STABER
SYSTEM 2000
Water Conservation System

Benefits of the **System 2000**:

- 50% less energy
- 67% less water (great for wells & septic systems)
- 75% less detergent
- Patented stainless steel tub construction
- No transmission or agitator (more gentle on clothes)
- Extracts more water for less drying time
- Larger capacity than traditional agitator washers
- Longer life expectancy
- Total front access to parts
- Pays for itself within two years

Reprinted from THE WALL STREET JOURNAL.

MONDAY, MARCH 21, 1994

IN THE LAB

A Small Company Puts A New Spin on Washers

By ROBERT L. ROSE
Staff Reporter of THE WALL STREET JOURNAL

GROVEPORT, Ohio — **Staber Industries** Inc. has invented a machine that turns the business of washing clothes on its side.

Led by brothers William and Jim Staber, the company created a European-style washer that tumbles clothes on a horizontal axis, rather than the American way of churning clothes with an agitator. Because it uses less water, a horizontal-axis machine is considered far more efficient than today's U.S. models with vertical axes.

Facing the prospect of tougher government-mandated energy-efficiency requirements in 1999, companies such as **Maytag** Corp. and **Whirlpool** Corp. are studying horizontal-axis machines. But the Stabers, who say they have declined to give samples of their System 2000 machines to Maytag and Whirlpool, appear to be far ahead.

The Stabers' game plan was to simplify and Americanize the European-style washer. Theirs loads from the top, for example. Most of Europe's washers, and a horizontal washer made in the U.S. by the Frigidaire unit of Sweden's **AB Electrolux**, load from the front. The Stabers even made their machine bulkier than it has to be so it looks similar to today's U.S. models.

The brothers still have to prove there's a market for the machine into which they have put some $2 million over the past four years. Their assembly line cranks up next month, at an initial rate of five washers a week. But they have already demonstrated that it doesn't take a huge budget or a big research team to create an innovative new product.

"It's not because we're a bunch of greenheads," says William Staber, 35 years old, dismissing an environmental motivation. "It was a better way to do it."

The Stabers stumbled on their idea after watching the decline of their basic business of remanufacturing washing machines and studying the government's plans to tighten efficiency requirements. "We decided we wanted to be in something other than the tail-end of the product life-cycle," says Jim Staber, 45.

The brothers turned to Ed Chilcoat for help. Mr. Chilcoat, an engineering manager for a large commercial laundry in his previous job, repaired his parents' washer when he was 10 years old. It wasn't washing machines that intrigued him, but the challenge of designing a new product.

Mr. Chilcoat became the first of four engineers who worked on the Stabers' machine. At first, Mr. Chilcoat worked at home, coming up with early concepts on a computer-aided design program. Later, the 39-year-old engineer persuaded the Stabers to invest in a similar system for the office.

At Staber, Mr. Chilcoat found that research and development meant borrowing a room here or a factory corner there. He spends much of his time in a makeshift computer room dubbed the "bat cave," because its windows are covered with black plastic to make it easier to see the computer screens.

It was in the bat cave that Mr. Chilcoat worked on the unique shape of the sides of the machine's inner and outer wash tubs. In all horizontal-axis machines, water flows through the holes of the inner tub and into the clothes. But instead of using circular tubs, Mr. Chilcoat increased the

(over please)

force of water moving from one tub to the other by making the tubs many-sided.

He experimented with the idea on the computer. A few steps away in the factory, Mr. Chilcoat welded and assembled the tubs. They became part of the first crude washer, complete with a clear front so the engineers could see inside. The result is that the tub works like a water pump, but without the pump. Early this year, Mr. Chilcoat and Staber Industries were granted a patent for the idea.

The crazy-shaped tub, which the Stabers say gets clothes cleaner, wasn't the only innovation. Maytag uses a plastic ball as a hinge for the lid; Staber simplified it further, making a plastic ball part of the lid. It also made the machine easier to repair by making key parts accessible from the front.

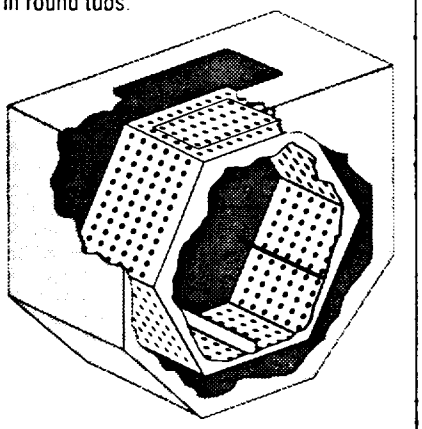
More improvements are planned. Electrical engineer Mike Shaw works on new electrical controls in an office papered with blueprints tacked to unfinished dry wall. His task is to develop flexible controls that will allow Staber to customize wash cycles for individual customers.

The System 2000's biggest selling point is that it saves resources: as much as 66% less water and energy to heat the water, and as much as 75% less detergent, the makers claim. But clothes can't be added during the cycle because the lid is locked until nearly two minutes after the washer stops, a safety feature shared by European models. With prices expected to range from $995 to $1,195, a System 2000 will cost two or even three times current U.S. models.

"We're not sure that market is out there," says J.C. Anderson, Whirlpool's vice president of laundry manufacturing and technology. The big appliance makers fear that if the government creates that market with tough efficiency requirements, it could cost hundreds of millions of dollars to retool their factories.

The Staber System 2000

As the six-sided inner tub rotates inside the outer tub, water is forced through holes of the inner tub with more power than in round tubs.



The Stabers say they'll settle for a niche in the $2.5 billion-a-year U.S. washing-machine market, or even an agreement to sell its technology to General Electric Co., which is testing their machine. A GE spokeswoman says the company won't comment on its dealings with Staber.

Frigidaire, meanwhile, plans a new horizontal washer for next year. And Maytag has earmarked as much as $50 million to produce one of its own. A few weeks ago, seven Maytag officials traveled to Columbus, Ohio, where they washed their clothes at a coin-operated laundry that's testing the Stabers' System 2000 machines.

STABER
SYSTEM 2000
Water Conservation System

Getting More For Your Money: The Second Price Tag

When buying a clothes washer, it can be helpful to think of two price tags. The first price tag is the price paid to purchase the appliance. The second price tag is the cost to operate the appliance over its lifetime.

Here's how to calculate the second price tag for a given appliance:

Annual Cost	X	Lifetime of Appliance	=	Second Price Tag

Example for family doing 8 loads per week at National average utility rates:

Traditional agitator washer

$593.42	X	20	=	$11,868.40

Staber System 2000

$253.42	X	20	=	$5,068.40

You will save about **$6,800.00** over the life of the appliance by purchasing the Staber System 2000.

Note: Current agitator washers have an average lifespan of 13 years

Translating Energy Savings

ENERGY Saved...	In Real Terms...
800 kWh of electricity	--Enough to run a clothes washer 400 times, or 8 free loads of laundry every week for a year. --Enough to leave a 60-watt light on for 20 months --The same as running a new refrigerator for 14 months

Translating Water Savings

Most of the energy consumed by clothes washers is used to heat the water. The System 2000 saves up to 9,000 gallons or more of water per year. This is the same amount used to:

--Flush a typical new toilet 6,000 times
--Take 720 5-minute showers

energy
EPA DOE

*Using products with the ENERGY STAR® label can save energy. Saving energy reduces air pollution and lowers utility bills.