap to maintain your set depth. Includes connection for optional Sight Glass. See photos on pages 30, 31.

	<b>FLAT PAN</b>	✓	✓ Optional Add-On	Not available at this time.
	<b>DIVIDED PAN</b>	<i>It's possible, but more difficult to maintain a gradient this way.</i>	✓ Optional Add-On	✓ Optional Add-On. May be used with or without a Feed Pan.
	<b>ALL-IN-ONE HYBRID PAN</b>	<i>It's possible, but more difficult to maintain a gradient this way.</i>	✓ Optional Add-On	✓ Optional Add-On. May be used with or without a Feed Pan.



## Determining Depth



### BEFORE LIGHTING THE FIRE

Flat and Divided Pans include a “Level Assist” feature on the end panels. Use this 2-inch fill line to fill the pan to its proper starting depth. The evaporator should be sitting level so that the depth is consistent throughout the pan.



### AFTER LIGHTING THE FIRE

When sap is at a rolling boil and steam is obscuring the view inside the pan, sap depth can be difficult to determine. This is where a “Sight Glass” comes in handy because it gives a constant, steady reading of the current liquid level. See “Types of Sight Glasses” to the right.

◀ Steam billows off an evaporator during a test boil at Smoky Lake headquarters.

## Sight Glass Styles

### STYLE 1: SIGHT GLASSES FOR FLOAT BOXES

This style of Sight Glass attaches to the drain on the bottom of the Float Box. It includes a special valve which will allow you to drain the liquid inside the sight glass without draining the entire pan. Draining the Sight Glass protects the glass in between boils so that sap does not freeze inside the glass.



SKU SL-STGLSFB

### STYLE 2: SIGHT GLASSES FOR DRAW-OFF VALVES

This style of Sight Glass typically attaches to the pan's draw-off port. (If you have a Divided Pan or Hybrid Pan, you could alternatively attach it to the pan's Inlet Port.) Remember that if the liquid level ever reaches the 1-inch mark, your level is TOO LOW and more sap should be added immediately in order to reestablish a 2" depth.



SKU SL-STGLSDO





## Feed Pan Install

A Feed Pan sits on top of the evaporator pan and is held in place with Attachment Clips. The raw sap in the Feed Pan is preheated by steam while you are boiling.

With a Dauntless Flat or Divided Pan, the Feed Pan sits at the back of the evaporator. (Fig 31A)

With a Dauntless All-In-One Hybrid Pan, the Feed Pan is turned 180° to trickle raw sap into the Hybrid Pan's warming channel. (Fig 31B)

FIG 31A  
Feed Pan on a Dauntless  
Flat or Divided Pan



FIG 31B  
Feed Pan on a Dauntless  
All-In-One Hybrid Pan



## Float Box Styles

If you have a Divided Pan or All-In-One Hybrid Pan, you can easily upgrade to include a Float Box at any time to help automatically regulate sap depth in your evaporator pan. This automation is especially useful when you have a lot of visitors or distractions while you are boiling.

All Smoky Lake Float Boxes are compatible with Sight Glasses as pictured and described on page 30.

SKU	PRODUCT
SL-INFBXDIV	Float Box for Dauntless Divided Pan
SL-INFBXDNTHYB	Float Box for Dauntless All-In-One Hybrid
SL-HOSEDNT	Hose Kit w/Cam Locks (Connects a Feed Pan to a Float Box)
SL-STGLSFB	Deluxe Sight Glass for Float Box (p 30)

SL-INFBXDIV



SL-INFBXDNTHYB





## Caster Wheel Set SKU SL-CASTERHOBBY

This optional accessory is excellent for paved surfaces! Wheels enable effortless transport between your boiling location and your storage location.

