



**Energy Efficiency and Renewable Energy
Federal Energy Management Program**

Federal Supply Sources:

- General Services Administration (GSA)
Phone: (816) 926-6760
www.fss.gsa.gov
www.gsaadvantage.gov
- Defense Logistics Agency (DLA)
Phone: (800) DLA-2852 or (215) 737-7950
www.dla.mil
www.emall.dla.mil

For More Information:

- DOE's Federal Energy Management Program (FEMP) Help Desk and World Wide Web site have up-to-date information on energy-efficient and water conserving federal procurement, including the latest versions of these recommendations.
Phone: (800) 363-3732
www.eere.energy.gov/femp/procurement
- The Food Services Technology Center (FSTC) has an online data base of products that have been tested in accordance with ASTM F2324-03 and meet this recommendation.
<http://www.fishnick.com/saveenergy/femp/>
- FSTC in San Ramon, California conducted research and product testing on pre-rinse valves. FSTC is funded by California utility customers and administered by the Pacific Gas and Electric Company under the auspices of the California Public Utilities Commission.
Phone: (925) 866-2844
www.fishnick.com
- FSTC has an online calculator that can be used to estimate the water, energy and utility cost savings from installing pre-rinse valves.
www.fishnick.com/tools/watercost/
- The California Urban Water Conservation Council installs free pre-rinse valves in food service facilities in California through its "Rinse & Save" program.
Phone: (916) 552-5885
www.cuwcc.org/sprayvalves.lasso
- Lawrence Berkeley National Laboratory provided market analysis for this recommendation.
Phone: (202) 646-7950

How to Buy a Low-Flow Pre-Rinse Spray Valve

Why Agencies Should Buy Efficient Products

- Executive Order 13123 and FAR section 23.704 direct agencies to purchase products in the upper 25% of energy efficiency, including all models that qualify for the EPA/DOE ENERGY STAR® product labeling program.
- Agencies that use these guidelines to buy efficient products can realize substantial operating cost savings and help prevent pollution.
- As the world's largest consumer, the federal government can help "pull" the entire US market towards greater energy efficiency, while saving taxpayer dollars.

Efficiency Recommendation

Product Type	Recommended		Best Available	
	Flow Rate	Cleaning Performance ^a	Flow Rate	Cleaning Performance
Pre-Rinse Spray Valve	2.0 gpm or less @ 60 psi	26 seconds per plate or less	1.6 gpm @ 60 psi	22 seconds per plate

a) Based on ASTM F2323-03: Standard Test Method for Pre-Rinse Spray Valves

Low-flow pre-rinse spray valves are available through the General Services Administration (GSA) and Defense Logistics Agency (DLA). GSA sells pre-rinse valves through its Multiple Awards Schedule program and online shopping network *GSAAdvantage!* DLA offers them through its Defense Supply Center Philadelphia and online through *DoD EMail*. Purchase models that meet the recommended flow rate and cleaning performance shown in the table above. When purchasing pre-rinse spray valves through a commercial source, request models that meet this Efficiency Recommendation.

All pre-rinse valves use a spray of water to remove food waste from dishes prior to cleaning in a dishwasher. They reduce water consumption, water heating cost, and waste water (sewer) charges. Note that not all low flow designs exhibit comparable cleaning performance. Products with high velocity spray patterns will show substantially better cleaning performance than those which simply use a flow restrictor to achieve the recommended gallon per minute flow. Purchase only those models that have been tested in accordance with ASTM F2323-03: Standard Test Method for Pre-rinse Spray Valves and meet this Efficiency Recommendation.

Where to Find Low-Flow Pre-Rinse Spray Valves

How to Select a Low-Flow Pre-Rinse Spray Valve

Pre-rinse spray valves include a nozzle, squeeze lever, and dish guard bumper. The spray valves usually have a clip to lock the handle in the “on” position. Pre-rinse valves are inexpensive and easily interchangeable with different manufacturers’ assemblies. A typical pre-rinse valve lasts about five years unless it is of substandard manufacture, improperly installed, or used in a facility with poor water quality.

Pre-Rinse Valve Features

Because scale buildup reduces their effectiveness and lengthens dish washing times, pre-rinse spray valves should be cleaned annually. For severely clogged valves, it is more cost-effective to replace the valve with a new, low-flow model instead of “drilling out” the scale to restore water flow, a practice which lowers spray velocity, increases water use and reduces the overall cleaning performance of the valves.

User Tips

Low-Flow Pre-Rinse Spray Valve Cost-Effectiveness Example			
<i>Performance</i>	<i>Base Model</i>	<i>Recommended Level</i>	<i>Best Available</i>
Water Use Only			
Nominal Flow Rate	3.0 gpm ^a @ 60 psi	2.0 gpm @ 60 psi	1.6 gpm @ 60 psi
Annual Water Use	262,800 gallons	175,200 gallons	140,160 gallons
Annual Water & Sewer Cost	\$1,050	\$700	\$560
Lifetime Water & Sewer Cost	\$4,815	\$3,210	\$2,570
For Gas Water Heating			
Annual Energy Use	1579 therm	1,053 therm	842 therm
Annual Energy Cost	\$948	\$632	\$505
Lifetime Energy Cost	\$4,020	\$2,680	\$2,145
Lifetime Water and Energy Cost Savings	-	\$2,945	\$4,120

Definition

Lifetime Energy Cost is the sum of the discounted value of annual energy costs based on average usage and an assumed pre-rinse valve life of 5 years. Future gas price trends and a discount rate of 3.0% are based on federal guidelines (effective from April, 2004 to March, 2005).

a) There is no federal standard for pre-rinse spray valves. Researchers at FSTC estimate the industry average at 3.0 gpm.

Cost-Effectiveness Assumptions

Annual energy use is calculated based on a boiler efficiency of 80% and a 58°F temperature rise. The pre-rinse spray valve would be used an average of four hours per day, 365 days per year which is typical in Veteran’s Hospitals and federal prisons, and on military bases. The gas price is \$0.60 per therm, the average in federal facilities in the US, and the assumed water/waste water rate is \$4.00 per 1,000 gallons.

Using the Cost-Effectiveness Table

In the example above, the recommended pre-rinse valve will save \$2,945 in water and energy costs during its five year life. The Best Available model will save \$4,120. Due to their low price and ease of installation, a new pre-rinse valve is certain to be cost effective.

What if my Gas Price, Water Rate or Operating Hours are different?

To calculate Lifetime Energy Cost Savings for different operating hours, multiply the savings in the above table by this ratio: $\left(\frac{\text{Your operating hours}}{1460 \text{ hours}}\right)$. Similarly adjustments can be made for different gas and water/sewer prices.

Metric Conversions

1 gallon = 3.8 liters
 1 therm = 100,000 btu
 = 29.3 kWh
 = 105.5 MJ
 1 psi = 6.9 kPa
 °F = (°C * 1.8) + 32

