

# SAFETY INSTRUCTIONS

## READ ALL INSTRUCTIONS CAREFULLY.

This stove is **NOT** UL listed and is not designed to be installed in a permanent residence. This stove is to be used in wall tents with flame/heat resistant stove jack and seasonal cabins. This stove is not designed to be used year around, only seasonal use 3-5 weeks out of the year. The stove must have a minimum of 36-inch clearance to combustible materials on all sides.

1. The installation of this stove must comply with your local building code rulings. Please observe the clearances to combustibles. Do not place furniture or other objects within the clearance area.
2. Verify that the stove is properly installed before firing the stove for the first time. After reading these instructions, if you have any doubt about your ability to complete your installation properly, you must obtain the services of a professional licensed installer familiar with all aspects of safe and correct installation.
3. **DO NOT** store wood, flammable liquids or other combustible materials too close to the unit. Refer to certification label on back of unit and reference figures 10–12 in this manual.
4. **DO NOT INSTALL THIS STOVE IN A MOBILE HOME, MANUFACTURED HOME, OR TRAILER.**
5. **DO NOT MODIFY THIS STOVE IN ANY WAY!**
6. Creosote or soot may build up in the chimney connector and chimney and cause a fire. Inspect the chimney connector and chimney twice monthly during the heating season and clean if necessary.
7. To prevent injury, do not allow anyone to use this stove that is unfamiliar with the correct operation of the stove.
8. Do not operate stove while under the influence of drugs or alcohol.

**ALERT ALL PERSONS TO THE HAZARDS OF HIGH SURFACE TEMPERATURES** while stove is in operation – especially young children. Keep away from a hot stove to avoid burns or clothing ignition. **NEVER LEAVE SMALL CHILDREN UNSUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE STOVE.** If small children will be in the same room as the stove during operation, provide a sturdy barrier to keep them at a safe distance from the stove.

Keep stove area clear and free from all combustible materials, gasoline, engine oil, naphtha and other flammable vapors and liquids.

**WHILE TENDING THE FIRE ALWAYS WEAR PROTECTIVE CLOTHING**, fire retardant hearth gloves and eye protection, to prevent burns. Never operate this stove with the door open except when re-fueling. Such actions can result in very dangerous operating conditions.

**DO NOT OVER FIRE THE STOVE.** Over firing will occur if combustion air is uncontrolled as when feed door is left open during operation. Such actions can result in very dangerous operating conditions. While in operation, keep the feed door closed and secured at all times except while tending the fire when adding fuel be careful not to smother the fire. Do not build fires against glass and make sure the coal bed does not obstruct the air inlet. Do not load fuel to a height or in such a manner that it would be hazardous when opening the door.

**NEVER LEAVE THE STOVE UNATTENDED** when the door is open. Always close the door after ignition. **DO NOT CONNECT TO OR USE IN CONJUNCTION WITH ANY AIR DISTRIBUTION DUCT WORK UNLESS SPECIFICALLY APPROVED FOR SUCH INSTALLATIONS.**

## CARBON MONOXIDE (CO) HAZARD

A buildup of CO fumes is toxic and can be fatal. Carbon Monoxide is a colorless, odorless gas produced during combustion of wood, coal, oil, gas and by other fuel burning appliances. It is important to have a proper draft and adequate replacement air ventilation so fumes are drawn out the chimney. Installed as instructed this stove is designed to be as safe as possible yet it is recommended to install a CO detector. Follow the manufacturer's recommendations for proper installation and use. It is recommended to be placed at table-top level (not near the ceiling) to avoid false alarms. Realize that devices other than a stove (i.e. motor exhaust) can trigger CO alarms.

## CARBON MONOXIDE (CO) HAZARD (CONT.)

If alarm sounds:

- Recognize the symptoms of CO poisoning (headaches, nausea & drowsiness).
- Increase ventilation (open windows & doors).
- Make sure stove doors and/or lids are closed and secured.
- Check stove for smoking or puffing (open airflow controls).
- Check chimney & connector pipe for leaks, blockage or down-draft conditions.
- Check CO device for false alarm.

33. Keep power cords, electrical appliances and/or assemblies outside of the clearance area shown in this manual for combustible materials.

34. Consult your municipal building department or fire officials about restrictions, permits and installation requirements for your area.

## OPTIMAL FUEL CONSUMPTION

This stove is designed to get the most efficient transfer of heat energy from the wood fuel and radiate it into your living environment. Smoke given off by burning fuel consists of very small organic liquid droplets. If these droplets condense, they form a sticky tar-like substance called creosote. When operated properly, this stove is designed to burn these droplets. Burning these droplets releases heat that would otherwise be lost up the chimney as smoke. Following the instructions below will help you operate your stove properly to maximize the stove's performance. Actual performance is dependent on chimney height, weather, log size, wood species and moisture content. Some experimentation will initially be required to find that "sweet spot" where your stove performs best. The following will give you a starting point to find your optimum settings.