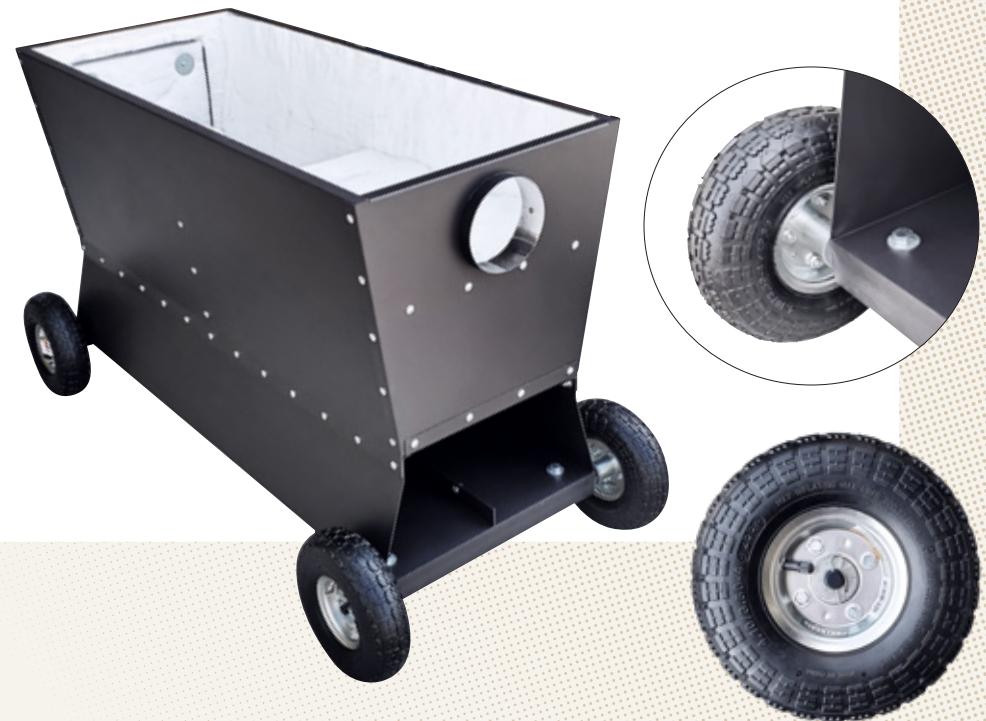


### TIPS FOR SMART USAGE

- ① The Wheel and Tire sets are intended to stay attached to the evaporator once they are installed. Place a wedge in the wheel/tire path to ensure that the evaporator remains stationary during operation.
- ② Remove the pan and stacked bricks before transporting the evaporator. Vibrations from movement could cause these parts to shift/fall.
- ③ Never tie guy wires directly down to your wheel/tire set. Guy wires should be extended out at least 4 feet from the evaporator. See our Backyard Set Up Series for more tips on properly securing your Stack Pipe. [SmokyLakeMaple.com/backyard/#chap3](http://SmokyLakeMaple.com/backyard/#chap3)

## Pneumatic Tire Set SKU SL-TIRESHOBBY

These straight-running wheels are well equipped to traverse uneven surfaces such as gravel or lawn. Off roading!



- ④ Due to their larger size and various other engineering considerations, the *Pneumatic* Tire Sets are intentionally fixed. Simply pick up one end of the evaporator to point it in the direction you need to go and roll away. Never force the Pneumatic Tires to turn.
- ⑤ Inflate Pneumatic Tires to 30 PSI or as directed on the side of tire.



# FORCED DRAFT

## Enhances Combustion + Increases Evaporation Rate

### Parts

- A.** Pressure Cabinet
- B.** Back Plate
- C.** Front Plate
- D.** Blower w/Cord (120 volt)
- E.** Hardware Kit
- F.** Upgraded Heavy Duty Elbow



### Recommended Tools

- 7/16" wrench
- Nut driver (Do not overtighten!)
- Rubber Mallet (Optional)

#### ADDITIONAL ITEMS NEEDED FOR PREASSEMBLED, RIVETED ARCHES ONLY:

- Drill with 1/4" Drill Bit
- Hardware (Qty 10 each): Carriage Bolts (3/4" Long, 1/4" Diameter), Lock Washers, Flat Washers, Nuts (1/4")



For a detailed assembly video, please visit [SmokyLakeMaple.com/dnt-forced-draft](http://SmokyLakeMaple.com/dnt-forced-draft)

## Forced Draft Assembly

### 1 BLOWER + BACK PLATE

Note the correct orientation of both the Back Plate and the Blower in Figure A.

