

# OPERATION

## Seasoning Your Stove

Both soapstone and steel need to be seasoned. The seasoning can be accomplished through a series of small to moderate fires. Your Woodstock Soapstone Stove is an easy stove to season, because even a small fire will provide hours of radiant heat once the stove is warm. **There are two things you will notice during the first fire:**

**First, there will be a hot, acrid smell as the stove heats up.** This smell is a result of the paint on the stove and pipe curing. You will want to have your first fire on a day when you can open the windows in the house to provide adequate ventilation. The odor is non-toxic and will only be present for the first few fires.

**Second, there will be some condensation on the glass.** This condensation is a result of any moisture being driven out of the stove and condensing on the inner surface of the glass. It takes a couple of small fires to season the stove and remove this excess moisture.

## Starting a Fire And Establishing Proper Draft

1. Open the catalytic bypass. The bypass lever is located above loading door either on the right or left side of the stove. Lift the bypass lever up until it stops to bypass the catalytic combustor. The bypass must be opened before opening the load door.
2. Open the combustion air damper by lifting the knobbed handle up to the 4 position. The air damper is located at the rear of the stove (same side as the loading door). Push the handle slightly away from the stove and move the lever up, this allows maximum air into the firebox.
3. **Always confirm there is adequate draft before lighting the fire.** Hold a lit match or light a small piece of newspaper in the top/ front of the firebox, where smoke exits. If the flame is drawn out of the firebox, toward the flue, proceed with lighting the fire. If the flame stands still or is pushed away from the flue exit, you must establish a good draft before lighting a fire. A hair dryer or heat gun pointed at the flue exit is a good way to establish draft without creating a lot of smoke. After you think you have draft, retest with a match.
4. Once good draft has been established, build a fire on the floor of the firebox.  
**DO NOT USE ADDITIONAL GRATES, ANDIRONS OR ANY OTHER METHODS TO SUPPORT THE FUEL IN THE FIREBOX.** Start with crumpled newspaper and dry kindling.
5. Add small splits of firewood once the kindling has ignited. This will establish a bed of hot coals.
6. Add small to medium splits onto the hot coals. Assuming the wood is dry, the fire should spread through the wood. After about 10 minutes, close the air damper down around the 3 mark.
7. After the single wall pipe temperature reaches 250°-300°F, close the bypass by lowering the handle down to the closed position. All of the smoke from the firebox will now pass through the catalytic combustor. The combustor will generate a substantial amount of heat as it "burns" the smoke passing through it.
8. Adjust the air control damper to a lower setting, the best burn setting is between 1 and 2. Push the air damper handle gently away from the stove and push it down to a lower air setting. The closer the lever is to the bottom of the stove, the lower the burn rate, as less air is entering the firebox. The final damper setting will be determined by the desired heat output from the stove, the condition of the wood being burned, and the draft through the chimney system.



*The bypass lever interlocks with the door when the combustor is engaged (bypass closed). This safety feature makes it impossible to open the loading door without opening the bypass.*



*The amount of combustion air available in the firebox is controlled by the damper lever.*



*Check draft and preheat the chimney if necessary*

# Engaging the Catalytic Combustor

The catalytic combustor will start to burn the gases and particles in the smoke when the temperature of the smoke reaches approximately 500°F (internally), or after about 5-15 minutes of establishing a strong fire. Each stove comes with a magnetic thermometer. Use the thermometer to monitor your stove/pipe temperatures. The temperature of the single wall pipe is approximately 1/2 the temperature of the exhausting smoke, so when the thermometer on the stove pipe reads 250°F, it is approximately 500°F inside. You will find that after the combustor is engaged, temperatures will often stabilize or lower on the pipe - evidence that the heat isn't getting lost up the chimney!

Engage the combustor by lowering the bypass handle (above the loading door) until it closes completely. Then reduce the air damper setting to achieve the desired burn rate. Make fine adjustments to your air control damper by moving it slightly up or down. You may find that you can achieve the longest burn when the damper is only slightly open. In the Absolute Steel Hybrid, allowance is made for a small amount of primary and secondary air to enter the stove even when the damper is fully closed, and the stainless steel catalyst will work efficiently at low to moderate firing rates, thus preventing creosote formation or excessive smoke from your chimney.

	<b>CAUTION</b>
<b>NEVER USE GASOLINE, GASOLINE TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID OR SIMILAR LIQUIDS TO START OR "FRESHEN UP" A FIRE IN THIS STOVE. KEEP ALL SUCH LIQUIDS WELL AWAY FROM THE STOVE WHILE IT IS IN USE.</b>	

## Low & Overnight Burning

These instructions are intended as a guide to operating your wood stove. Your timing and final damper settings will vary depending on chimney draft, type of wood, moisture content of the wood and size of the splits. The Absolute Steel Hybrid is simply designed and intended to be user friendly, but it will take some practice to understand how the stove works best for you.

