

## **IMPORTANT INFORMATION**

### **PREVENTING A FREEZE-UP FROM NEGATIVE DRAFT DURING COLD WEATHER**

Aquastar water heaters hold cold water in their copper heat exchangers and brass water valves when not in use. Because of this, any cold air that comes inward / downward through the unit's vent pipe is capable of freezing these components.

The installation manual specifies the minimum vertical vent stack and the amount of combustion air required for each unit. The vent stack must not be restricted and its 6 foot minimum height (provided that there are no elbows) must terminate 2 feet above any obstruction within a 10 foot radius. 5,850 cubic feet of open space is required for combustion for 117,000 btu Aquastars and 2,000 cubic feet for the 40,000 btu Aquastar. For a confined space (anything less than 5,850 cu. ft. for 117,000 btu models and 2,000 cu. ft. for the 40,000 btu model) two permanent openings, one commencing within 12" of the top and one commencing within 12" of the bottom, are required. Each opening must have a minimum free area of one square inch per:

- 1000 Btu/hr if all air is taken from inside the building
- 2000 Btu/hr if all air is taken from the outside by horizontal ducts
- 4000 Btu/hr if all air is taken from the outside by direct openings or vertical ducts

When these requirements are followed the unit will operate properly and safely. However, there may still be a risk of freezing the copper heat exchanger or brass water valve due to negative draft if other combustion type appliances in the area of the Aquastar are not being supplied with a sufficient amount of combustion air for themselves. A wood stove or furnace operating during the night, while the Aquastar is not in use, are the typical culprits for robbing make up air through the Aquastar's vent pipe. This infiltrating cold air is very capable of freezing the cold water in the Aquastar heat exchanger. Aquastars that are Powervented, using 4" diameter pipe horizontally to a side wall, can suffer the same syndrome.

More make up air is the solution. It will be necessary to make other permanent openings in the room area to supply more make up air for additional combustion appliances. Horizontal ducts from the room to the outside of the building can be designed by a HVAC specialist to achieve this. NOTE, If using interior space as a combustion air source supply, then infiltration of air from such space must be sufficient: The volume of the space must be adequate (see above paragraph about cu. ft. of open space). We recommend a HVAC specialist be used to determine this.

Aquastar Technical Support is available 8:30 - 5:00 Monday -Friday  
800-642-3111 ET

visit us at [www.controlledenergy.com](http://www.controlledenergy.com)

[techsupport@cechot.com](mailto:techsupport@cechot.com)