

World Kitchen: New Rotary Fire Polisher

Corning, NY

Background

The World Kitchen Pressware Plant located in Corning, NY, is a worldwide manufacturer of Corelle® high-quality dinnerware. The 375,000-square-foot manufacturing plant contains both a single-story manufacturing floor and a two-story office area. The entire campus is spread out over 12 acres.

Objectives

World Kitchen has a corporate objective to reduce energy use at its sites and partnered with NYSERDA to help achieve that goal. NYSERDA's technical experts work with site personnel to assess energy savings opportunities in potential productivity projects. Once projects are identified, the technical experts analyze the data collected by the plant to estimate energy savings.

One of the many projects identified was improvements to the rotary fire polisher, which rotates molded glass pieces past a gas flame to fire-polish the raw edges. It was difficult to maintain the machine's alignment, and as a result it was common to have glassware either fall off the machine or not be fully polished.



“NYSERDA has been extremely helpful assisting our facility to identify energy reduction opportunities, producing the necessary technical documentation, and working with our team to develop a comprehensive, sustainable, energy reduction plan. They have been a valuable partner in our mission to reduce energy use.”

*– Monti Emery, Engineering Manager
at the World Kitchen Pressware Plant*



Results

A rotary fire-polishing machine with newer control components and 70% fewer moving parts was developed. The polishing burners were upgraded, and new tooling was implemented for non-round parts.

Although the efficiency of the new machine was equivalent to the old one that it was replacing, it did offer close to a 30% increase in productivity due to its faster processing time and reduction in product defects. This allowed the machine to increase the number of good pieces per year.

The rotary flame-polishing machine itself uses natural gas, but the manufacturing step just prior to the polisher heats glass in refractory tanks using electricity. Using the same amount of energy and increasing the throughput of the product reduced the amount of electricity consumed on a kWh per piece basis. This results in a yearly reduction of \$192,000 in energy costs.



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