The best indicator of a properly operating stove is to look for smoke coming out of the chimney. You may see steam emissions that will quickly dissipate. Smoke will thin but continue to drift without totally disappearing. If you do detect smoke emissions, open the air control a little bit, let the stove adjust for 10–15 minutes and re-check your chimney. Remember – visible smoke represents lost heat.

**NOTICE - INITIAL BURNS TO CURE PAINT BECAUSE OF THE HIGH OPERATING TEMPERATURES, THIS STOVE USES A SPECIAL HIGH-TEMP PAINT WHICH REQUIRES A SERIES OF BURNS TO CURE THE PAINT FOR DURABILITY AND A LIFETIME OF SERVICE.**

## STARTING A FIRE

1. Set air inlet control to fully open position (slide to Left).
2. Open the feed door and place several wads of crushed paper in the firebox.
3. Cover the paper with a generous amount of kindling in a teepee fashion and a few small pieces of wood.
4. Ignite the paper and leave the door open slightly. **DO NOT LEAVE STOVE UNATTENDED WITH DOOR OPEN!** Except while tending the fire, operating the stove with the feed door open may cause over firing resulting in unsafe operating conditions.
5. Add large pieces of wood as the fire progresses being careful not to overload.
6. Once fuel has been loaded, close the door and leave the air inlet control fully open until fire is well established (at least 15–20 minutes) being careful not to over fire (if any of the exterior parts of the stove or chimney connections begin to glow you are over firing the stove).
7. Re-adjust the air inlet control to desired burn rate. For "low" setting slide control all the way closed, for "high" slide all the way to open. (If excessive smoke fills the firebox, open air inlet control slightly until

flames resume and wood is sufficiently ignited.) The basic rule of thumb is “closed = low,” “half way open = medium” and “fully open = high.”

## ADDING FUEL

If the coal bed is not hot and glowing, rake the coals to the front of the stove, close the door and adjust the air inlet control to the wide open position. Let the coals re-heat for 10–15 minutes. When hot and glowing, spread them out and place your next fuel load into the stove. Leave the door air inlet control in the wide open position for 15–20 minutes.

## PREVENTING CREOSOTE BUILDUP

1. Creosote will inevitably form in your chimney and connector pipe. Following these steps will help reduce the rate of build up.
2. BURN ONLY SEASONED WOOD that has dried for at least one year. (<20% humidity by weight)
3. Burn hardwood rather than softwood. Hardwood is denser or heavier wood and burns hotter.
4. Do not attempt to burn (or mix in) green or wet wood. The use of green or wet wood will cause a rapid buildup of creosote. Wood that hisses, sizzles and blackens without igniting in five minutes must be considered too wet to burn
5. Do not attempt to extend the burn time by using wet wood. Not only does burning wet wood rapidly build up creosote, but it reduces the heat output by up to 25 percent.
6. Burn the stove with the air inlet control wide open for 10-25 minutes every time fresh wood is loaded into the stove. Do not load more than  $\frac{1}{4}$  to  $\frac{1}{2}$  of the fuel capacity at one time. Loading too much wood at once will cause excessive smoke which contains creosote. Mature fires or coals produce very little creosote-producing smoke.
7. Burn with the air control open for several minutes at numerous intervals throughout the day, being careful not to over fire the unit. Following this process will help to warm the chimney and reduce the amount of creosote forming condensation within the chimney.
8. Establish a routine for the handling of fuel, firing, and operating the stove. Check daily for creosote buildup until experience shows how often you need to clean for safe operation. Be aware that the hotter the fire, the less creosote is deposited and weekly cleanings may be necessary in mild weather even though monthly cleanings may be enough in the colder months.

