

Drive & Control profile

Rexroth IndraDrive Mi Helps Reduce Footprint, Add Flexibility for Goodman Packaging Equipment's Robotic Case Packer



Rexroth's integrated motors and drives are easy to connect without a lot of wiring, and leave room to add more as needed.

Goodman Packaging Equipment uses Rexroth integrated servo motor/drive to increase versatility for new compact robotic packaging machine

It's been said that great things often come in small packages. With [Goodman Packaging Equipment's](#) new Mini-Universal Case Packer, perhaps it should be said that great packaging comes from a small machine.

Goodman Packaging Equipment (Waukegan, IL — www.goodmanpkg.com) offers a

complete line of case packing machinery that handles a broad range of products providing the ability to pack almost any bag, carton, tub, or flexible package in almost any configuration.

The company recently expanded its portfolio of packaging equipment with the new Mini-Universal Case Packer, a smaller,

Challenge

Reduce footprint, add flexibility, improve integration for robotic top-load casepacker

Bosch Rexroth Solution

IndraDrive Mi integrated servo motor/intelligent drive system

Results:

- Integrated motor/drive reduces size volume up to 50 percent vs. traditional servo motor and drive system
- Motor/drive units located at each axis outside control cabinet
- Control cabinet space reduced by 33 percent
- Machine footprint reduced by approximately 40 percent
- Innovative cabling design expected to reduce wiring by 50 percent
- Single cable can daisy chain up to 20 integrated motor/drive units
- Flexibility to add more servos as needed

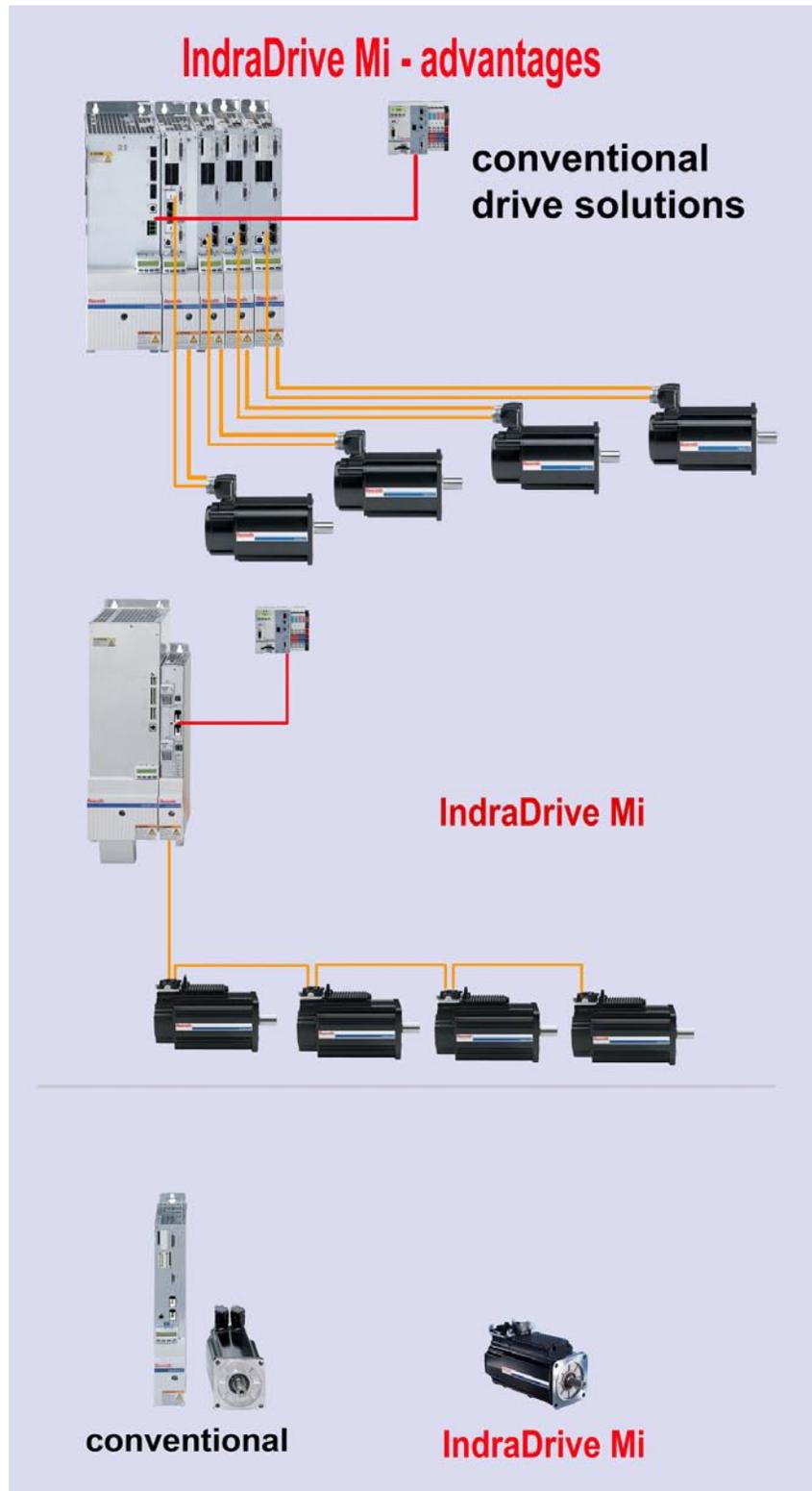
more flexible version of its popular sister machine, the Universal™ pick and place robot. To meet its design goals for a smaller footprint with increased flexibility and more advanced integration capabilities, Goodman Packaging specified the **IndraDrive Mi** integrated servo motor/drive platform from **Bosch Rexroth** (Hoffman Estates, IL—www.boschrexroth-us.com).

