

Wood Burning System Troubleshooting Chart

This chart offers a convenient way to find information on common problems with wood heat systems. Hyperlinks in the Solutions boxes (right column) are to information pages on woodheat.org. See the list of articles at the end of the chart. It is sponsored by Urban Hearth.

Symptom/Complaint	Likely Causes	Solutions
Dirty glass (1)	Turning down too much Turning down too early	Fire new load hot until the firebox is full of flames Don't try to conserve flue gas heat loss (viii)
Dirty glass (2)	Wet wood	Split wood smaller, load crisscross, don't turn down; be better prepared next year (vi)
Dirty glass (3)	Trying to burn continuously in mild weather	Be prepared to light one fire each day Don't try turning down to reduce heat Get kindling materials & technique together (viii) (ix)
Dirty glass (4) (streaks)	Leaking door and glass gaskets	Replace gaskets (xiii)
Inadequate heat (1)	Wet wood	Split wood smaller, load crisscross, don't turn down; be better prepared next year (x)
Inadequate heat (2)	Fear of big hot fires Turning down too early	Fire new load hot until firebox is full of flames, then only reduce air so that flames slow down a bit (viii)
Inadequate heat (3)	Excessive charcoal build up in cold weather (non-cats especially)	Rake coals and put one split piece east-west on row of coals; fire hard, repeat (xii)
Inadequate heat (4)	Trying to preserve flue gas heat	Fire until firebox is full of flame. The chimney needs heat, so give it freely. (i)
Inadequate heat (5)	Low draft and excessive charcoal build up due to venting system leak	Check venting system for leaks; seal it
Inadequate heat (6)	Excessive ash build up	Remove ash more frequently (vi)
Short burn times (1)	Not stoking properly	Demonstrate aggressive loading techniques (viii)
Short burn times (2)	High draft due to tall chimney and cold weather, mainly with non-cats. (i.e., The Florida Bungalow Syndrome)	See if air control can be adjusted, or secondary air limited; only in extreme cases resort to key damper (v)
Short burn times (3)	Refuelling at start of charcoal phase Not including charcoal phase as part of burn cycle	Provide information on what a burn cycle is and what to expect (viii)
Stove doesn't perform as expected (1)	Unrealistic expectations of heat output, heating capacity	Probe to learn expectations; compare to heater selection and housing type; advise (xi)
Stove doesn't perform as expected (2)	Misled by bad advice and specific thermometer readings	Ignore thermometer and bad advice; provide instruction and visual cues; give references (vii) (viii)

Smoke rollout when loading (1)	Smouldering fire Door opened too quickly Warm weather Not burning in cycles (should not load during flame phase)	Provide information on: how fire should look how to open the door without spillage how to burn in cycles (vi)
Smoke rollout when loading (2)	Restrictive venting system with too many elbows/changes in direction	Replace 90 degree flue pipe elbows with 45s Replace outside chimney with inside (xiv)
Smoke rollout when loading (3)	Upgrade to EPA non-cat connected to marginal venting system	Point out that the new firebox is more restrictive; suggest upgrade to venting (i)
Cold backdraft at standby (1)	Chimney runs up outside of house	Re-install chimney inside Enclose chimney and keep it warm (iii) (ii)
Cold backdraft at standby (2)	Chimney penetrates envelope below highest level	Re-install chimney so it penetrates highest heated level Enclose chimney and keep it warm (i) (iii)
Appliance puffs smoke in windy weather (1)	No chimney cap Ineffective chimney cap	Install a proper chimney cap (iv)
Appliances puffs smoke in windy weather (2)	House is leaky or open windows on downwind side	Describe how house can be depressurized by wind acting on leaks; seal leaks, keep windows closed (iv)
Air circulation fan doesn't come on or blows cold air (1)	Fan switch is not in the right position or switch is faulty	Place switch in the correct position or replace switch
Air circulation fan doesn't come on or blows cold air (2)	Fan switch is being swept with cold air	Seal leaks, or move the switch closer to heater body
Air circulation fan doesn't come on or blows cold air (3)	Manual override is set to on or off	Check manual override switch

References/Resources

- [\(i\)](#) All About Chimneys (general concepts)
- [\(ii\)](#) The Evil Outside Chimney (detailed essay on why outside chimneys are bad)
- [\(iii\)](#) How Chimneys Work (details on chimney physics; chimney height and temp chart)
- [\(iv\)](#) How Wind Affects Chimney Performance (insights for diagnosing wind related failure)
- [\(v\)](#) The Florida Bungalow Syndrome (why non-cats connected to tall chimneys overfire in cold weather)
- [\(vi\)](#) A Huge List of Proven Tips (on firewood, fire kindling, and fire maintenance)
- [\(vii\)](#) Do you need a flue pipe thermometer? (probably not)
- [\(viii\)](#) How to Build and Maintain a Wood Fire (fire in cycles, coalbed raking, etc)
- [\(ix\)](#) Five Ways to Control Heat Output (in mild weather)
- [\(x\)](#) Good Firewood (includes tips on how to judge firewood moisture)
- [\(xi\)](#) How to Buy the Right Wood Stove (tips on sizing)
- [\(xii\)](#) Too Much Charcoal? (how to reduce big coal beds in cold weather)
- [\(xiii\)](#) Maintenance of Modern Stoves (replacing door, glass gaskets)
- [\(xiv\)](#) 10 Steps to Perfection (characteristics of successful wood heating systems)