Connect the Blower to the Back Plate using four 3/4" bolts. Use a washer on each side and fasten with a nut. Do not overtighten. See Figures B and C below.

**Fig B** - View of the Outside of the Back Plate



**Fig C** - View of the Inside of the Back Plate



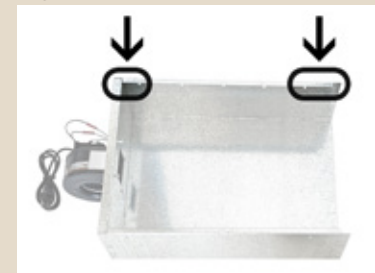
**Fig A**



Side holes are offset toward the bottom

Blower hangs downward

**Fig D**



**Fig E**



### 2 BACK PLATE + PRESSURE CABINET

Note the correct orientation of the Pressure Cabinet in Figure D. The top holes are offset to the LEFT.

Connect the Back Plate to the Pressure Cabinet using six 1/2" bolts. Fasten with a washer and a nut (Fig E). Tighten after all these bolts are in place.



### 3 PREPARE THE ARCH

If you are assembling your Arch from scratch, there are 10 bolts from step 4, page 17 which can be removed/set aside. See Figures F and G below.

If you have a riveted, factory preassembled arch, drill out the 10 rivets indicated in Figures F, G.

**NEVER remove the first bolt/rivet** which is securing proper spacing for your damper slide.

Fig F - Right Side of the Arch

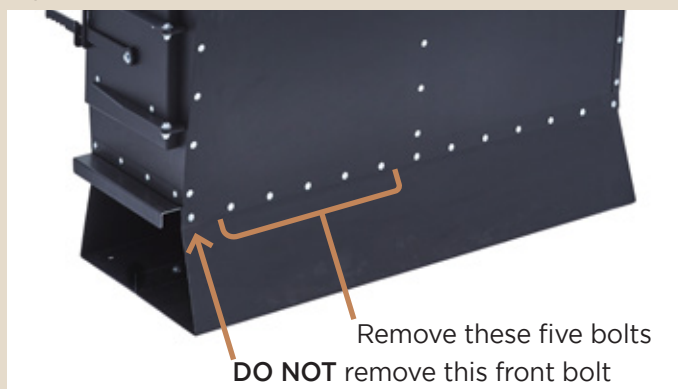
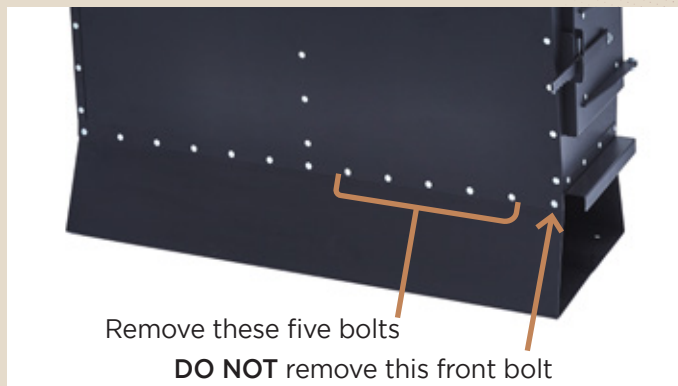


Fig G - Left Side of the Arch



### 4 ARCH + PRESSURE CABINET

Insert the Pressure Cabinet assembly from Step 2 into the Arch Base so that the Blower is facing the back of the Arch (Fig H). Fasten this in place using the same hardware that was referenced in Figures F, G. (1/4" x 3/4" length Carriage Bolt, Flat Washer, Lock Washer, Nut).

Fig H - Insert the Pressure Cabinet in the Arch



**TIPS:** Place the Arch Base on the edge of a table so that you can easily insert the Pressure Cabinet at an angle. It's helpful if someone holds the Pressure Cabinet in place while you insert the bolts. Start with a bolt in each corner. Then fill in the remaining bolts. After all the bolts, washers and nuts are in place, tighten them.

