



## Econoburn Operating Tips

Some helpful tips to help you get the most from your new Econoburn boiler. Many of these tips have been compiled from users in the field looking to help others get the most benefit from their boiler.

### **START-UP:**

- ❑ When firing the boiler from scratch, use dry kindling and leave the bypass damper open for approximately 15-30 minutes. This will allow time to establish the coal bed above the refractory nozzle, which will in turn yield the most efficient gasification. You will likely find your own routine for firing your boiler... but this method works every time it's tried.
- ❑ We do not recommend leaving the boiler off and the bottom door open to get your fire going faster. In the event that you leave the boiler and forget to close the door, the fire will grow to the point that the boiler overheats and produces steam.
- ❑ As a starting point, set the mechanical aquastat approximately 10-15 degrees below the maximum temperature you would like your system to operate. Unlike gas or oil fired boilers, when the Econoburn goes into stand-by mode, its temperature will continue to rise until the lack of combustion air slows the fire enough to stabilize the water temperature. This setting will vary from system to system and will be dependent upon the size of your boiler, the amount of water in the system, time of year, and the heat load on the boiler.
- ❑ If your unit has a draft inducer installed on the flu pipe, **use it only for loading the firebox**. If the draft inducer is left on under normal operation, the boiler WILL overheat and possibly cause damage to the boiler, the system, your property, or you.
- ❑ Loading: 1) turn off boiler 2) open bypass damper 3) turn on draft inducer (if applicable) 4) wait a moment and then slowly open the door on the firebox 5) load firebox with wood 6) shut firebox door 7) turn off draft inducer 8) turn boiler back on. (We strongly recommend that your draft inducer be wired on a double throw switch... one contact for the boiler, one for the draft inducer... that way it is impossible for the draft inducer to be on at the same time as the boiler.)

- ❑ Your boiler is very ruggedly built, but do not throw wood into the firebox haphazardly as you may chip the gasification nozzle, and reduce the overall efficiency.

### **FUEL SUPPLY:**

- ❑ Hardwoods with moisture content between 15% and 25% are recommended. If you are using your Econoburn to heat your domestic water during the summer months, and you don't have thermal storage, use dry seasoned wood to prevent the accumulation of creosote in the combustion chamber and heat exchanger.
- ❑ Do not burn trash in your Econoburn. Newspapers, plastic, and other "junk" can clog up the gasification nozzle and reduce efficiency.
- ❑ Do not use excessive amounts of wood that is cut into tiny pieces. This can generate an intense coal bed that *could* overheat your boiler. If you have small scraps to burn, mix them with regular chunk wood.
- ❑ Use firewood that is smaller in length than the firebox. Longer firewood will cause "bridging" which will prevent the wood from falling to the bottom of the burn chamber and could cause gasification to cease.
- ❑ If you wait until the fire has burned to coals before refilling the upper firebox, you will have less chance of a back draft into the boiler room than if a partial load of wood still burning inside.
- ❑ If you are having problems with heat outputs... check the moisture content of your wood. Firewood moisture meters are available on the Internet for less than \$30, and can save you a lot of time and energy spent trouble shooting an easy to remedy problem. We cannot overstate the effect that the moisture content of your wood has on the overall performance of your boiler.
- ❑ For maximum efficiency, keep an adequate coal bed established in the upper chamber while adding only a few pieces of wood at a time. This causes the boiler to gasify more and prevents more heat than is necessary from being transferred to the water jacket. This works well when you're home for the evening, and can reduce the overall amount of wood that you use by a few percentage points.

### **MAINTENANCE:**

- ❑ If the gasification nozzle gets plugged with a piece of wood, the unit will begin to smoke out of the chimney. Most of the time, the clog will clear itself out if it's

not completely shutting off the airflow. In the rare case where you have a complete obstruction of the nozzle, you will have to manually remove the blockage.

- ❑ Make sure your chimney stays clean. Your Econoburn will not produce the creosote levels that other conventional woodstoves and boilers create, but if you're not using thermal storage it's likely that some creosote will form. It's always better to be safe and inspect your chimney once a year.
- ❑ Keep an eye on your pressure gauge. If you see a drop in pressure over time, it could mean that there is a leak in your system somewhere. Low water levels can prevent circulation and damage your equipment.
- ❑ Be sure to cycle your turbulator arm once every couple of days, and only when the boiler is hot. This will keep your boiler operating at peak efficiency. If the handle is stuck or difficult to move, **DO NOT FORCE IT**. This could shear the bolts off of the mechanism inside. Wait until the boiler has been in the gasification mode for a while before attempting to move the lever, and gently work the turbulators free. If you are consistently experiencing sticky turbulators, you are probably burning wood with a higher moisture content than is recommended, or you need to work the turbulator arm more often.
- ❑ Burning potatoes in the lower chamber can help free up sticky turbulators. Just place 2 or 3 decent sized potatoes on the refractory below the gasification nozzle in the bottom chamber and operate the boiler normally. In a few hours, depending how much your boiler gasifies, your sticky turbulators should free up. Your best bet is to burn them over night.
- ❑ Keep the ashes cleaned out of the combustion chamber... especially from in front of the heat exchanger port at the rear of the chamber. We recommend that ashes be removed from this area around twice per week in order to keep the efficiency of your Econoburn at maximum.
- ❑ If ashes accumulate in the upper firebox, rake them through the gasification nozzle and into the lower combustion chamber. A thick pile of ashes on top of the refractory in the base of the firebox will insulate the coal bed from the ceramic and reduce the gasification efficiency, or prevent gasification altogether. We recommend letting your boiler burn down to just hot coals at least a few times per week to facilitate this type of upper chamber cleaning.
- ❑ For indoor installations, maintenance of the upper chamber door seal is imperative. Even a slight leak in this gasket will be immediately noticeable by a creosote smell which some find objectionable in their home. The best way we have found to prevent this is to brush the door gasket with mineral oil once per week. The mineral oil keeps the gasket swollen and pliable so that it seals

completely each time the door is closed. **Caution: mineral oil is flammable... use discretion when applying.**

- Read and make yourself familiar with the Econoburn operating manual.