1. Before you open the loading door, you must fully open the catalytic bypass and the air damper. Wait a minute or so, before opening the loading door slowly, for a strong draft to be established to prevent smoke from spilling back into the room.
2. Wearing stove gloves, open the loading door and stir up the hot coals. If necessary, excess ash should be removed before reloading the firebox. If your stove has the optional ash pan, simply rake the hot coals back and forth in the firebox to allow the loose ash to fall through the center grate into the ash pan. If your stove does not have an ash pan, push the hot coals to one side and shovel the loose ash into a non-combustible ash container with a tight fitting lid. Dispose of the ash properly.  
**NEVER PUT AN ASH CONTAINER ON A COMBUSTIBLE SURFACE, LIKE A WOOD FLOOR.**
3. Place several small splits on top of the hot coals and allow them to ignite.
4. Load the firebox to capacity leaving roughly 2" of space for secondary combustion, with a mix of larger and smaller splits. Close the loading door.
5. Allow the temperature on the exterior of single wall pipe to come back up to 250°, this may only take 5-15 minutes depending on the dryness of the wood and draft conditions.
6. Adjust the air damper to a low setting, around the 1 - 1.5 position, by lowering the air damper handle down.
7. Close the catalytic bypass by lowering the lever until it stops.
8. Initially the fire may appear to die out. This may cause a small amount of soot to collect on the glass. Any buildup on the glass should go away with higher temperature burns.



*Bypass lever should be up when starting or reloading the Absolute Steel. Allowing the smoke to heat up to 500° F*



*The bypass lever interlocks with the door when the combustor is engaged (bypass closed). This safety feature makes it impossible to open the loading door without opening the bypass.*

**NEVER BURN THE STOVE WITH THE AIR DAMPER FULLY OPEN EXCEPT WHEN KINDLING A FIRE OR RELOADING THE FIREBOX. NEVER BUILD A ROARING FIRE IN A COLD STOVE. IT TAKES AT LEAST 30 MINUTES TO HEAT THE INNER SOAPSTONE PANELS OF THE ABSOLUTE STEEL HYBRID. ATTEMPTS TO REACH HIGH TEMPERATURES VERY QUICKLY COULD RESULT IN DAMAGE TO THE STEEL OR SOAPSTONE PARTS.**

# Burning for Higher Heat Output

These instructions are intended as a guide to operating your wood stove. Your timing and final damper settings will vary depending on chimney draft, type of wood, moisture content of the wood, and size of the splits. The Absolute Steel Hybrid is simply designed and intended to be user friendly, but it will take some practice to understand how the stove works best for you.

1. Before you open the loading door, you must fully open the catalytic bypass and the air damper. Wait a minute or so to establish a strong draft. This will help to keep smoke from spilling into the room.
2. Open the load door and stir up the coals and remove excess ash as needed.
3. Place several small splits on top of the hot coals and allow them to ignite.
4. Load the firebox to capacity leaving about a 2" space for secondary combustion at the top, with a mix of larger and smaller splits. Close the loading door.
5. Allow the fresh wood to become involved in the fire. With dry wood this may take 5-15 minutes, or until the exterior of single wall pipe reaches 250°. Lower air damper handle down to the 3 position.
6. Close the catalytic bypass by lowering the lever until it stops.
7. You should see the flames from secondary combustion at the top of the firebox becoming more active. Adjust the air damper to approximately the 2 position.

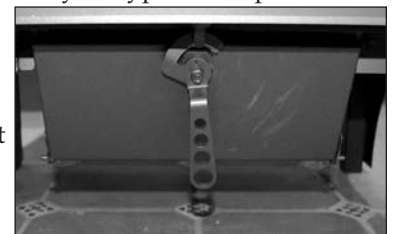
## Ash Removal

### NEVER BURN THE STOVE WITH THE ASH DOOR OPEN!

#### Without an ash pan:

If your Absolute Steel Hybrid does not have an ash pan you will have to remove ash through the side loading door, approximately every 5-7 days if the stove is in continuous operation. You do not have to let the fire die out completely to remove the ashes, but the fire must be reduced to hot coals. First make sure that both the catalytic bypass damper and the air control damper are open. This will increase the draft and prevent smoke from entering the room.

Open the side loading door and move the hot coals to one side or the back of the firebox. Scoop out the ashes that were underneath the coals, place them into a metal container with a tight fitting lid and then reverse the procedure. Leave some ash and hot coals in the bottom of the stove to help rekindle a fire.



