



ENERGY SERIES: What about Dishwashers?

Quick Facts

- Washing dishes with a dishwasher is more efficient than washing them by hand, and an ENERGY STAR qualified dishwasher is even more efficient.
- Compared with washing dishes by hand, you can save 5,000 gallons of water, \$40 in utility costs, and 230 hours of your time annually by using an ENERGYSTAR qualified dishwasher.
- An ENERGYSTAR qualified dishwasher uses one-third less water and at least 41 percent less energy than a non-qualified model.
- By replacing a pre-1994 dishwasher with an ENERGYSTAR qualified dishwasher, you can save at least \$30 in annual utility costs.

Saving Water and Energy with an ENERGYSTAR Qualified Dishwasher

It may come as a surprise that washing a load of dishes in the dishwasher uses less water than doing the same number of dishes by hand. (Dishwashers also do a better job of killing germs, because they use hotter water than you would normally use if washing by hand.) For each cycle, an ENERGYSTAR qualified dishwasher model uses about 4 gallons of water; a non-qualified model uses about 6 gallons.

According to the Iowa Energy Center, some features that contribute to the energy and water efficiency of an ENERGYSTAR qualified dishwasher include:

- Innovative dish rack designs maximizing cleaning efficiency by strategically positioning dishes

- More efficient water jets using less energy during the cleaning and rinse cycles
- A soil sensor adjusting cycles for optimal cleaning and the most favorable energy and water use by judging how dirty dishes are

You can save even more on utility costs by choosing a dishwasher with its own heating element. Almost all new dishwashers have such built-in booster heaters, which can raise the temperature of the water used in the machine to 140° F—or higher—for effective cleaning. This means you can lower your household water heater thermostat to an energy-saving 120° F—a temperature adequate for the needs of most families.

A dishwasher may not be equipped with a soil sensor. Most models, however, have several kinds of wash cycles, which vary the length of the wash cycle and the amount of water used, depending on whether you're washing a load of lightly-soiled china or a load of heavily-soiled pots and pans. The less water that is used, the more energy-efficient!

Tips for Purchasing a New Dishwasher

1. **Choose the right size for your home.**
The standard model has a 24-inch-wide capacity and holds more than eight place settings and six serving pieces. Compact models are about 18-inch-wide and hold fewer dishes. There are also drawer-style units that let you run a small load in one drawer or a full load in both. Keep in mind that operating a smaller-capacity dishwasher more frequently may use more energy than running a larger-capacity unit less frequently.

2. Choose a model with a blue ENERGY STAR label.

As indicated earlier, an ENERGYSTAR qualified dishwasher uses at least 41 percent less energy.

3. Compare the yellow EnergyGuide label and the Energy Factor (EF) across models.

A yellow EnergyGuide label includes information on the energy usage of the product, compares energy use with similar models, and estimates annual operating costs. Energy Factor (EF) is a measure of the overall energy efficiency of an appliance. The higher the EF, the more energy efficient the dishwasher. For a dishwasher, EF measures the electricity used to run the dishwasher and the energy consumed to heat the water. The ENERGYSTAR criterion for a dishwasher is an EF of 0.65, which is 41 percent more energy efficient than the government's minimum standard of 0.46. Effective August 11, 2009, the ENERGYSTAR criterion for a standard-sized dishwasher is ≤ 324 kWh/year and ≤ 5.8 gallons per cycle

4. Choose a model with energy and water saving features.

Choose a model with features that save more energy and water, including several wash cycle selections, a soil sensor, and a built-in booster heater. Also, see if the dishwasher allows you to choose between heat-drying and air-drying. Heat-drying elements use a considerable amount of energy; circulation fans for air-drying use very little.

Energy-efficient Operation Tips

Below are some tips on operating your dishwasher to maximize energy and water

savings, as suggested by ENERGYSTAR and the Iowa Energy Center.

- **Avoid unnecessary pre-rinsing.** Pre-rinsing dishes before loading the dishwasher can use up to 20 gallons of water. ENERGYSTAR qualified dishwashers and detergents are designed to clean without pre-rinsing. Scrape plates with a rubber spatula rather than pre-rinsing, so as not to waste water. Soaking or pre-washing is usually recommended only if food is burned-on or dried-on. You may use your dishwasher's rinse feature instead of soaking or pre-washing since it uses a fraction of the water needed to hand rinse.
- **Try to run the dishwasher only when it has a full load,** rather than doing several loads with only a few dishes, because the machine uses the same amount of water in each cycle regardless of the number of dishes.
- **Don't overload your dishwasher and match the cycle to the load.** For most loads, the normal setting will work best, but choose the cycle depending on the load and level of soil. Although it is best to run a dishwasher with a full load, make sure not to overload, so that all items are exposed to the water spray and nothing interferes with the spray arms or water jets.
- **Clean the dishwasher following the manufacturer's instructions.** By cleaning your dishwasher regularly according to manufacturer's directions, you can expect optimal cleaning. If your dishwasher doesn't have a self-cleaning filter, regularly remove the filter and clean out trapped food particles following the manufacturer's instructions. Also, clean the spray arm nozzle and water jet in order to maximize the power of the water flow necessary to clean dishes.
- **Air-dry dishes.** Don't use the heat-dry option; instead, use the no-heat option, or open the dishwasher door after the final rinse to let dishes air-dry. When opening the door right after the rinse, watch out for escaping steam. Also, if high humidity is a problem in your

home, do not open the dishwasher door to air-dry your dishes.

- **Don't use the "rinse-and-hold" feature unless it is necessary.** Depending on the age of your dishwasher, just rinsing the dishes could use several gallons of water.

References

Portions of this document are modified with permission from Home Series-4: Major Home Appliances, originally developed by the Iowa Energy Center, <http://www.iowaenergycenter.org/wp-content/uploads/2012/03/HomeSeries4.pdf>

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Developed as part of the NASULGC/DOE Building Science Community of Practice. The factsheet editors are: Robert "Bobby" Grisso, Extension Engineer, Biological Systems Engineering; Martha A. Walker, Ph.D, Community Viability Specialist, Central District; and John Ignosh, Area Specialist, Biological Systems Engineering.

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