

Compact Parts Cleaner Satisfies Company's Environmental And Productivity Concerns

Ruland Manufacturing Company (Marlborough, Massachusetts) specializes in shaft collars, rigid couplings and flexible couplings. The company's products vary in material (carbon steel, stainless or aluminum) and size (ODs from $\frac{3}{8}$ inch to 7 inches), but all meet close tolerances. Cleanliness specs are demanding for all, but especially for the carbon steel parts, which are black oxidized. For years, Ruland used vapor degreasing with TCE, but concerns about ozone depletion and potential carcinogens led the company to look for an alternative.

"We searched for two years, doing a thorough review of every type of cleaning system out there," recalls Mike Pervier, facilities manager at Ruland Manufacturing. "Aqueous just wouldn't get the parts as clean as we wanted in the cycle time we wanted without a lot of cost and aggravation."

Finally, Ruland discovered a hydrocarbon cleaning system from Dürr Ecoclean (Wixom, Michigan) that promised to be both productive and environmentally friendly. The system combines immersion cleaning, injection flood washing and vapor degreasing with vacuum drying, reducing emissions to virtually zero.

"It sounded too good to be true," says Mr. Pervier. "We sent two people to Dürr's Michigan facility with parts and said 'Clean these!' It was unbelievable—the parts were perfectly cleaned, in half the time."

As a result, Ruland installed a Dürr Compact 80C parts cleaning system. Because the machine is only about 14 feet long by 5 feet wide, it was brought into the plant by one man, on a dolly. It was up and running the next day.

"To the operators, it's just like our previous system," Mr. Pervier notes. "They put pans of parts on the conveyor, and it automatically loads and unloads the work chamber."



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Instead of baskets, Ruland uses standardized pans measuring about 9 inches by 19 inches by 7 inches deep. The parts stack together like coins, bonded by the capillary action of the oil and coolant. Each pan holds 200 to 250 of the larger collars or couplings, or 3,000 of the smaller ones. Typical production is 60 pans per day, although the system can handle more. Some parts are washed two or three times, at different stages of production.

Halves Cleaning Time

The cycle time for the new cleaner is 7 minutes, half the time required by the previous method. Although the differences in material and configuration would challenge some cleaning methods, the new system cleans them all consistently.

"Cleanliness is essential to our quality," explains Mr. Pervier. "Our process requires us to be very fussy. But even the parts with blind holes, where

Loading/unloading of parts-laden pans into the work chamber is completely automatic.



