



Sizing of a Residential Water Heater

Like any household appliance, the water heater has a very specific job to perform and it must do its job to the homeowner's complete satisfaction 24 hours a day, every day, for years and years. Water heating requirements for the home have increased steadily, and the minimum water heater size dictated by the Building Codes may not meet typical hot water demands. As a result, the last water heater purchased by the homeowner now may be too small to satisfy household needs, or to meet the needs of a newly remodeled home. In addition, rising energy costs have become a concern. *Operating costs* now can be just as important in making the buying decision as the initial price of the new water heater itself.

Investigate your pattern of hot water usage. Some sample questions may include:

- ❖ Number of people in the family; kids, teenagers
- ❖ How many bathrooms, garden tub or hot tub
- ❖ Automatic dishwasher
- ❖ Clothes washer

How many family members will routinely take a shower in any given hour. For instance, if all four of the children take a shower between 7 - 8 PM daily to get ready for bed, you may have a high usage demand. If both parents take their showers in the morning, Mom gets a load of clothes in the washing machine and turns the dish washer on before everyone leaves for school and work, you may have a high usage demand. Focus on your usage pattern and consumption factors.

Peak Hour Demand is the key. Peak hour demand is the busiest one-hour usage period. This may be in the morning, evening or some other time during the day. Accurate calculation of the demand is essential to proper water heater sizing.

Look at the following sample of a typical peak hour demand for this family of three.

Household Activity	Avg Gallons per activity	Times/Activity per hour	Total hot water used
Shower or bath	20	3	60
Shave	2	1	2
Hands/Face Washing	4		
Hair Shampoo	4	1	4
Dish Washing by hand	4	1	4
Automatic Dishwasher	14		
Food Preparation	5		
Automatic clothes washer	32		
Total peak hour demand:			70 Gallons

After you have calculated the actual peak hour demand load, you can use a make and model chart to choose the correct water heater within +/- 2 gallons capacity. When selecting the proper size look for the 'first hour rating' on the model chart. The 'first hour rating' is a function of the initial storage capacity plus the ability of the water heater to heat while in use. In the example above, you could select a Rheem residential electric water heater with a 65 gallon storage capacity, or a residential gas water heater with a 50 gallon storage capacity.

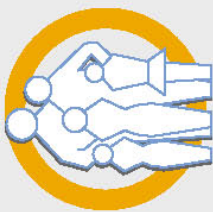
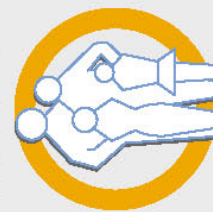
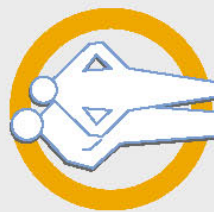
Use the chart above to calculate your Peak Hour Demand. Once known, you can look this up in water heater manufacturers charts to determine the size needed. Also look at the "Energy Factor" – the higher this number, the more efficient the water heater will be.

Note: The above information is adapted from Rheem technical data sheets.

(See other side for Rheem's quick guide to water heater sizing...)



What Size Water Heater Do You Need?

Household Size	GAS*		ELECTRIC	
	Regular Demand	High Demand	Regular Demand	High Demand
5 OR MORE 	50 GAL. <small>50, 60 or 75kbtu input</small>	75 GAL.	80 GAL.	120 GAL.
	50 GAL. <small>50, 60 or 75kbtu input</small>	80 GAL.	50 or 65 GAL.	
3 TO 4 	40 GAL.	50 GAL.	40 GAL.	50 GAL.
	50 GAL.	50 GAL. <small>50, 60 or 75kbtu input</small>		
2 OR LESS 				

Other sizes are available. This chart is designed to help you select the appropriate water heater capacity. Your use may vary. *Regular Demand* capacities are based on a home with a washing machine and an automatic dishwasher. *High Demand* capacities meet the hot water needs of teenagers, whirlpool tubs, spas, and oversized baths. Always anticipate your family's future needs when selecting your water heater.

* Some gas models are available in LP.