

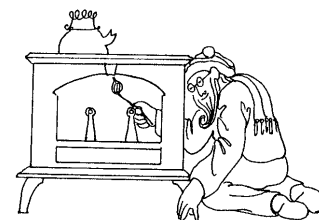
Woodstock Soapstone Company's Customer Service Representatives are available by phone Monday through Saturday from 9 a.m. to 5 p.m Eastern. You can reach us by calling toll-free 1-800-866-4344 or e-mailing [info@woodstove.com](mailto:info@woodstove.com). This troubleshooting guide is intended to help you understand more about the operation of your stove and to be a helpful, accessible resource for you.

## The Quick Draft Test

Many stove performance problems are caused by poor draft. One of the first things to do when diagnosing operational problems is to be sure that you have adequate draft. If you perform the simple draft test that follows, it will often tell you where to look for a solution to your operational problems. (If the draft is not good, you would look for problems (1) with basic chimney specifications, (2) with obstructions inside the chimney, (3) with a tight seal between the stovepipe and the chimney - especially in fireplace installations, (4) with wind, (5) with negative house pressure, and so on. If the draft is good, you would generally look for problems within the stove or with the operation of the stove - (1) a plugged combustor, (2) plugged air passages, (3) wet or unseasoned wood, for example.) Here's the test:

**1. Perform The Match Test:** Light a match in front of the flue outlet inside your stove. If the flame is drawn toward the outlet and chimney, then you have adequate draft to light your stove. If the flame doesn't move or is leaning toward you, you do not have enough draft and need to correct this situation before starting a fire.

**2. How To Improve Draft Before Re-Testing:** Open a door or window in the room where the stove is installed. Wait a minute or two, then light a match again in front of the flue outlet. The flame should be pulled into the flue opening. If this doesn't work, light a small piece of rolled up newspaper and hold it in front of the flue outlet. This should warm the chimney enough to establish proper draft. If this does not work, you have a draft problem. **DO NOT** light the stove, because you will simply get smoke back into the room. Read carefully the grid below, and try to determine the source of the draft problem. Feel free to call us for help at 800-866-4344. Our toll free customer service help line is open from 9 to 5, Monday through Saturday.



Check the draft with the "Match Test" before you light the stove.

## Troubleshooting Grid:

Use this grid to help identify the cause and solution for common woodstove problems.

Problem	Cause	Solution
<b>Stove Smokes At Start Up</b>	Bypass damper or air damper is closed.	Check that air control and bypass damper are both open (both handles all the way down).
	Chimney is blocked.	Clear chimney and cap of obstructions.
	Flue is cold.	Warm the flue with burning newspaper or a hair dryer and re-check draft with match.
	Negative pressure in room.	Turn off exhaust fans, open window in the room, then do the match test.
	Small difference between outdoor and indoor temperatures.	Prime the chimney by burning newspaper in the flue.
	Flue is too large.	Install a liner that reduces the size of the flue to no more than 3 times the cross sectional area of stove's flue outlet.
<b>Stove Puffs Smoke When Combustor Is Engaged</b>	Combustor is plugged.	Let the stove cool down and clean the combustor.
	Not enough air for the fire.	Increase the amount of air coming into the stove by opening air damper.

Problem	Cause	Solution
Stove Smokes Occasionally/ Erratically	Wind forcing smoke down chimney.	Increase height of chimney or invest in wind cap.
	Negative pressure in the home.	Turn off exhaust fans, open a window in the room, consider solving pressure problems with an HVAC professional.
	Inadequate draft.	Increase the amount of air coming into the stove by opening air damper.
	Wet wood.	Use smaller pieces of dry split wood.
	Flue is too large.	Install a liner that makes flue no more than 3 times cross sectional area of stove's flue outlet. 10" square or 12" round is the maximum.
	Multiple inlets to chimney.	Connect stove to a chimney that only has one appliance per flue. Block other inlets properly.
Warping Or Breaking Of Cast Iron Parts	Overfiring as a result of compensating for wet wood.	Burn dry, seasoned hardwood.
	Overfiring - too much primary air.	After kindling a fire and getting the firebox temperature to 500° (250° on stovetop or about 450° on stovepipe), engage the combustor by bringing the bypass handle up and reduce the air damper to 1. You should see the bright yellow flames slow down and become more orange in color. Make fine adjustments to your damper (moving it closer to 0 in 1/8 to 1/4 inch increments) until you achieve this slower moving, darker flame.
	Overfiring after reloading firebox.	After reloading the firebox, let the firebox temperature come up over the 500° mark before re-engaging the combustor and re-adjusting your air control as above.
<p><i>Note: The cast iron parts in your stove are high quality class 30 grey iron. They will withstand normal operating temperatures of up to 1400 degrees. When iron parts become warped or heavily oxidized (reddish-brown in color, with a rough surface), it is evidence that they have been repeatedly exposed to temperatures above 1400 degrees.</i></p>		
Cracks On Surface Of Combustor	Direct flame contact or mishandling.	Hairline cracks can result from normal operation. Bypass combustor when air is plentiful and flames are high. Handle gently.

