Revolution, Not Agitation: A New Spin on Clothes Washing

For years, Europeans have used small, water-conserving, energy-efficient washing machines. But most washer manufacturers serving the United States haven't bothered trying to sell them here. The machines have always been expensive, small, and slow, making them inappropriate for Americans accustomed to big, fast muscle machines. At the same time, the American preference for powering out stains has led many people to use more hot water than they need for clothes washing. The result? A lot of wasted energy. However, things are starting to change.

America's 35 billion annual loads of laundry eat up 2.6% of total residential energy. This waste is now being cut by improved detergents and washer designs. Americans are slowly accepting that energy-efficient washing can actually get clothes clean. People are using colder water today than they did 20 years ago, and efficient horizontal-axis washers are starting to boom.

COURTESY OF FRIGIDAIRE

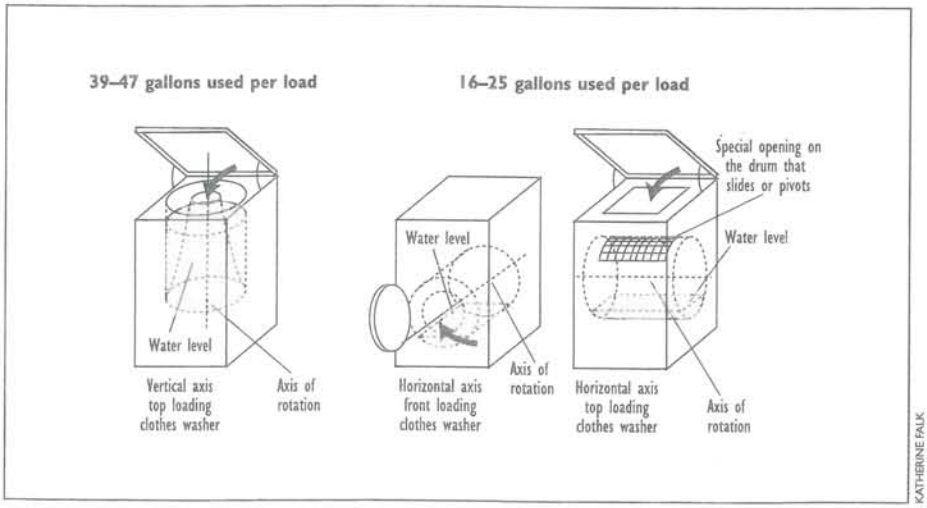
Horizontal axis washers, such as this model from Frigidaire, can use less than half the energy and two-thirds the water of traditional washers for the same volume of laundry.

Horizontal-axis clothes washers can save as much as 60% of the electricity and one-third of the water used by traditional washers cleaning the same volume of clothes (see Figure 1). They can also conserve drying energy by spinning clothes faster than vertical-axis washers. According to *Consumer Reports*, by eliminating the agitator, horizontal-axis washers also reduce wear and tear on clothes.

Efficient machines have long been the norm in Europe, but for years, only one U.S. manufacturer—Frigidaire—made a horizontal axis residential machine. This model, like those imported from Europe, had only one-third the capacity of most vertical-axis machines and took a long time to finish a load. These restrictions limited such designs to 1%–3% of the market.

In an attempt to enhance home energy and water efficiency, the Consortium for Energy Efficiency (CEE) has initiated widespread utility rebates to encourage the purchase of washers that are as efficient as the best horizontal-axis machines. They have persuaded 24 utilities, representing 9% of U.S. households, to offer rebates of $100 to $250 to utility customers who buy qualifying washers. The program's intent is to speed the development, sale, and use of efficient washing machines. The rebates cover most of the price difference between conventional washers (which cost about $600) and the more efficient washers (which cost between $700 and $1,300).

The program seems to be working. While two years ago there was only one qualifying washer on the U.S. market, three qualified last November, and there were 11 as of fall 1996. As of Sep-



KATHERINE FALK

Figure 1. Water use in different types of clothes washers.

tember 1996, Frigidaire is selling an efficient, high-capacity machine; Whirlpool and Maytag intend to release such models by the end of the year. So far, all qualifying washers have been horizontal-axis models, but efficient vertical-axis machines may be on the way. While sales are still slow, CEE program manager Andrew deLaski expects that in the near term, rebates could help efficient washers to capture as much as 10% of the washing machine market. DeLaski guesses that in the long term, regardless of rebates, these more efficient, effective, and expensive washers can expect a 30%–40% market share. That's a large slice of a big pie—5 million washers are sold each year in the United States.

