

HIGH TEMPERATURE OPERATION

MODELS: 170VP



WARNING

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

Introduction

The purpose of the thermostat is to prevent the AquaStar from making the water too hot. Overheating your water wastes energy and may cause the AquaStar's built-in safety devices to disable the heater.

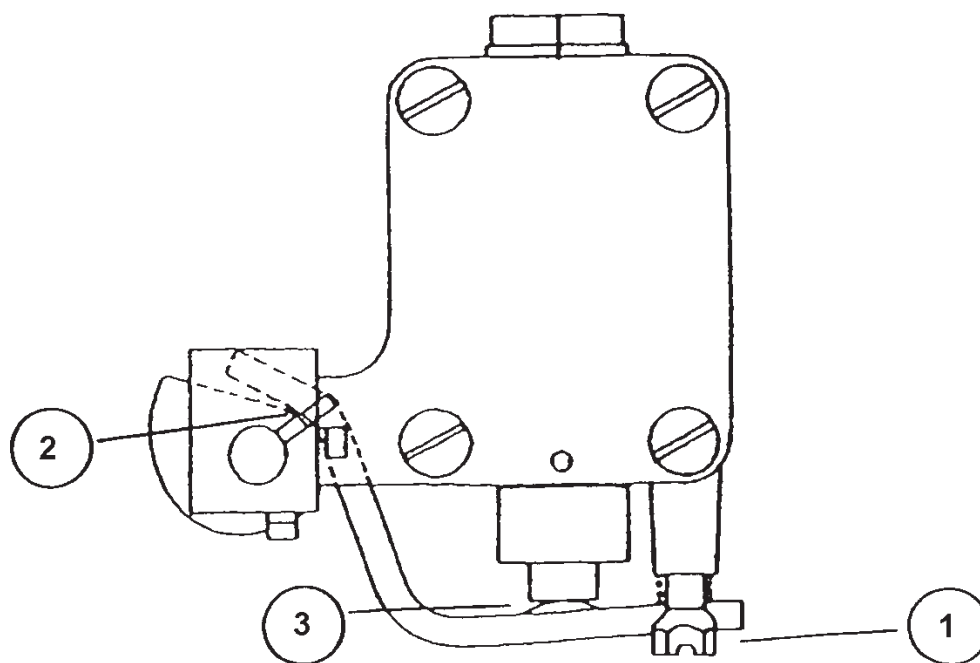
If the water flow rate is too high, gas or combustion air supply is too low, draft is insufficient or if the heater is malfunctioning in some other way, you will not be able to get a good calibration. These conditions usually result in water being cooler than intended or in frequent pilot outages.

Preparation

1. Run water long enough so that any pre-heated water feeding the AquaStar is up to temperature and has reached the AquaStar.
2. Make certain that water is flowing at the required rate.

Calibration

1. While constantly monitoring outlet temperature, gradually back out thermostat calibration screw until water temperature just reaches the required temperature - **no more**.
2. If the thermostat lever develops "play" at points 2 or 3 (see diagram below) during the calibration process, the AquaStar is "maxed out" and any further adjustment will be counterproductive. The calibration screw should be turned back inward far enough to take up any play regardless of whether or not you've reached your desired outlet temperature.



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Calibrating the thermostat for temperatures exceeding 150°F

Within the output limitations of the heater, high temperature calibration might merely be a matter of turning out the thermostat calibration screw until you reach the desired outlet temperature. Certain conditions may, however, complicate the process. This bulletin gives you some of the information you'll need to successfully reach higher temperatures.

Water heater safety regulations require total gas shut-off (including pilot) when water temperatures exceed 210°F. The AquaStar 170 and 125 have so much instantaneous heating capability that either can bring a quart of water from 185 to 210°F in under two seconds.

The safety cutoff switch is set for 203°F (95 C) to ensure that the 210°F limit is not exceeded. It is easy to see how minor changes in inlet temperatures and flow rates can reach or exceed this temperature limit. Doing so will cause nuisance pilot outages.

Below are some of the conditions you should strive for and others you should try to avoid to assure the optimal operation of your AquaStar 170 High Temperature unit.

TO AVOID	TO DO
Avoid fluctuating inlet water temperatures.	If preheating water, make provisions to keep inlet temperatures consistent.
Avoid fluctuating inlet water flow rates.	Try to keep the flow rate consistent.
Avoid turning calibration screw out beyond thermostat's control range	Make certain there is little or no "play" in thermostat lever/cam mechanism.
Avoid undersized gas lines which can cause disproportional modulation.	Use gas line sizing charts for length and load -- best to oversize the diameter by one.
Avoid installations in high moisture environments such as above a steam table or dishwasher outlet.	Install in a dry, clean room with adequate ventilation for proper combustion
Avoid down-drafting due to negative pressure from exhaust fans in same room, etc.	Move heater to location without negative air pressure, or use a mechanical draft assist such as a power venter or draft inducer.
Avoid supplying multiple outlets from a single High Temperature Aquastar.	Use High Temperature Aquastar for single load -- other heaters as needed.