

# Capitalizing on customized capping technology

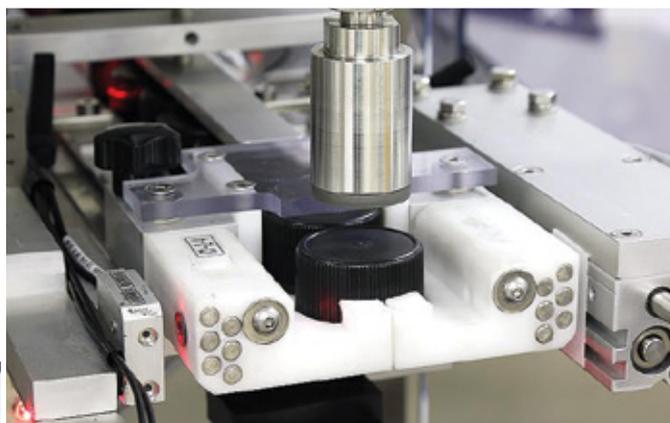
Chemical/pharmaceutical company installs state-of-the-art automatic in-line capper to improve operating efficiencies and QC.

**JUDY RICE** CONTRIBUTING EDITOR

**M**illiporeSigma Corp., Cincinnati, OH, is a U.S. unit of the Life Science Business of Merck KGaA, Darmstadt, Germany. The global business manufactures pharmaceuticals and chemicals and offers a catalog of more than 300,000 products.

MilliporeSigma wanted to do a capping equipment upgrade. One of its cappers for organic solvents in brown glass bottles was an older system that was presenting alignment issues. The plastic (nylon and phenolic) caps were not always properly applied to produce high-integrity seals on the 500-mL, 1-L, and 4-L bottle sizes.

After evaluating various options, MilliporeSigma decided to install the small-footprint, ruggedly constructed "Secure Chuck Capper" automatic in-line cap applicator from **BellatRx, Inc.** ([www.bellatrx.com](http://www.bellatrx.com)). Several of this capper's features appealed to the evaluation team, and the equipment has been certified Class1 Div 1 for applicable UL and NFPA standards.



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trap gaskets. A grip chuck torqueing station maximizes the surface area of the chuck to the cap, significantly improving control of the torque being applied and the life of the chuck. And the neck centering clamps on the first station, where caps are applied and partially torqued, contribute significantly to lowering reject rates. Bottle clamps on both the first and second stations ensure that the bottles will not slip when being torqued. To view the capper in action, go to [pwgo.to/2141](http://pwgo.to/2141).

Chris Brace, Senior Chemical Engineer for MilliporeSigma, notes, "During installation of the capper at our Norwood facility in February 2016, a BellatRx technician was there for five days working with us on the installation, training and start-up. The location of the unit was in a difficult place. It had a low ceiling (7 feet) and structural post supports that had to be worked around. BellatRx was very helpful in accommodating our needs."

The user-friendly HMI (Human Machine Interface) controller operating panel is located behind glass in a purged box with a Class 1 Div 1 keyboard, and the machine is supplied with a purged electrical enclosure.

MilliporeSigma has been able to reap important operating benefits with the new chuck capper. Torque control and cap liner quality control have improved, leading to enhanced seal integrity. Product spillage and leakage problems and fume emission issues have been addressed, resulting in a safer work environment. Brace adds, "We see this equipment with the immediate torque feedback as revolutionary for our chemical bottling business." **PW**

## Custom capping line configuration

BellatRx customized the capper to address MilliporeSigma's exacting needs and floor space limitations. Specific operating advantages include the versatility to accommodate a wide size/shape range of bottles, containers, and caps, including coated bottles and containers with handles, at speeds up to 120 cpm. And the chuck capper is well-suited for areas where dangerous concentrations of flammable gases or dust can build up. A stainless steel chain conveyor transports the bottles through the capper to prevent static and handle the heavier weight of large bottles. In tighter floor space surroundings, an anti-static elevator is available in a shortened version.

As a quality control feature, caps without liners are detected and rejected before entering the capping station. All out-of-spec bottles also are tracked and transferred onto a reject table.

After the bottles are pressure filled, caps are applied using a trap-door cap trap and chuck specially designed to eliminate issues and replacement costs sometimes associated with more conventional cap