

NEGATIVE AIR & FREEZE PREVENTION

MODELS: ALL MODELS



WARNING

LP & NG ARE EXTREMELY FLAMMABLE SO TAKE EXTRA PRECAUTIONS WHEN PERFORMING ANY WORK TO THE HEATER

Negative Air

- Negative air pressure in a structure occurs when air consumed by fuel burning appliances or exhaust systems in that structure exceeds the amount of air available.
- Here is a list of items that consume air within a typical household:
 - Stove exhaust fans
 - Furnaces
 - Water heaters
 - Fire places/ Woodstoves
 - Bath fans
 - Dryers
- All of these items must be taken into account when making provisions for a proper amount of fresh air from the outside.
- If the building is new construction, air infiltration from the outside will be limited and provisions for extra air supply should be made. If the building is older construction, air may infiltrate into the house through unplanned sources such as window frames, door jams, sill plates or idle chimney flues. These sources still may not be providing the adequate amount of air and additional sources of fresh air should be considered.

Why Negative Air is Bad

Cold air is drawn through the water heater's flue pipe because other fuel burning appliances or exhaust systems in the structure require more air than the dwelling can supply. When the required amount of air for the fuel burning appliances or exhaust systems in the structure is not being supplied to them, they find the flue pipe on the water heater an acceptable means of supplying themselves. Thus, freezing cold air is pulled down the water heater's flue, drawn over the copper heat exchanger, potentially freezing it and the water valve below. Because, when idle, the water heater holds only cold water, freezing can happen quickly possibly causing leaks or ruptures. The water heater does not pull air

through its flue pipe – if you were to remove the heater, the air would continue to come down your flue pipe. You must have the air balanced in the structure to correct this problem. Consultation with a heating, ventilating and air conditioning (HVAC) specialist is recommended.

Checking for Negative Air

- 1 Close all doors and windows in the structure
Note: any opening of doors and windows to the outside will alter test results.
- 2 Operate all fuel burning appliances and exhaust systems in the structure with the exception of the tankless water heater. Allow time (1hr) for these items to use up the air inside the home.
Note: performing this test in early morning when the heating systems have been running all night and no doors or windows have been open for several hours is suggested.
- 3 Remove the cover from the tankless water heater and hold a recently extinguished match, candle, or any other visible smoke source in front of the triangular opening on the draft diverter.
- 4 The smoke should be sucked quickly into the opening and up the exhaust vent. If the smoke is blown back in, a negative air situation exists and must be corrected.