



## CLEAN UP WITH A POWERMAX™ GAS BOOSTER

Running a large commercial food service or kitchen is an energy intensive business. Everything you do to increase energy efficiency will save you money.

Installing a natural gas "booster heater" for your dishwasher is one little-known improvement that will make a BIG difference. According to some industry experts, it can cut your water heating costs in half.

With all the cooking, refrigerating and dishwashing involved in running a restaurant, it's little wonder that restaurants use almost two and one-half times as much energy per square foot as the average commercial building. Water heating is the second highest energy use (after general heating and cooling) and accounts for about 10 to 25 percent of a restaurant's energy consumption, depending on volume.

One reason the water heating bills are so high is that restaurants wash a lot of dishes. And in order to ensure that the dishes are properly sanitized, health regulations require that foodservice establishments either use rinse water above 180° F or add chemical disinfectants to rinse water that is less than 180°.

Chemicals may save a little energy but will have other associated costs, such as reduced china and utensil life and a longer dish drying time. Lower wash and rinse temperatures and chemicals do not remove lipstick and food greases and can cause crazing and spotting on the dishes, leading to a lot of rewashing and additional labor. And most chemical machines use more water than their hi-temp equivalents. It's also not safe or cost-conscious to heat general use hot water above 130° F in order to meet the sanitation requirements of the dishwasher. As a result, most high-volume restaurants sanitize their dishes by using a special water heater attached to the dishwasher that heats the water to 180° during the rinse cycle—a so-called "booster heater."

Most booster heaters are electric. But with constantly rising electric and maintenance costs, many operators are looking to gas booster heaters. In the past, the two big drawbacks of gas boosters had been their venting requirements and high service costs. But Vanguard's newer gas boosters have much higher efficiency and lower exhaust temperatures. They are also much easier to install, vent and maintain. They are more compact and can be wall-mounted or fit under the dishtable at the dishwasher, or be installed up to 150' from the dishwasher.

The biggest advantage of Vanguard's PowerMax™ gas booster heater is that it costs much less to run than an electric booster. But there are other benefits, including:

- Safety—less risk of scalding because only the water for the rinse cycle is heated to 180° F. Domestic hot water supply can be as low as 125°F.

- Faster drying and fewer spots on dishware than if chemicals are used.
- Longer Life for dishware, silver, glassware and machinery.
- The main water heater used to meet other hot water demands can be set at 125° F instead of 140° F.
- A quicker hot water recovery time, which helps keep water temperature constant and production rates up.
- Lower maintenance costs.
- Much longer equipment life.
- Lower chemical costs
- China and silver last much longer without chemical abuse

To estimate how much money you might save by switching to Vanguard's PowerMax™ gas booster heater, consider the following example:

A full-service restaurant serving 300 to 1200 meals per day uses about 200 to 300 gallons per hour for high-temperature dishwashing. If the booster heater for the dishwasher were switched to a 90% efficient natural gas or LP model, the hot water bill for the dishwasher would be reduced by 40 to 80 percent. (These savings are based on average electricity and gas costs and seven days a week operation.)

Here's how the figures break down:

If you use 300 gallons per hour for 6 hours for high-temperature dishwashing, this results in approx. 96,200 kilowatt-hours (kWh) of electricity use. Assuming your electricity costs eight cents per kWh, that comes to \$7700 per year.

Vanguard's 90% efficient PowerMax™ booster heater (other boosters are less efficient) will use about 3650 therms to heat the comparable amount of water. Assuming your gas costs are 85 cents a therm, that comes to \$3102 a year. Your savings? \$4050 a year. If your electricity costs more or you are busier, your savings will be more.

Savings on the electric bill will be even higher for commercial businesses (most restaurants) that pay not only for energy consumption over time (measured in kilowatt-hours [kWh]), but also for electric demand. Electric demand is the maximum amount of energy you use in your establishment, or what is called your peak power load, and is measured in kilowatts (kW) of electricity. It is charged in addition to your electric consumption or kWh charges and can add 5 to 15% to your electric bill. Electric Boosters always operate at your peak time.

The main drawback to a PowerMax™ gas booster heater is the up-front cost, but utility costs seldom go down, so payback is quick. For new foodservice facilities, or those needing to replace their equipment, the PowerMax™ booster heater is a very smart choice. Ask someone who owns one. And ask them about repair costs, serviceability and performance.