

# Commercial Appliance Manufacturer Sets New Standards—Inside & Out

During World War I, a “hard-headed and inventive” dry cleaning plant owner, Abe Traube, shook the foundations of the laundry and commercial dry cleaning industry when he developed and introduced a revolutionary new washing machine.

Seventy years later, the Washex Machinery Company—now a division of White Consolidated Industries, Inc. and a member of the ELX Group—is the world’s leading manufacturer of heavy-duty (85–1,200-lb load capacities) laundry and textile processing equipment. Recently, this quality-minded company made improvements to its finishing line ... improvements that are setting new standards throughout the industry.

**W**ashex Machinery Company, Wichita Falls, TX, is widely recognized in the commercial market for its effective and efficient methods of manufacturing the finest laundry systems available today. It is the world’s leading manufacturer of washer/extractors, textile dyeing, microcontamination, and denim processing machines.

In a 280,000-ft<sup>2</sup> plant staffed with more than 300 employees, Washex produces a broad, made-to-order product line using just-in-time manufacturing methods. Approximately 1,800 product variations can result from the Washex line, which includes more than 60 models and 600 options. “It seems as though no two machines we sell are exactly alike,” says William C. Nehren, vice president of operations for Washex and member of the Society of Mechanical Engineers.

Most recently, the company’s high standards of production were reflected in changes made to its products paint finishing process.



Washex replaced its conventional spray system with a high-volume, low-pressure (HVLP) paint spray system, which has significantly reduced overspray.

## Coating Concerns

The heavy-duty commercial washing machines are primarily stainless steel interiors, with carbon steel exteriors. Depending on customer requirements, the carbon steel plate used is up to two inches thick. Standard on all machines are microprocessors that offer wash programs (with displays available in English, French, German, Spanish, Swedish, Danish, Norwegian and Finnish) for a variety of fabrics, temperatures and levels, plus integral self-diagnostics and service functions. When completed, the larger machines can weigh up to 10 tons.

It is not uncommon for Washex machines to operate continuously, 24 hours a day. Because the paint finish is subject to intense heat, moisture and strong chemicals, it plays an important role in corrosion protection, as well as product appearance. When Nehren joined Washex a few years ago, finish quality was an immediate cause for concern. The polyvinyl coating system being used was creating an adhesion problem.

“When I lifted a tarp to look at one machine, the finish came right off with the tarp,” Nehren remarked. In addition, the finish was difficult to texture in a uniform, pleasing appearance. “When you look at any product,

the first thing you see is the finish,” Nehren continued. “I knew immediately that I wanted to upgrade to a higher-quality coating.”

## A Noticeable Improvement

One of Nehren’s first priorities became the selection of a coating system that would improve finish quality. After available coatings were researched, Washex settled on a system consisting of a recoatable epoxy primer and proprietary polyurethane enamel,<sup>1</sup> both provided in the company’s custom “Washex blue.”<sup>2</sup>

The new process resulted in an immediate, noticeable improvement. “As soon as we started using it, corrosion in the field almost completely disappeared,” Nehren said. He also feels confident that, even under highly corrosive conditions, the new coating system has basically corrected some severe field problems.

The primer for the process was chosen for its corrosion resistance, excellent adhesion and quick-dry qualities. The enamel was selected for acid resistance, hardness and durability, as well as corrosion resistance and adhesion. The new coating is also easier to texture than the previous one, resulting in a more consistent, uniform and attractive finish.

## Process Changes

After solving the coating problem, Washex decided to investigate possible improvements to its finishing process line. Upon the recommendation of Hal Shackelford, chemical coatings specialist with The Sherwin-Williams Company, Washex replaced its conventional spray system with a high-volume, low-pressure (HVLV) paint spray system. The HVLV system uses turbine air at low pressure (approximately 10 psi) to atomize the fluid coating and apply it to the substrate, thereby significantly reducing overspray.

The reduction in overspray resulted in materials savings of almost 20 percent. The HVLV system also provided better flow and control, which improved texturing and touch-up steps.

Surface preparation methods were also updated. In the production process, carbon steel for the product's exterior is cut by either digital numerical control (DNC) direct machinery, or by the plasma oxy-acetylene burning center, and the components are welded together. The exterior shell is then sent to the surface preparation booth. Using compressed air, a metal medium is manually blasted into the carbon steel, creating a surface profile for the primer.

In a finishing booth (25 ft by 35 ft) equipped with HVLV spray equipment, the recoatable epoxy primer is applied to the shell, to 3-mil dry film thickness. The primer cures in just one hour. Smaller units are sent directly to the topcoat finishing booth, where the polyurethane enamel is applied at a 1.0–1.5-mil dry film thickness before the units are assembled. Larger units are assembled after priming—before the application of the topcoat.

"Depending on the model," said John Becker, director of manufacturing for Washex, "we can build a unit from raw materials in anywhere from 11 to 120 days. That includes cutting and forming the steel, assembling the electronic microprocessor, installing the drive system, and applying the finish."

## Quality is the Key

Throughout the production process, roving inspectors check every phase of the project. After the equipment is manufactured, it goes through a series of tests—including a final inspection

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of the finish—to ensure long-term quality performance in the field.

Domestic and rapidly growing overseas markets for Washex products include hotels, hospitals, industrial clean rooms (class 10 or better), and textile manufacturers involved in dyeing and denim stone-washing. Aware that water is becoming a precious and limited resource to laundry operators, Washex also offers a patented water reuse system that can be added to the full range of Washex washer units, and can reduce water consumption approximately 30 to 45 percent.

The company's proven success has stemmed from its original commitment to innovation and quality. From start to "finish," that commitment is evident in product construction and durability, uncompromising customer service, and a continuing pursuit of the most advanced technology.

With its new finishing system now in operation, Washex is truly setting new standards for commercial laundry equipment—both inside and out. □

<sup>1</sup> POLANE® T

<sup>2</sup> Provided by The Sherwin-Williams Company

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