OPERATION

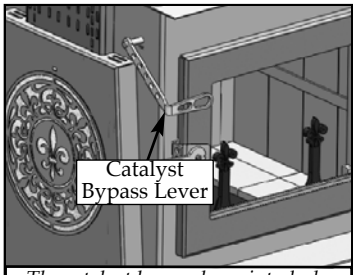
Seasoning Your Stove

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.

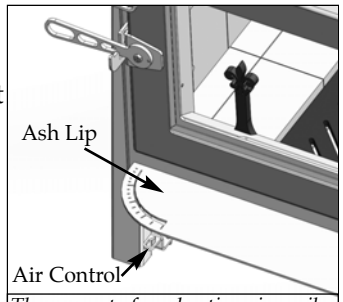
Starting a Fire And Establishing Proper Draft



The catalyst bypass lever interlocks with the front load door

1. Open the catalytic bypass. The bypass lever is located at the left front of the stove just above the loading door handle.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 moving the lever in front . The air damper is located at the lower left corner at the front of the stove. Slide the lever to the right toward the center of the stove to the open position. The lever will stop when fully open. Maximum air is allowed into the firebox.



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

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 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, re-test 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.


Check draft and preheat the chimney if necessary

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 between 3/4 and 1/2 open.

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 around the 1/4 open mark. Slide the lever to the left. The closer the lever is to the face 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.

NOTE: The above procedures, times, and positions are a guide. Your conditions will vary depending upon draft, wood moisture and size, and weather conditions.

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 500ºF (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 or the stove top is approximately 1/2 the temperature of the exhausting smoke, so when the thermometer on the stove pipe reads 250ºF, it is approximately 500ºF inside. You will find that after the combustor is engaged, the pipe temperature will often stabilize or lower, while the stove surface temperature rises - evidence that the heat isn't getting lost up the chimney!

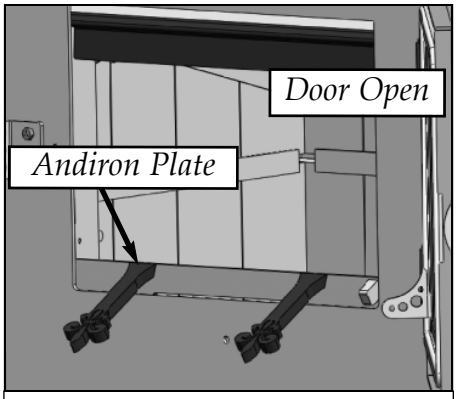
CAUTION

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.

Engage the combustor by lowering the bypass handle (front of the stove) down 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 left or right. You may find that you can achieve the longest burn when the damper is only slightly open. In the Ideal 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.

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 Ideal 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.



In this picture, andirons have been pulled forward for loading.

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. The Ideal Steel is equipped with a smoke flap which drops down when the loading door opens. The smoke flap will help keep smoke from spilling out of the loading door.

2. Wearing stove gloves, open the loading door and tip the andirons forward. 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. Tip the andirons to the upright position. 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.

6. Adjust the air damper to a low setting, around the 1/4 open mark, by sliding the lever to the left.

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.

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 soapstone panels of the Ideal Steel, if equipped. 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 Ideal 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 tip the andirons forward (see image on pg 15)**.** 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. Tip the andirons to the upright position. 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°. Slide the air damper lever to the left and close approximately half way.

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 1/3 open.

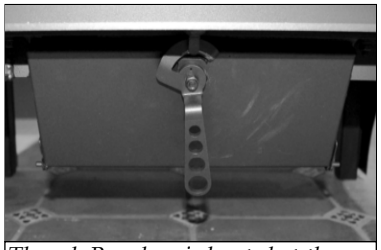
Ash Removal

NEVER BURN THE STOVE WITH THE ASH DOOR OPEN!

Without an ash pan:

If your Ideal Steel Hybrid does not have an ash pan you will have to remove ash through the front 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.

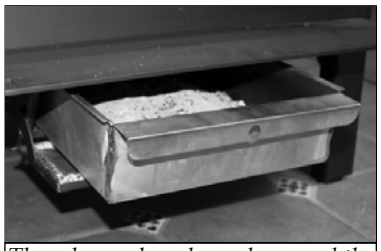
Open the front door and tip the andirons forward. Move the hot coals to one side or the back of the firebox. Scoop out the ashes that were underneath the coals, and then reverse the procedure. Leave some ash and hot coals in the bottom of the stove to help rekindle a fire.



The ash Pan door is located at the front of the stove, below the ash lip.

With an ash pan:

If your Ideal Steel 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 at the front of the stove, 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.



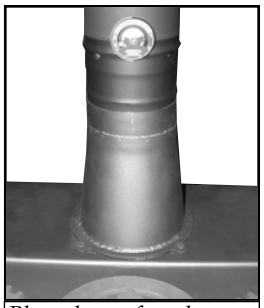
The ash pan door drops down and the ash pan slides out from under the stove for easy ash removal.

