Application Case Study

Application: Cleaning High-Volume Beverage Components		**Date:**
Serial number: 800-0516	**Machine model:** Aquamaster CI-1400E	
Machine type: Conveyorized Indexing	**Industry:** Food and Beverage	

Customer summary:	Food and beverage product manufacturer
Item to clean:	Aluminum nitrous oxide charger bottles
Contamination:	Chips, tooling lubricants
Cleanliness requirement:	Visually clean, free of lubricant
Dryness requirement:	100% dry
Production rate:	200 bottles per minute, continuous production
Process parameters:	Wash, rinse, heated blowoff

Customer background:

The customer is a US-based producer of food products, including compressed gas cartridges used in the food service industry. A popular product of the company is the whipped cream charger bottle.

Challenge:

The customer was looking for a new solution to cleaning a very high production rate of small aluminum charger bottles for use with nitrous oxide food products. The rate is 200 bottles per minute, and bottles needed to meet food-grade cleaning specifications.

Solution:

Alliance provided a 14-inch wide conveyorized indexing machine with special stainless steel part fixtures designed to hold the small charger bottles in an upright position, 8 bottles per row. Bottles are loaded by a feeding device, 8 bottles every 1.4 seconds. Using indexing, precise cleaning is accomplished at various stops where dedicated spray nozzles can target the interior of the bottles through a tight neck opening, measuring only 1/4" at the opening, and tapered to 3/16", in diameter. The wash zone has 38 targeted positions, and the rinse zone has 15 targeted positions. Cycle times are as follows: 2.4 second spray, 1.4 second fill, and 1 second move time between index locations. Exterior of the bottles are cleaned using a general spray pattern configuration. A load end profile plate stops the conveyor if a part is mis-loaded, which prevents damage to the machine. Solution is filtered through multiple filter chambers to ensure contaminants are not re-deposited onto parts. A compressed air blowoff targets the interior of the charger bottles, and a heat blower fully dries parts upon exit from the machine. Cartridges are auto-discharged using compressed air to assist in ejecting the parts from the fixture.

Application Case Study

Caption A

Caption B

Caption C