*The ash Pan door is located on the loading door side of the stove, below the ash lip.*

#### With an ash pan:

If your Absolute Steel Hybrid is in continuous operation, you will probably need to empty the ash pan every 7-10 days. You do not have to let the fire die out completely, but make sure that it is reduced to hot coals. Open the catalytic bypass damper, and open the air control damper. Remember to wear stove gloves - the ash pan will be hot! Open the ash pan door located on the same side as, and below the loading door. Carefully slide the lid into place on the top of the ash pan and remove the ash pan from the base of the stove. The lid slides over the long top edges of the ash pan. Close the ash pan door before emptying the ashes into an appropriate container.



*The ash pan door drops down and the ash pan slides out from under the stove for easy ash removal.*

Do not open the ash removal door while the stove is in the middle of a long burn, because the additional draft created under the fire could cause the stove to burn excessively hot and the ash pan itself will be very hot, and full of live coals. If you are burning your stove 24 hours/day, it is often easiest to empty the ashes first thing in the morning, after an overnight burn.

**ASHES SHOULD BE EMPTIED INTO A METAL CONTAINER WITH A TIGHT FITTING LID. THE CLOSED CONTAINER OF ASHES SHOULD BE PLACED ON A NONCOMBUSTIBLE FLOOR OR ON THE GROUND, WELL AWAY FROM ALL COMBUSTIBLE MATERIALS, PENDING FINAL DISPOSAL. IF THE ASHES ARE DISPOSED OF BY BURIAL IN SOIL OR OTHERWISE LOCALLY DISPERSED, THEY SHOULD BE RETAINED IN THE CLOSED CONTAINER UNTIL ALL CINDERS HAVE THOROUGHLY COOLED. LIVE CINDERS CAN TAKE 36 HOURS OR LONGER TO COOL.**

**NEVER SHOVEL ASHES INTO A COMBUSTIBLE CONTAINER LIKE A CARDBOARD BOX OR A PLASTIC BUCKET. DO NOT USE A VACUUM CLEANER TO REMOVE ASHES UNLESS IT IS SPECIFICALLY DESIGNED FOR WOODSTOVE ASH REMOVAL. NEVER LEAVE A CONTAINER OF HOT ASHES ON A WOOD FLOOR, PORCH, OR ANY COMBUSTIBLE SURFACE.**



# The Pipe Thermometer

We recommend placing the thermometer 8"-10" above the flue collar on **single wall** stove pipe if the stove is vented out the top. If the stove is rear vented, the surface thermometer should be placed on the steel plate toward the back of the stove.

If you are reading the single wall stove pipe temperature, the interior flue exhaust temperature is about twice as hot. Since the 22 gauge sheet metal pipe is more reactive (faster heat transfer) than the stove top, you will find you can engage the combustor sooner. We recommend engaging your catalytic combustor once the pipe thermometer reaches 250° F.

Once the combustor is engaged, you should see the stove surface temperature rise and the pipe temperature stabilize, then drop, indicating catalytic combustor activity. From a cold start it may take about 30 minutes to get the stove up to temperature. If you are reloading a hot stove, wait approximately 5-15 minutes before engaging the combustor. The thermometer is not a precise instrument – it will not tell you the exact temperature inside the firebox or in the flue.



*Place the surface thermometer 8" above the stove top for top vent, or on the cover plate for rear vent.*

## Overfiring

Burning a stove frequently at excessive temperatures is known as overfiring. When the surface temperature is consistently over 700° F, the stove has reached 1400° F inside. Operation with temperatures in this range can lead to metal warping, becoming brittle, and eventually deteriorating completely. It can shorten the useful life of the catalytic combustor.



### **DO NOT OVERFIRE THIS WOOD STOVE!**

**ATTEMPTS TO ACHIEVE HEAT OUTPUT RATES THAT EXCEED STOVE DESIGN SPECIFICATIONS CAN RESULT IN PERMANENT DAMAGE TO THE STOVE AND TO THE CATALYTIC COMBUSTOR.**

Avoid overfiring by letting the combustor and secondaries do most of the work in the stove. Your stove is operating at peak efficiency when the combustor is "engaged" and the secondaries are ignited, with the damper lever set to a low to moderate setting, and the logs are glowing with secondary flames apparent. You will get the greatest amount of heat per pound of wood when the stove is operated in this manner.

## Daily Use

Your Absolute Steel Hybrid stove is well suited for continuous firing on a 24 hour a day basis. It will burn for hours on one load of wood, and will provide steady, even, heat for hours after the fire dies down. You need only disengage the catalytic combustor when you kindle a fire, or reload the stove. Once the catalyst is ignited, it will continue to function as long as there is smoke to burn.

Your connector pipe and chimney, or chimney pipe, should be inspected at regular intervals (not less than once every two months). Examine the connector pipe for creosote, corrosion, loose seams, or excessive soot. Clean and replace as necessary. The chimney or chimney pipe should be cleaned and checked by a certified specialist once a year. A small mirror held at the cleanout door of a masonry chimney will be helpful. For a Class A prefabricated metal pipe, some disassembly is usually required.



