



Winpak's latest horizontal fill and seal machine equipped with intelligent and open automation technology from Bosch Rexroth.

CASE STUDY

5 automation technologies that make an electrical machine (re)design successful

How Winpak packaging machines seal smarter, faster and more efficient with Bosch Rexroth's automation technology.

Challenge:

Electrical machine redesign for simplicity, more speed and precision, reduced energy and material waste.

Solution:

- **Servo drives enable higher throughput, safer and more cost-effective machines**
- **More panel space and simplified machine design thanks to integrated temperature controllers**
- **Safety on Board reduces downtime, scrap and waste while offering additional protection to personnel**
- **Internet of Things (IoT) connectivity provides production transparency and predictive maintenance**
- **Automated clean-in-place (CIP) process to minimize change-over and sanitation time**

Rexroth Automation Technologies:

- Multi-Axis Programmable Automation Controller, MLC with integrated Motion, Logic and temperature controllers
- Compact intelligent servo drives, IndraDrive Cs with integrated Safety on Board
- Safety PLC, SafeLogic Compact with Safety I/O
- EFC, Variable Frequency Drives with multi-Ethernet communication technology
- Permanent magnet synchronous servo motors, MSK

From yogurt to applesauce. Winpak (San Bernardino, CA, www.winpak.com) is the industry leader for vertical fill, seal and form machines as well as horizontal fill and seal machines specializing in liquid and semi-liquid products. Winpak and Bosch Rexroth have a long lasting and successful partnership that is now in its 21st year. During this time, Bosch Rexroth has helped Winpak to deliver state-of-the-art packaging machines to end-users around the world. To-date there are over 600 working machines of installed base making Winpak one of the largest suppliers of liquid packaging machinery in the world. Continuous machine improvement is part of Winpak's DNA and goes hand in hand with the latest technologies from Bosch Rexroth. The latest Winpak packaging machines save significant time, energy and packaging material while sealing more reliably and efficiently for its customers in the food and packaging industry. Thanks to an electrical machine redesign and continuous automation improvements, Winpak machines do more with less.

We spoke with Mark Griffin, Director of Sales and Marketing at Winpak, about the evolution of their machines and efficiencies gained with the help of Rexroth automation technologies.

“We started our relationship with Bosch Rexroth 21 years ago. Over the years they have helped us make our machines faster, more reliable and better money makers for our customers.”

**- Mark Griffin,
Director of Sales and Marketing
Winpak**



Rexroth offers IndraDrive Cs servo drives for higher throughput, safer and more cost-effective machine operations

1. Servo drives boost productivity

After the success of Winpak's first servo-driven machine offering, the WP32 platform, they quickly expanded Rexroth servo controls and drives to their full offering of vertical form, fill, seal and horizontal fill and seal machines. "Adding Rexroth's servo drives - IndraDrive Cs, together with their MLC Programmable Automation Controller into all of our other equipment enabled higher throughput and made our machines safer and more cost-effective, compared to large mechanically driven sub-assemblies," says Mark Griffin. Furthermore, adding servo technology to the machinery allowed Winpak to introduce clean-in-place technology (CIP) which has dramatically improved food safety and ergonomic safety in their customer's facilities.

2. Clean-in-place (CIP) technology reduces repair time

CIP technology combined with Rexroth controls allow Winpak machines to become an integrated part of the customer's process to do an automated CIP without the need to disassemble any of the machine components. With CIP technology, operators do not need to get on the top of the machine to clean it manually.

3. More panel space and simplified machine design thanks to integrated temperature controllers

There was a time when Winpak's machines had three separate processors in order to control the machine. Motion controller, a temperature controller and PLC for CIP mode and other tasks. The advancement of Bosch Rexroth controls have allowed Winpak to take cost out of the machine and simplify the machine design bringing fully integrated temperature controllers on board without affecting the critical operating speeds of up to 130 cycles per minute.



21 years of successful partnership: Ilya Boym, Bosch Rexroth (left) and Mark Griffin, Winpak, in front of Winpak's latest horizontal fill and

“We were able to free up panel space, take cost out of the machine as well as give our customers the most robust temperature controls.”

- **Mark Griffin,**
Director of Sales and Marketing
Winpak



Rexroth SafeLogic Compact reduces downtime, scrap and waste



seal machine equipped with intelligent and open automation technology from Bosch Rexroth.

4. Safety on Board reduces downtime, scrap and waste

As safety codes changed in Europe and North America, Winpak had to change control platforms. While adding safety, the challenge was to not impact the operating sequences with the machine. Using Rexroth servo drives with SafeMotion on Board drastically improved the overall machine efficiency. A dedicated Safety PLC from Bosch Rexroth, SafeLogic Compact SLC with Safety I/O monitors all safety signals and channels assuring the ultimate safety to machine operators and maintenance personnel. The machine operator or maintenance personnel no longer need to disconnect Mains voltage once the machine is in the SafeMotion mode while making minor changes. “The machine can be put back into operation without having to synchronize all the axis together, reducing downtime, product scrap and waste”, Mark Griffin.

5. IoT connectivity brings transparency

Winpak understands the value of connecting their machinery and using real-time data to improve machine availability. “Our customers are asking for machine availability, downtime monitoring, predictive maintenance and smart machine monitoring. We are working with Rexroth on initiatives like these to make our platforms more user-friendly and machines that are capable of much greater uptimes. With the help of predictive maintenance and downtime tracking our machine’s operations become smarter and more intuitive”, says Griffin.



(6.) Not a technology, but just as important: 24/7 Rexroth support and service make Winpak's operations more efficient

As a global manufacturer of packaging machinery, it is imperative for Winpak to have support on as many levels as possible - in the U.S. and worldwide. Thanks to Bosch Rexroth's U.S. distribution network, especially their local distributor Valin (San Jose, CA, www.valin.com), and Rexroth's global support network, Winpak can rely on 24/7 inventory and technical support.



- A. A look in the machine cabinet shows Rexroth automation technology including Safety PLC SafeLogic Compact, servo drives IndraDrive Cs and Multi-Axis Programmable Automation Controllers, MLC.
- B. Rexroth's permanent magnet synchronous servo motor MSK.

“As we moved from simple mechanical machines to electronic-driven machines, **Bosch Rexroth on-site training and training at their technical facility in Hoffman Estates, IL,** was key in helping our customers understand how to troubleshoot and potentially modify code locally. **It gives our service technicians piece of mind every day knowing that they can get ahold of someone, some place in the world that can help them 24/7 if they need integration or troubleshooting support**”, says Griffin.


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