A Good Chimney Draft

(It's a must for successful Woodstove operation)

We have all heard it before, "My wood stove is not drafting" or "My stove is smoking." The simple truth is stoves don't draft; chimneys do. Let me say it again, the chimney supplies the draft, not the stove! What is draft? Draft is suction in the chimney caused by a temperature difference between the air (or gases) inside the chimney and the air outside. A simple way to describe draft is comparing it to what makes a hot air balloon work. The air inside the balloon is warmer than the air outside it rises. When the air inside the chimney is warmer than the air outside, it rises. Find a good explanation, keep it simple, and repeat it to every potential wood stove customer.

"But my all-nighter worked fine on the same chimney!" That is right the old stove was dumping inordinate amounts of heat into the chimney and the new stove is much more efficient. This is a point that we cover during the qualification process.

There are many things that make a chimney work: location, height, flue size (size does matter),

Elbows horizontal run, and house pressure. Let's start with location. Inside chimneys are happy chimneys! When the chimney runs straight up through the insulated envelope it will stay warm and work better. An outside chimney, especially masonry one, will tend to cool the flue gases quickly and reduce the all-important temperature difference. At Jotul, we require at least a 14-foot chimney (that's the minimum.) Can they be too tall? You bet. Code says the chimney flue can be no more than 3 times the cross sectional area of the stove's flue exit but the same area works best. A 6-inch round flue exit will work best on a –inch round liner. Elbows reduce draft. Just like a sharp curve in the road "should" slow your car down, an elbow slows draft. Horizontal run – Have you ever watched the smoke from a campfire on a calm day? The smoke goes up not sideways! We could write a book on house pressure but let's keep it simple. In some houses, negative pressure situations exist. You know those vacuum-packed jars that make a funny noise when you unscrew the lid? Well, some houses for one reason or another, like the ones being built too tight, are pulling air down the chimney instead of allowing air to escape up through the chimney.

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