Fig I - Aerial View of the Arch



#### DOUBLE CHECK:

Open the Damper Slide on the Arch to confirm that the slots are positioned over the top of the Pressure Cabinet. These slots allow air from the blower to enter the firebox.

If the Pressure Cabinet is not encapsulating all the slots, first verify that your cabinet was not flipped backwards in Step 2. (See Fig D on pg 33.) Another explanation may be that wrong bolts were removed on the Arch (See Fig F, G to the left).





## 5 PRESSURE CABINET + FRONT ACCESS PANEL

Insert the Front Access Panel into the opening of the Pressure Cabinet so that the side drill holes are aligned. See Fig J below.

Fasten using provided hardware: 6 Bolts, Flat Washers and Lock Nuts. (See Fig E for reference)

**TIP:** Start by inserting one bolt in opposite corners. Then, if necessary, use a mallet to gently tap the edge of the panel to align the remaining bolt holes. Do not tighten until all the bolts are in place.

Fig J - Installing the front Access Panel



## 6 POWER

Pull the blower cord out the back end of the Arch Base. (Fig L) During normal operation, plug this blower into a standard 120V outlet.



Do NOT install a rheostat onto this blower. In other words, the blower should always be fully ON or fully OFF. It will not tolerate in-between voltage fluctuations.



The blower will create a lot of turbulence inside the firebox. For this reason, during normal operation, you will either close the damper OR completely turn OFF the blower BEFORE opening the firebox door to load wood.

When the firebox door is fully closed, make sure that the damper is fully OPEN and the blower is ON to resume operation.

## 7 HEAVY DUTY ELBOW



Please note that your Forced Draft Kit includes an upgraded Heavy Duty Elbow to brave the additional heat that will be generated by the Blower. **Be sure to use the Heavy Duty Elbow upgrade instead of the default twistable Elbow** which had been included with your Arch.

At this point you can return to pages 21 - 24 to finish building your Dauntless Arch. You will encounter more information about installing your Heavy Duty Elbow on page 23.



**Fig K**  
Dauntless Arch  
w/Forced Draft Kit  
(Front View)



**Fig L**  
Dauntless Arch  
w/Forced Draft Kit  
(Back View)

Install the  
Heavy Duty  
Elbow here.



## Forced Draft Kit FAQ

### What Is The Benefit of Forced Draft?

The primary benefit is increased evaporation rate. So you will be able to process more sap, faster.

A secondary benefit is that Forced Draft will help you burn through lower quality firewood.

### What Is The Purpose of the Front Access Door?

At the end of the Maple Season, you may choose to remove this front door to vacuum out the Pressure Cabinet. Frequent cleaning throughout the season is **not** necessary. The Pressure Cabinet will never completely fill with ash.

### When Should I Open/Close the Damper Slide?

During normal operation, the Damper should be wide open as shown in Fig I on Page 34.

Usually, the only time you will close the Damper is when you need to open the Firebox Door while the blower is running. By closing the Damper, you will be blocking the air turbulence in the Firebox.

### Can I Install A Rheostat On This Blower?

No. The blower cannot tolerate varying voltages. It should either be fully ON or fully OFF.

### Where Was This Kit Designed/Manufactured?

Smoky Lake Maple Products, Wisconsin. High five.





# Complete Steam Bottler

Includes Lid, Filter Tray, Tomlinson Valve, Thermometer, Steam Tray, Flat Filters