*The top plate comes in several styles and can be used as a trivet for cooking.*

## The Cook Top

The top lid of the Absolute Steel Hybrid wood stove consists of a decorative metal plate. The lid has been designed to enhance the beauty and versatility of your stove. The steel cook top is not designed as a cooking surface and food should always be placed in a heavy duty Dutch oven or skillet, not directly onto the steel surface.

## The Fall-Away Tool

The "fall-away tool", which comes with your stove, can be used to operate the door latch and the bypass lever. Simply insert the tool into the door handle circle to use to safely open/close the loading door. The loading door and the door handle are very hot, so use the tool provided. The "fall-away tool" conforms to UL requirements and is made so that if you let go of it, it will "fall-away" from the stove and not become too hot to handle.



*Fall-Away Tool shown hanging off the stove.*

# Firewood

Your Woodstock Soapstone Absolute Steel Hybrid Wood Stove is designed to burn dry, natural cordwood. Higher efficiency and lower emissions generally result when burning air dried hardwoods, as compared to green, freshly cut hard woods. It is perfectly fine to burn soft woods in your stove as long as they are properly dried. Hardwoods are preferable because they are typically denser than soft woods which gives them a higher fuel value per volume.

The moisture content of some trees may range as high as 50% – i.e., there is as much moisture in the tree as there is wood. After wood has been cut to length, split and stacked for a year, the moisture content will usually range from 15-25%. Splitting wood before it is stored will reduce drying time. Properly dried wood will produce more heat, reduce the likelihood of water vapor condensing in the chimney, forming creosote, and result in less pollution entering the air. It is safer and more efficient to burn dry hardwood than green or wet wood that smolders.

The advantages of burning dry wood are many. Dry wood is lighter, easier to split, and easier to carry. It is easier to light, produces more heat, and generates less pollution. If you burn wet wood much of the energy generated by the fire is used to drive moisture out of the wood, rather than producing heat for you. Dry wood will maintain the highest combustor temperatures and burn the most efficiently. Creosote is much less likely to form if you burn dry wood.

There are several ways to determine if wood is properly dried. Visual “checking” on the end of the wood splits, dry wood will feel lighter, if you bang two pieces of dry wood together it will sound hollow (wet wood will sound solid & dull), and no bubbling or sizzling from the wood as it burns. Moisture meters are a great way to determine the percentage of moisture content in wood. Moisture meters utilize two pin probes that insert into the wood and read the percentage of moisture. Moisture meters can be purchased online.



Dry Firewood will show “checking” or cracks at the end of the split

Common symptoms of burning wet wood include: Difficulty getting the fire started, smokey fire, dirty glass, creosote buildup within the stove pipe and/or chimney, low heat output, short burn times, and excessive wood use.

**DO NOT BURN pressure treated or painted wood, unseasoned wood, coal, garbage, solvents, lawn clippings or yard waste, materials containing rubber; including tires, plastics, petroleum products, paints, paint thinners, asphalt products, materials containing asbestos, construction debris, railroad ties, manure or animal remains, salt water driftwood or other salt treated saturated materials, or paper products, cardboard, plywood, or particle board in your Woodstock Soapstone Absolute Steel Hybrid Wood Stove.** The prohibition against burning these materials does not prohibit the use of fire starters made from paper, cardboard, saw dust, wax and similar substances for the purpose of starting a fire in the Absolute Steel Hybrid.

Coal and artificial logs burn much hotter than wood and could cause damage through overheating the steel or the soapstone panels. Burning treated wood, garbage, solvents, colored paper or trash may result in the release of toxic fumes and may poison or otherwise render the catalytic combustor ineffective and cause smoke.

Burning cardboard, loose paper, and trash will add significantly to ash and soot buildup, and it will not produce much heat. Fly ash from improper fuel can also coat or plug the combustor, causing smoke spillage into the room. Under normal operating conditions, the Woodstock Soapstone Stove is designed to last for generations. It is not, however, designed for continuous over-firing, or firing with coal, artificial logs or trash.

## DO NOT BURN!

- UNSEASONED WOOD
- TREATED/PAINTEd WOOD
- COAL
- GARBAGE
- CARDBOARD
- SOLVENTS
- COLORED PAPER
- TRASH
- LAWN CLIPPING
- RUBBER PRODUCTS
- PLASTICS
- PETROLEUM PRODUCTS
- PAINT/PAINT THINNER
- MATERIALS CONTAINING ASBESTOS
- DRIFTWOOD
- ASPHALT PRODUCTS
- RAILROAD TIES
- MANURE/ANIMAL REMAINS
- PLYWOOD/PARTICLE BOARD