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
<b>Combustor Not Glowing</b>	Late stage in burning cycle.	The combustor does not need to glow to be working. Check smoke issuing from chimney to ensure combustor is working properly.
<b>Stove Burning Too Hot Or Too Fast</b>	Excessive air fueling fire.	Adjust air control on stove. Check gaskets with dollar bill test (close the door on a dollar bill. If you can pull the bill out between the door and gasket, the seal is too loose) on loading door, bypass door, ashpan door. Replace gaskets if necessary. Consider installing pipe damper in chimneys with excessive draft.
<b>Stove Not Burning Hot Enough</b>	Combustor not firing.	Follow instructions for starting fire and make sure firebox is up to 500° before engaging combustor. Once combustor is engaged, set air control at 1 and leave alone.
	Wet wood.	Test stove by making a fire with wood that is kiln dried (available at supermarkets or Woodstock Soapstone).
	Heat going up chimney.	Test by attaching thermometer to stovepipe. Temperature on stovepipe should register 200° - 300° while combustor is engaged. Consider installing pipe damper.
<b>Acrid Odor During First Burn</b>	Paint curing/window gasket curing.	Open windows and try to leave house during first several burns until paint/gasket is cured.
<b>Window Dirty</b>	Air flow restricted.	Check air gap at top of stove window inside stove. There should be 1/4" gap between glass and edge of cast iron. A smaller gap may cause window to soot.
	Smoldering fire.	Open air control in 1/4 inch increments until some slow flames appear. Run hot fire to burn smoke off the glass. Or, remove build-up with glass cleaner when stove is cold.
<b>Water Leaking From Chimney</b>	Rain coming down chimney without a cap.	Install a cap on chimney.
	Stovepipe installed incorrectly.	Install stovepipe crimped end down to allow condensation to run back inside the stovepipe and stove instead of running down outside of pipe.
	New masonry chimney curing.	Burn several fires without using combustor in order to heat inside of new chimney and cure masonry completely.
	Failure of seal on storm collar.	If water is leaking along outside of pipe, most likely rain is getting through between storm collar and chimney pipe. Re-caulk.

## The Four Main Causes Of Catalytic Combustor Failure

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Your catalytic combustor is expected to last through 12-14,000 hours of use. There are four typical reasons for combustors to fail early.

- 1. Poisoning.** Burning trash, wrapping paper, fake logs, painted or chemically treated wood can poison your catalytic combustor. Once poisoned, the catalytic treatment inside the honeycomb of the combustor will be rendered ineffective. We recommend that you burn only dry hardwood.

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- 2. Plugging.** Your catalytic combustor should be cleaned regularly (every 6 weeks or every cord of wood) throughout the heating season. If you do not clean the combustor, the cells will become plugged with fly ash (a normal byproduct of burning). Once some of the cells are plugged, the other cells will be processing more of the smoke traveling through the combustor. Before long, the cells will deteriorate. See the *Catalytic Combustor* chapter for details on cleaning the combustor.

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- 3. Flame Impingement.** The structure of the catalytic combustor is created under very high heat conditions and can withstand temperatures in excess of 1400°. However, the structure of the combustor is sensitive to prolonged exposure to direct flame. The metal screen in front of your combustor is designed in part to keep flames from hitting the combustor directly. However, if the stove is run with too much air supply, the flames will have an increased likelihood of striking the combustor and compromising the integrity of the combustor.

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- 4. Moisture.** All wood contains some moisture. Some wood has more than others. Catalytic combustors are impacted by moisture in two ways. First, if you are burning wet wood then there will be a higher percentage of moisture in the wood smoke passing through the combustor. This moisture eats away at the structure of the combustor and leads to crumbling of the cells. The additional moisture also tends to trap more particulates and create plugging (see #2). Second, the first thing that happens when you burn wood is that the moisture in the wood is evaporated and given off as steam. This is part of the reason for waiting until the firebox has reached 500°F before engaging the combustor. When you are reloading the stove, you should always allow some time (15-20 minutes) for the moisture in the new wood to burn off before you re-engage the combustor. While the stove top thermometer may read over the 250° mark on the stove, sending the moisture through the combustor will stress the ceramic structure and lead to cracking and crumbling of the cells.