

Drive & Control profile

Bosch Rexroth Washdown Pneumatics Help Evergreen Packaging Avoid Contamination, Reduce Downtime



Evergreen Packaging's bottle filler emphasizes high production in a small footprint with full CIP capability, including pneumatic washdown valves from Rexroth.

Rexroth pneumatics provide ideal solution for washdown environments while helping manufacturers increase production, improve equipment sanitation, and lower maintenance costs

Cleanliness is often considered to be a virtue. In the beverage packaging industry, however,

cleanliness is an absolute necessity. For one particular beverage and juice packaging

Challenge:

Provide washdown pneumatics for Evergreen Packaging bottle filler

Bosch Rexroth Solution:

- CL03 Clean Line washdown valves
- AS-Series air preparation system

Results:

- IP69K washdown rated valves
- Lower maintenance, improved uptime
- Sanitary design valves with smooth corners, drainable surfaces avoid build-up
- Fiberglass reinforced polyamide, stainless steel hardware resists chemicals used in the washdown process
- Eliminates need/cost for dedicated stainless steel cabinets
- Valves mounted closer to actuators reduces material costs, lowers energy consumption, improves cycle time
- All air prep functions combined in one modular/flexible package

equipment manufacturer, Bosch Rexroth pneumatics provides the ideal solution to avoid contamination, reduce downtime and maintenance costs, and ultimately, increase production.

Small Footprint, Big Performance
Evergreen Packaging (Cedar Rapids, IA www.evergreenpackaging.com) is considered to be one of the most reliable beverage packaging equipment companies in the industry, meeting demand for almost every size and speed the beverage packaging market demands. The company recently developed an economical and easy to operate gravity-fill bottle filler that utilizes washdown pneumatic valves from Bosch Rexroth (Lexington, KY www.boschrexroth-us.com/BRP). Ideal for water, juice, dairy and other still beverage products, the Evergreen BFCG-32/16 provides high production output and the versatility to handle a variety of liquid food products at a 95% or higher efficiency rate.

Using 32 fill heads and 16 capping heads, the small-footprint rotary machine takes up only 47.5 sq/ft. and can fill up to 400 bottles-per-minute (bpm). Externally demountable, no-drip fill nozzles require a minimal amount of pressure to actuate, dramatically reducing bottle wrinkling and product waste. Air consumption is 3.6 CFM at 85 psig.

The machine can handle PET, HDPE, LDPE, PP and glass bottles. With a special focus on cleanliness, Evergreen offers extended life options including HEPA, auto



Using pneumatics for washdown applications in the beverage industry is an advantage because of low maintenance costs and reduced downtime.

sanitize, and full clean-in-place (CIP) capabilities. The auto sanitize feature periodically sprays sanitizing solution on critical product contact surfaces to further protect against product contamination.

Rexroth Washdown Pneumatics Prevent Contamination, Provide Cost Advantages

In the dairy and juice industries, machines are washed down constantly to avoid contamination. Equipment is subjected not only to water, but also exposure to chemical cleaners and sodium potassium hydroxide.

Because of its minimal risk of contamination, pneumatics is a very clean technology and the first choice for food and packaging companies such as Evergreen. Pneumatic products are also able



to withstand even the toughest environments, with a longer life expectancy due to their simple design and the limited number of internal components.

To help avoid contamination and reduce downtime and maintenance costs, Evergreen specified IP69K washdown-rated CL03 pneumatic valves from



Designed with input from several leading food processors and OEMs, Rexroth's CL03 pneumatic valves are IP69K rated and can withstand high temperature 1,450 psi washdown.

Bosch Rexroth. The valves are used to control the filling process and the integrated sanitation and clean-in-place system.

In order to meet the IP69K rating, the valves have to withstand high-

temperature water with 1,450 psi pressure at a distance of four to six inches while being rotated between 0, 30, 60 and 90 degree angles.

Bosch Rexroth designed the CL03 in cooperation with leading food

and packaging end users and OEMs in both Europe and the USA. The company considered hygiene and other needs of the industry and produced a specially designed product that contains smooth corners and drainable surfaces with no aluminum materials in exposed surfaces, strong fiberglass reinforced polyamide 12, stainless steel hardware, positive joints to avoid material build-up, HNBR seals between the valve cover sub-base and sub-plates, and a host of other features.

In addition to lowering the need for maintenance, CL03 valves provide productivity, cost and energy advantages. Stainless steel cabinets to house the valves are eliminated, while the ability to mount the valves closer to the actuators minimizes the lengths of the air lines, resulting in reduced air consumption costs. Placing the valves closer to the actuators also reduces cycle time, which improves productivity.

In addition, Evergreen is using the Rexroth AS-series air-preparation system, which combines a modern clean design with high modularity and complete flexibility. Using the AS-series, Evergreen can combine all air-preparation functions in one package. With superior pressure control characteristics, the AS-Series air-preparation system ensures long-term process consistency.

Tim Hughes, director of engineering at Evergreen, says using pneumatics,



The AS-Series air-preparation system combines all air-preparation functions in one package. Its superior pressure control characteristics ensure long-term process consistency for Evergreen Packaging.

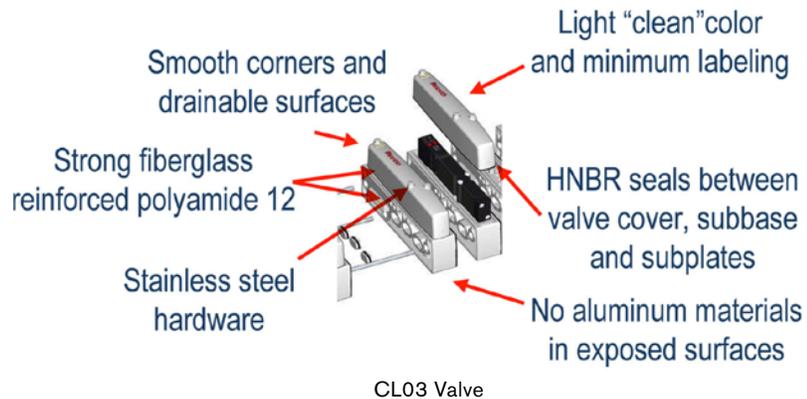
particularly for washdown and sanitary food applications, is an advantage because of the low maintenance costs and downtime associated with it.

“In the dairy and juice industry, you can’t afford to have downtime on a production line,” said Hughes. “Stores get milk shipments every day so avoiding downtime is absolutely critical. In addition, dairies survive on very low margins. If they have high maintenance costs for keeping a piece of equipment going, that comes out of the profit margin. The beauty of pneumatics is that they’re easy to troubleshoot and detect problems without downtime being an issue,” he said.

For companies such as Evergreen, Bosch Rexroth offers the ideal solution. “The beverage environment is a washdown

environment,” said Hughes. “There are a lot of valve companies in the industry that claim to have IP65 products, but our experience has been that the IP65 components really don’t work as well as the manufacturers believe they do. With the CL03 from Bosch Rexroth, the design is actually IP69K, which is extremely watertight. All the surfaces are either plastic or stainless steel, so you don’t get any corrosion from cleaning chemicals, compared to other valves that use aluminum or some lesser metals that would corrode.”

Hughes points out the importance of getting products from a company like Bosch Rexroth, which has a good reputation in the industry. “Someone can come in the door with a great valve, but if it’s a company you’ve never heard of before, that’s a risky thing to do,” he says.



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