



## How to Operate Your Hobo Stove (with focus on Bushbox LF and XL)

**Soot/Smoke:** Formation of soot is always a sign of lack of oxygen and too low combustion temperature. Correctly operated, our large stoves (Bushbox LF, Bushbox XL, Bushbox XXL Campfire) do not produce noticeable soot. Lots of soot and smoke are always signs of improper firing.

**Chimney Effect:** The basic principle of a hobo stove is the Chimney Effect; our stoves are additionally constructed in such a way that the Coanda Effect can also develop more effectively. Both physical effects require a good air flow (which results in good oxygen supply). This provides for very high temperatures (up to 800 degrees Celsius). Also – and this is the most important point – the heat will be carried upwards by the air flow to the cookware, the side walls will remain relatively cool and will be heated evenly.

**Optimum operation:** Your hobo is optimally operated when there is a relatively small amount of fuel in the combustion chamber. In this case, the wood will burn very hot, the heat is only partially transferred to the outer walls, smoke and soot cannot form (if soot is produced, it burns without leaving any residue) and there is almost no warping, since the side walls are heated evenly, and spot heating / partial heating of the side walls does not happen. If the hobo has been operated optimally, there are almost no residues or ashes, ideally only a tiny pile of very bright, almost white ashes.

Care should also be taken to avoid "yo-yo heating" (continuously changing temperatures) and extreme temperature changes (quenching in cold water).

However, in many of the videos distributed on the Internet, our stoves are filled to the brim and you can sometimes see huge flames coming out of the stove. This leads to the following problems: The chimney effect is greatly reduced, the combustion temperature drops to around 200-300 degrees, smoke and soot are produced. Burning material touches the side walls in many places, which leads to uneven heating. At the same time a lot of energy is being transferred to the side walls. This creates heat islands or a large temperature gradient between the top and bottom, which is the optimum condition for another physical effect: warpage.

Our stoves up to the Bushbox LF size are nearly warp-proof. The Bushbox XXL Campfire was made for use as a campfire. **However, the Bushbox XL was designed solely as a stove, which means it can suffer permanent damage from incorrect use (please refer to the next section) or overheating.**

**Improper use:** Many misunderstandings also arise from the fact that some of our customers use our products, which are designed as stoves (all products except Bushbox XXL Campfire) as mobile campfires, subjecting them to hours of yo-yo heating and occasional overheating. Our stoves have to prove that they can withstand this and can be folded or remain fully functional, but no regular steel will withstand this permanently without damage (the same applies to quenching in cold water).

**Warpage:** Warping is a physical phenomenon that is inevitable when metal is heated unevenly (and therefore unevenly expands). Slight distortion is therefore unavoidable and normal. However, all our hobo stoves are designed in such a way that warpage occurs only to a very moderate extent (when used as intended) and that the function of the hobos is not impaired in any way.