

Parison Programming Control

Plastics blow-molding OEM uses Rockwell Automation Integrated Architecture™ to achieve parison control system

Success Criteria

- Flexibility – To accommodate quick product changeovers, the system controlling the blow-molding machine relies on programmable automation controllers with integrated visualization capabilities.
- Ease of use – For maximum ease of use, this streamlined blow-molding machine offers high uptime and longer-lasting performance. Using a single integrated control and information platform helps improve user productivity and reduce total cost of ownership.
- Services and support – Reliable and ongoing support from global distributors and the OEM help end users reduce the risk of downtime.



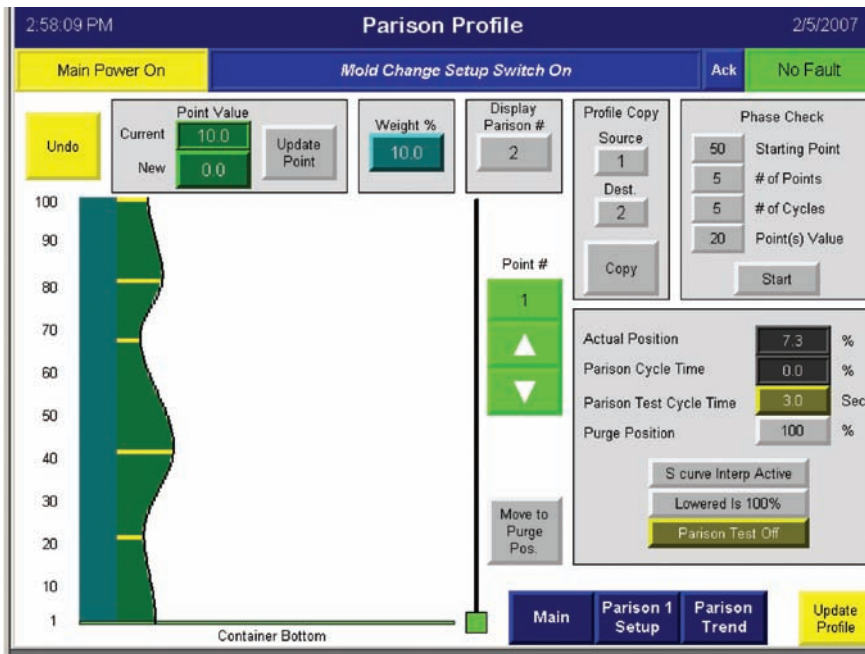
R & B works with Rockwell Automation to offer users scalable solutions for parison-control retrofits. This approach leaves all other machine control systems in place.

Serving customers in a variety of plastics industries, including consumer packaged goods, chemical, automotive and dairy, R & B Plastics Machinery is focused on providing customers with solutions for machine, mold, trimming and tooling systems. This original equipment manufacturer (OEM) focuses on continuous extrusion blow-molding and offers a wide selection of custom options that help its customers secure a competitive advantage.

R & B's line of blow-molding combines the advantages of wheel and shuttle blow-molding machinery, specifically high output rates, with the advantage of a calibrated water-cooled neck finish. These machines are designed to accommodate multiple parisons, multilayer coextrusion and in-mold labeling of containers from 12 ounces to 2.5 gallons. Additionally, the machinery has been designed for ultimate flexibility with quick changeover features, as well as programming designed to ease operator-level interaction.

The majority of R & B customers are plastic processors, so rising costs of natural materials are always a concern. End users continually stress the importance of managing exactly how much plastic is incorporated into every container. Addressing this concern, R & B specializes in parison control. This type of programming allows users to get an accurate

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The entire control system uses a single programming environment – Rockwell Software RSLogix 5000 design and configuration software.

measurement of where plastic will be used, thereby reducing cycle time and saving money.

Parison-control programming is used to achieve optimum wall thickness of continuously extruded profiles. During the process, a two-piece mold is injected with plastic in an environment that takes temperature, velocity and quantity into consideration. Then, the mold is moved under an air-injection station, where air is blown into the mold, forcing the plastic out to form an opening. Often, this process is used to obtain hollow spaces in plastic bottles where thickness can be modulated depending on the required resistances.

R & B works with Rockwell Automation to offer users scalable solutions for parison-control retrofits. This approach leaves all other machine control systems in place. R & B can also build all the way up to a complete blow-molding machine.

“Our selection to use Rockwell Automation is entirely focused

on our customer base,” said Bob LaGanke, president, R & B. “When our customers request Rockwell Automation, it is due to their brand recognition and reputation for quality products.”

Depending on the end-user specifications, a blow-molding machine is built on either the Allen-Bradley® ControlLogix® programmable automation controller (PAC) or, for smaller applications, the Allen-Bradley CompactLogix™ PAC from Rockwell Automation.

With the Allen-Bradley PanelView™ Plus operator interface, the controllers leverage the Rockwell Automation Logix Control Platform, which is part of the company’s Integrated Architecture™ system. The definition of an Integrated Architecture platform encompasses both automation and information segments, and incorporates the Logix Control Platform and the FactoryTalk® Integrated Production and Performance Suite. The FactoryTalk suite is focused on

meeting customers’ information needs while the Logix Control Platform focuses on meeting customers’ control system needs.

Using the Logix Control Platform, which includes a common control engine, networking technology and communications services, helps R & B to increase functionality, scalability and flexibility. Additionally, the platform is multidisciplined to provide fully integrated solutions for the full range of control disciplines – including discrete, motion, process control, drive control, safety and information.

“The controllers from Rockwell Automation are supported through a life-cycle management system,” said Jake Losee, electrical control manager, R & B. “This level of support allows us to provide our customers with a machine that will last year after year without having to create downtime replacing or converting parts.”

R & B also uses the Allen-Bradley ControlLogix Fast Analog I/O module from Rockwell Automation. This module helps users meet the processing demands of high-speed applications. Using the on-board data archival, the module increases system throughput by reducing the overhead required in collecting data.

Featuring four archiving inputs and two outputs, the Fast Analog module generates fast sample rates while decreasing backplane traffic for optimized system performance. Also, the module lengthens the time between I/O data transfers, relieving the controller of burdensome information and decreasing process disruptions.

With the increasing complexity of high-speed applications, the ability to simplify data acquisition in an integrated environment is highly beneficial. Plus, the expansive archiving capabilities of the Fast

Analog module help make sure that quality expectations are being met across the wide variety of industries that R & B serves.

The entire control system uses a single programming environment – Rockwell Software® RSLogix™ 5000 design and configuration software. Features like partial import of programs, routines and add-on instructions (AOIs) are available, so an end user can make sweeping control strategy changes without affecting production. Also, the archiving feature allows for

configuration options such as data type, tag generation, and the connection between the controller and the high-speed analog I/O module.

A broad range of Allen-Bradley industrial control products also are incorporated in the control package including relays, switches and pushbuttons. The components help provide safety monitoring, high reliability and low maintenance costs, and are widely available through the Rockwell Automation worldwide distributor network.

“Aside from meeting customer demands for the products, working with Rockwell Automation allowed us to streamline design time, reduce programming efforts, and increase flexibility for future upgrades,” said Losee. “These benefits help improve our time to market.”

The results mentioned above are specific to R & B Plastics Machinery's use of Rockwell Automation products and services in conjunction with other products. Specific results may vary for other customers.

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