<u>Do not open the ash removal door while the stove is in the middle of a long burn</u>, 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 <u>first thing in the morning, after an overnight burn.</u>

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



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

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 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.

The Probe Thermometer

A probe thermometer is provided for measuring the temperature immediately downstream of the catalytic combustor. This thermometer installs in a port right below the top lid of the stove, and the sensing end of the probe extends to within 1 inch of the face of the catalyst. The probe is calibrated from room temperature to 1700 degrees F. The catalyst can be engaged as soon as the temperature on this probe exceeds 400 degrees F, or as soon as the temperature on the pipe thermometer exceeds 250 degrees (see above).

The probe thermometer is located in the front of the stove, centered under the top lid

The best operating range for the catalyst is from 500 - 1400 degrees F. When the temperature on the probe thermometert exceeds 1400^{O}F, we recommend closing the damper to prevent excessive heat from occuring

Overfiring

Burning a stove frequently at excessive temperatures is known as overfiring. When the surface temperature is consistently over 700º F, the stove has reached 1400º 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.

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.

DO NOT OVERFIRE!

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

Daily Use

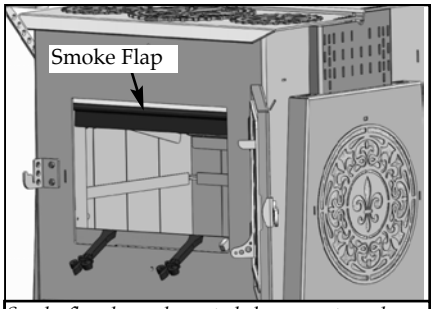
Your Ideal Steel Hybrid stove is well suited for continuous firing on a 24 hour a day basis. It will burn for hours on one load of wood, and will provide steady, even, heat for hours after the fire dies down. You need only disengage the catalytic combustor when you kindle a fire, or reload the stove. 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.

Smoke Flap

The Ideal Steel Hybrid is a front loading stove with a large loading door. In order to reduce the occurrence of smoke spillage upon reloading, we've incorporated a drop down smoke flap. This flap proved to be essential in reducing smoke in the home, especially for those who have a marginal chimney draft. Upon opening the loading door, the hinged smoke flap

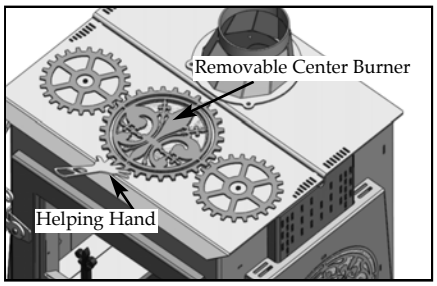
will drop into a down position at the top of the door opening. When closing the loading door, the smoke flap will be pushed back out of view. This flap can be locked into an upright positon to keep it out of the way for loading, or it can be removed from the stove, if you find this feature to be unecessary in your installation. To lock the smoke flap in the upper position, simply take a hearth tool, like a poker, and push it up and back. To release the smoke flap from the locked position, push up on the latch located on the upper left side of the door opening (about 2" down), using a hearth tool or the provided helping hand. Do not attempt to remove the flap while the stove is hot.



Smoke flap drops down to help prevent smoke spillage.

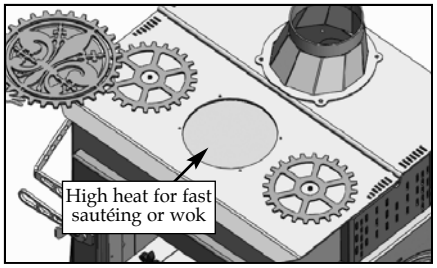
The Helping Hand

The "helping hand", which comes with your stove, can be used to operate the door latch. Simply insert the bent finger 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 "helping hand" 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.



The Cook Top

The top lid of the Ideal Steel Hybrid woodstove consists of a three-piece decorative metal set. The lid has been designed to enhance the beauty and versatility of your stove. The cook top has three distinct areas that provide high, medium, and low temperature zones for more cooking flexibility. The center "burner" can be removed to expose a stainless steel surface which delivers the highest heat. The left and right burners are elevated about 1/8" and the center burner is elevated 1/4" . 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 decorative metal set can be easily removed and the steel cook top/lid will stand upright to access the catalytic combustor below. This easy access makes cleaning and replacing the combustor very user friendly.



Firewood

Your Woodstock Soapstone 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.

DO NOT BURN TREATED OR PAINTED WOOD, COAL, GARBAGE, CARDBOARD, SOLVENTS, COLORED PAPER, OR TRASH IN YOUR WOODSTOCK SOAPSTONE STOVE. Coal and artificial logs burn much hotter than wood and could cause damage through overheating the 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.

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
- Treated Wood
- Coal
- Garbage
- Cardboard
- Solvents
- Colored Paper
- Trash