## CHIMNEY DRAFT

The chimney is critical to the proper operation of the stove. It is the chimney that creates draft; THE STOVE DOES NOT AND CANNOT CREATE DRAFT. The chimney provides two vital functions for proper stove operation. First, it is the passage to exhaust smoke and hot gases created in the combustion process. Secondly, it supplies the draft (or pressure) to bring oxygen to the fire to sustain combustion. Draft is the natural movement of air or gases through a chimney. Chimney draft comes from the natural tendency for hot (less dense) air to rise. As the hot air rises within the chimney it creates a lower pressure at the bottom of the chimney to which the stove is connected. The higher pressure air outside the stove then rushes into the stove where the lower air pressure level exists, thus bringing oxygen to the fire. This constant flow of air is referred to as the draft. Many factors or combination of factors can act together to build or impede the draft. Without the correct amount of draft, the stove will not operate properly. If there is excessive draft, an unsafe condition will arise with too much air being drawn into the stove and creating an excessively hot fire. This could cause over firing which runs the risk of igniting structural elements around the stove and chimney. The most common experience is that of insufficient draft. Under insufficient draft conditions, the fire will be starved for oxygen, improper or incomplete combustion occurs resulting in smoke spillage into the area around the stove. A fire that is starved for oxygen will not burn well. Such a fire will produce excessive smoke that will cool and condense in the chimney creating creosote. Excessive amounts of creosote buildup can ignite causing a chimney fire with the possibility of structural elements igniting as well.

Correct any draft related issues before using the stove. The following are some possible causes of insufficient draft. Please note that one or more factors may play a role in a draft issue and certain factors may change over time as conditions vary.

### 1. Atmospheric Pressure and Air Supply

Atmospheric pressure that affects the draft may occur from outside the structure, inside the structure, or both. High pressure weather (clear and cold) usually produces a better chimney draft than low pressure (overcast and damp) conditions. Negative pressure can be created inside a home by appliances that expel air from within such as bathroom vents, range hoods, clothes dryers, and forced air furnaces. Do not allow such appliances to overcome the natural draft. Note that newer homes tend to be built more tightly allowing less make up air to seep freely in. Negative pressure may be overcome by opening a nearby door or window. In extreme conditions of negative draft, the airflow in the chimney will reverse direction. This is known as "down drafting."

### 2. Environmental Factors

Wind or air deflecting off external objects such as the roof, neighboring structures, trees, or hills. These can cause a pressure change in the air surrounding the chimney.

### 3. Chimney Temperature

The temperature of the chimney is an important factor in how well it drafts. Warm chimneys draft better than cold chimneys. This is based upon the principle that hot air rises while cold air sinks. Hot gases going up a cold chimney will cool rapidly. Warm the chimney by allowing a hot fire to burn for the first fifteen to thirty minutes after starting the fire. Be careful not to over fire the stove. If any part of the stove or chimney starts to glow, you are over firing the stove.

### CAUTION: FIRE HAZARDS

- DO NOT STORE WOOD ON FLOOR PROTECTOR, UNDERNEATH STOVEPIPE, OR ANY WHERE WITHIN MINIMUM CLEARANCES FROM COMBUSTIBLE SURFACES SPECIFIED FOR THIS STOVE.
- OVER FIRING MAY CAUSE A HOUSE FIRE. YOU ARE OVER FIRING IF A UNIT OR CHIMNEY CONNECTOR GLOWS RED

### OPERATING SAFETY PRECAUTIONS

1. NEVER OVER FIRE THIS STOVE BY BUILDING EXCESSIVELY HOT FIRES AS A HOUSE/ BUILDING FIRE MAY RESULT. YOU ARE OVER FIRING THE STOVE IF UNIT OR STOVEPIPE BEGINS TO GLOW OR TURN RED.
2. NEVER BUILD EXTREMELY LARGE FIRES IN THIS TYPE OF STOVE AS DAMAGE TO THE STOVE OR SMOKE LEAKAGE MAY RESULT
3. ON MODELS WITH GLASS DOOR, DO NOT BUILD FIRE TOO CLOSE TO GLASS.
4. UNIT IS HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. DO NOT TOUCH THE STOVE AFTER FIRING UNTIL IT HAS COOLED.
5. PROVIDE AIR INTO THE ROOM FOR PROPER COMBUSTION.
6. INSPECT STOVEPIPE EVERY 60 DAYS. REPLACE IMMEDIATELY IF STOVEPIPE IS RUSTING OR LEAKING SMOKE INTO THE ROOM.

### WARNING: EXPLOSION HAZARD

- DO NOT USE CHEMICALS OR FLUIDS TO START THE FIRE.
- NEVER USE CHEMICALS, GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR FLAMMABLE LIQUIDS TO START OR "FRESHEN-UP" A FIRE IN THE STOVE.
- KEEP ALL FLAMMABLE LIQUIDS, ESPECIALLY GASOLINE, OUT OF THE VICINITY OF THE STOVE WHETHER IN USE OR IN STORAGE

NOTICE: USE SOLID WOOD MATERIALS ONLY. DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS SUCH AS GASOLINE, NAPHTHA OR ENGINE OIL. DO NOT USE COAL. THIS STOVE IS NOT DESIGNED TO ACCOMMODATE THE AIR FLOW (DRAFT) NECESSARY TO PROPERLY BURN COAL OR COAL PRODUCTS