

# Reduced downtime and product giveaway with Micro Motion mass filling meter

## RESULTS

- Reduced product giveaway by 75% with tighter tolerances
- Eliminated calibrations for faster product change-over
- Improved fill accuracy with mass measurement technology
- Minimized downtime and improved overall filling throughput by 300%
- Eliminated measurement issues caused by entrained air



## CUSTOMER

The U.S. division of a major global producer of personal care and cleaning products (soaps, deodorants, and laundry detergents) was looking to improve the efficiency of their liquid laundry detergent and fabric softener filling lines.

## APPLICATION

In most consumer goods manufacturing plants, the final operation is filling consumer packages. Historically, common filling methods of bottles, cans, or other packages included volumetric metering, positive displacement pistons, or level sensing technologies. Each of these options can result in non-repeatable fills due to variances caused by temperature, density or viscosity changes in the product being filled. In this application, the company was using a volumetric piston-based filling machine to fill bottles of varying sizes with liquid laundry detergents.

## CHALLENGE

The use of piston-based filling resulted in non-repeatable fills with variations that were unacceptable. Because of these variations, filling set-points were being set higher than desired, resulting in costly product give-away to ensure that short-fills were not occurring. In addition, the mechanical nature of the piston fillers required longer than desired cleaning cycles and lengthy shutdowns during product and container change-overs. These issues resulted in unacceptable machine down-times and reduced the company's ability to maximize production throughput in the filling area.

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Mass-based filling machine with Micro Motion® Coriolis meters and Filling Mass Transmitters



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**SOLUTION**

Pneumatic Scale Angelus (PSA), a division of Barry-Wehmiller Company, was asked to assist with the issues of inconsistent fills and throughput limitations on the laundry detergent filling system. PSA designed and built a 24-head filling machine for the company which utilizes Micro Motion Coriolis sensors with Filling Mass Transmitters to fill each container on a direct mass basis. The benefit of Coriolis direct mass measurement with a delivered accuracy of  $\pm 0.1\%$  significantly reduced the inconsistent fills which were being delivered with the prior volumetric machine and eliminated the impact of entrained air that is prevalent with highly viscous detergents and fabric softeners. Tighter tolerances were quickly achieved which reduced the amount of product give-away by an estimated 75%. Measuring on the basis of mass also allowed the company to switch between products of varying densities and viscosities without the need to recalibrate or fine tune the machine as was necessary with the previously-used piston filling system.

Given that there are no moving parts on the Micro Motion Coriolis meter, many of the problems of maintaining the previous piston-based system were eliminated and machine

downtime was reduced significantly. While the number of filling heads on the new machine increased from 18 to 24 (+33%), overall filling throughput was increased by an estimated 300% due to reduced set-up times and faster operations over the prior mechanically-based volumetric piston technology.

The Micro Motion Coriolis meters with Filling Mass Transmitters have an unobstructed flow path, which means the meters can be thoroughly cleaned with the company's existing Clean-In-Place (CIP) system. This feature also reduces overall downtime for cleaning and improved the overall product throughput on the filling line.



PSA 24-head filling machine with Micro Motion Coriolis meters with Filling Mass Transmitters



Micro Motion ELITE Coriolis meter with Filling Mass Transmitter