Past increases in washer efficiency resulted from federal standards. For example, starting in 1988, federal rules required that washers offer a cold water rinse. The U.S. Department of Energy has been working on new standards that may require increased efficiency, but no such rule has been issued. New standards may require all washers to be as efficient as horizontal-axis machines, and mandate maximum retained moisture levels in order to reduce drying energy. If such a rule is issued, vertical-axis machines will have to become far more efficient in order to be sold in the United States. Because of built-in delays in the standards, it will be at least the turn of the century before federal rules require the more efficient machines.

Meanwhile, detergent makers have been developing more advanced products that clean at lower temperatures and rinse out faster. In new washers, faster rinsing means less water use because the machines stop using water once they sense that the clothes are rinsed. On average, a concentrated detergent in such a washer will require 7 fewer gallons of rinse water. Concentrates also generally cost less per use.

A load of laundry uses as much as 90% of its wash energy in heating up water. By encouraging cold- and warm-water washing, new detergents are succeeding at reducing energy use. According to Proctor and Gamble, in 1975 15% of washes were in cold and 30% were in hot water, compared to 30% in cold and 19% in hot in 1989.

—Steven Bodzin

Youth Energy Conserves Home Energy

How do you join poorly educated, unemployed youths with low-income residents, weatherization agencies, and contractors in a partnership that benefits all of them? The Bronx-based Youth Energy Corps (YEC) is doing just that, and setting an example for other communities to follow.

The Corporation for Youth Energy Corps was established in 1980 as a work-study program in which at-risk and disadvantaged youths in the South Bronx, New York, could gain on-the-job training. YEC initially specialized in window repair and installation, but in 1992 began a partnership with Con Edison and New York's Weatherization Assistance Program to weatherize one- to four-family residences in low- and moderate-income neighborhoods in the Bronx. Today, YEC crews use blower doors and laptop computers to perform home energy audits, seal air leaks, add blown-in high-density insulation to sidewalls and crawlspaces, test boilers, and repair roofs. True to their roots, they still repair windows as well.

YEC's 12-month training and education program accommodates up to 40 participants a year, enabling them to earn their GED and helping them to find jobs at the end of the program. According to YEC president Steven Reese, between 62% and 66% of youths entering the program graduate and get placed in jobs—a considerable achievement, given that some participants have only a fifth-grade education when they begin. Reese says, "It's exciting because we're helping to turn around young lives. It's an ongoing challenge, since we have limited time to train people, and we have to turn out quality work—we're held to the same work and energy performance standards as any other contractor."

Many participants who complete the program find work with weatherization agencies or contractors. Some find other construction work, and some go to work for other employers. YEC also provides placement assistance for participants beyond their first job. Recently, YEC has begun to farm out some of its advanced corps members for part-time work with weatherization agencies before they finish the program. The agency gains free

CORPORATION FOR YOUTH ENERGY CORPS, INC.

Members of the Youth Energy Corps carry a hopper for their blow-in insulation work.

temporary labor, and the YEC member begins receiving training from a potential future employer.

YEC works on 300 to 400 residential units a year in the Con Edison service area. Many units are occupied by low-income senior citizens, who receive the services free of charge and save as much as 50% in annual fuel bills.

YEC has done demonstration projects in other communities too. In 1995, Reese did a three-week demonstration project in East Los Angeles. He led a group of California Conservation Corps (CCC) employees who insulated and air sealed 37 housing units. Like the New York program, this was a cooperative effort; it involved the nonprofit Maravilla Foundation, Southern California Gas Company, and the CCC program in Pomona. The Pomona CCC continues to do weatherization projects in Southern California. A smaller demonstration project in Albany, New York, weatherized a three-family housing complex in conjunction with the Albany Service Corporation.

YEC is supported by federal, state, and private sources. But, in this era of shrinking funding, the corps may need to adapt.

"We're looking to survive regardless of what happens with government funding sources in the future," Reese said. And he added, "We think we could almost support our annual budget of $1.5 million just by repairing broken windows." YEC can be contacted at 45-67 W. Tremont Ave., Bronx, NY 10453. Tel:(718)294-2000; Fax:(718)294-2281.

—Ted Rieger

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