## Eliminate Sugar Sand...

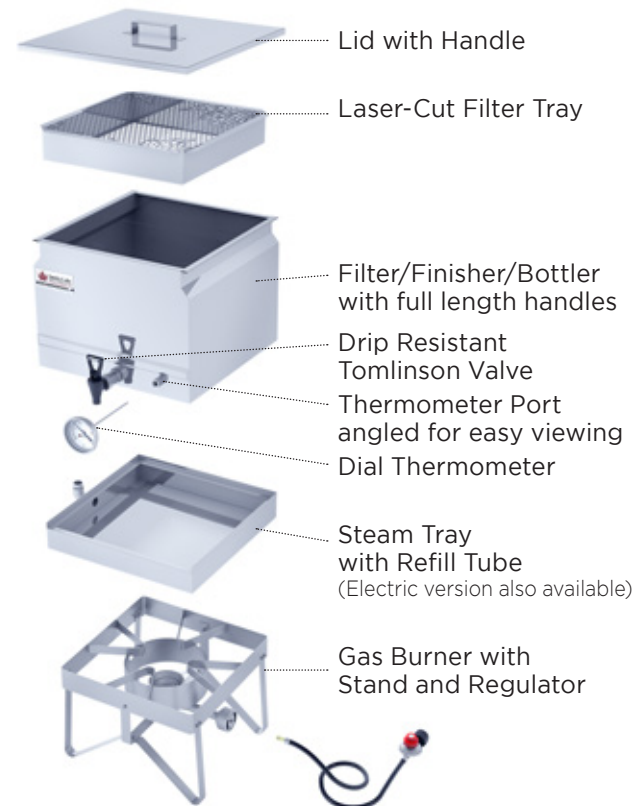
The Smoky Lake Steam Bottler is one of the most versatile pieces of equipment a maple syrup producer can own. It helps streamline the entire finishing process. So you can go from Filtering to Density Correcting to Bottling with ease.

Best of all, the Steam Bottler maintains and monitors syrup temperatures in order to prevent unsightly sugar sand from re-appearing in your filtered product.

Steam Bottlers available on **SmokyLakeMaple.com**.

Select from either propane or electric models.

An optional Vacuum Applicator System is also available.





# A Guide To VALUE-ADDED MAPLE PRODUCTS

## TOOLS

- Stainless Steel Pot/Kettle (NO COATINGS!)
- Scraper
- Metal Spoon
- Candy Thermometer
- Protective Gloves
- Canola Oil or Butter (Wipe onto pot rim to thwart foam)
- Strainer (Used for Maple Sugar only)
- Candy Molds
- Light Mist Bottle w/Water (Used to disperse bubbles/prevent crystallization on surface of cooling confections)

## WARNING!

Hot sugar and hot surfaces can burn you! Wear protective gloves/clothing.

## Maple Cream

### INSTRUCTIONS

1. Heat maple syrup to approx 235°F (22° - 24°F above the boiling point of water)  
**NOTE:** Lighter, early season syrup typically works best. Not all syrup can make cream.
2. In the same pot, rapidly cool syrup to 75°F and avoid any agitation to prevent premature crystallization.
3. Stir slowly. And stir and stir. The cream is complete when it has become opaque and has the consistency of soft peanut butter. If stirring is stopped too early, larger crystals may develop, creating a more grainy texture.

### STORAGE

Store in a wide-mouth, airtight container. Can be refrigerated up to two months or frozen up to a year. If separation occurs, simply stir to reconstitute.

### USES

This spread adds amazing flavor to any muffin or toast and can be substituted for jelly. It also serves as a delightful fruit dip.

## Maple Sugar

### INSTRUCTIONS

1. Heat maple syrup to approx 260°F (45° - 50°F above the boiling point of water)
2. Cool to 200°F
3. Stir until all moisture has evacuated and the sugar is granulated
4. Sift with a course screen to divide into uniform texture.

### STORAGE

Dry, airtight container, room temperature.

### USES

Maple Sugar is a flavorful substitute for cane sugar or brown sugar in any recipe.



Larger bits can be used as sprinkles or ground into finer particles with a blender.

## Maple Candy

### INSTRUCTIONS

1. Heat maple syrup to approx 245°F. (32° - 34°F above the boiling point of water)
2. Cool to between 160°F - 200°F (Cooler temp = finer sugar crystals, but will allow less time to pour into molds before hardening.)
3. Stir several minutes until crystals form and it becomes more opaque.
4. Pour into the candy molds before hardening, and allow to cool on a level surface.
5. Candies can be removed from the molds within approx. 30 minutes.

### STORAGE

Dry, airtight container, room temperature. If frozen, allow to sit/dry before resealing them at room temperature.


### USES

Maple Candy stands on its own as a delightful treat. It is also a quick, fun sweetener to stir into your morning coffee.





**Product Support: [SmokyLakeMaple.com/support-dauntless](https://SmokyLakeMaple.com/support-dauntless)**

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