

WOODSTOVE 101

It's helpful on occasion to review some basics of woodstove operation. When problems occur, often we tend to blame the woodstove instead of looking at the whole picture.

For the most part, a stove is only going to work as well as the chimney it is connected to. If the stove is connected to a poorly drafting chimney, the result will be a poorly working stove.



What is draft? Draft is defined as the pressure difference that is available to drive the flow of air and/or smoke through an appliance and its venting system. Natural draft is the pressure difference created in a venting system by the temperature difference between the air and/or smoke in the venting system and the outdoor air. The greater the temperature difference the stronger the draft.

There are many variables that will affect draft and thereby affect the stove's performance.

Outdoor Temperature The colder it is outside the greater the temperature difference between the flue gasses and the outside leading to a better draft. To increase the temperature difference even more, one can increase the flue gas temperature.

Chimney Location An inside chimney will generally have a better draft than an exterior chimney—sustaining more heat—which better supports a stronger draft.

Resistance Resistance can also effect the amount of draft. The more resistance in a chimney the more it will weaken the draft. Resistance can be the number of turns in the chimney system (we recommend no more than two elbows), rough edges in the chimney or a square flue versus a round flue.



Flue Size Flue size also plays a roll in draft. Too small a flue can cause a bottleneck and create excessive resistance. Too large a flue will cause the flue gasses to expand, losing heat and slowing the draft. A chimney should not be smaller than the appliance's flue collar and no larger than 3 times its area.