Quick Changeover, More Packaging Patterns

The four-axis Mini-Universal Case Packer is a top-load case packer that offers modularity, quick changeover and unlimited pack pattern capabilities. It was custom-designed to package tubs of moist towelettes for Playtex, but has the flexibility to handle other products including frozen foods, cheese, candy, and pouches. The machine can pack more than 120 packages per minute.

The plastic tubs of towelettes move down a conveyor and are swept into one of two patterns or configurations containing four tubs. The entire configuration is picked up by a pick-and-place robot and loaded into a regular slotted carton. Goodman Packaging's patented multi-axis technology, driven by the Rexroth integrated motor/intelligent drive system, provides the flexibility to create patterns according to customer specifications.

“Depending on what the line speed requirements are, we can pack one, two, or even more cases at a time,” said Billy Goodman, President, Goodman Packaging Equipment.



“We can customize our machine to the line requirements for a wide variety of products.” He said the

Mini-Universal offers complete flexibility where patterns can be created with a simple selection on

a touch screen. Product changeover occurs in less than two minutes.

Goodman said the key to case packing is product handling and product presentation to the packing device. “The earlier Universal model utilized lifters to present packages to the pick and place. But now, because of Rexroth’s servo technology, we can utilize a multitude of layer-forming conveyors, including a dual-axis line and two individual accumulation belts with the ability to do product sweeps prior to reaching the packer, which allows us to vary the product presentation as needed,” he explained.



Goodman Packaging Equipment used Rexroth's IndraDrive Mi integrated servo motor/drive platform for a smaller footprint with increased flexibility and more advanced integration capabilities.

**Integrated Motor/Drive:
Less Wiring, More Flexibility,
Smaller Footprint**

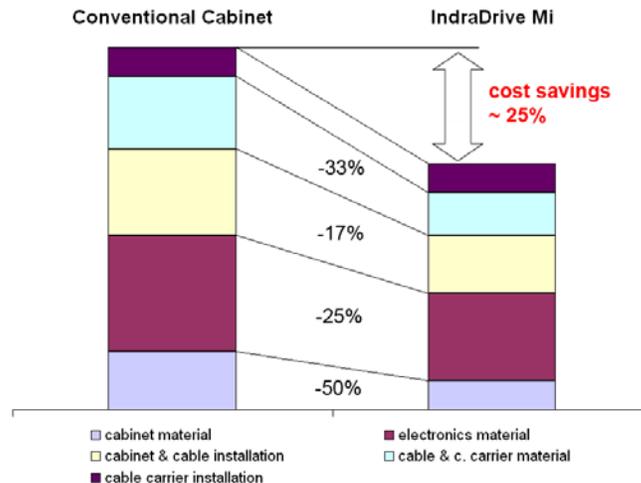
When Goodman Packaging began designing the Mini-Universal, they had two goals: One goal was to standardize the machine but retain the ability for custom applications. The other goal was to reduce machine size but still perform like the original Universal. Rexroth’s [IndraDrive Mi](#) integrated servo motor and intelligent digital drive system helped them achieve both.

IndraDrive Mi, Goodman said they reduced panel space by 33 percent and overall machine footprint by approximately 40 percent, down to a compact 75 x 54-inch frame size.

Another feature that attracted Goodman Packaging to the IndraDrive Mi was its innovative cabling design, which significantly reduces the need for cable connections. Integrating the

motors and drives into single units placed directly at each axis outside the control cabinet allows the use of just one power and communications cable daisy chained from the control cabinet to each axis. This makes the integrated motors and drives easy to connect without a lot of wiring and leaves room to add more as needed. Up to 20 integrated units can be connected with

The IndraDrive Mi combines a traditional servo motor and drive amplifier into a single compact but highly functional drive unit. This unique design reduces the size volume by up to 50 percent compared to traditional servo systems that use a separate motor and drive. As a result, this drastically reduces the size of the control cabinet and the overall machine footprint. With the



a single daisy chain. With the IndraDrive Mi, Goodman said, they expect to realize a 50 percent reduction in wiring.

He added that the IndraDrive Mi opened the door for Goodman Packaging to use the Mini-Universal as a base to integrate with other conveyors and to add auxiliary access using the same control technology.

“The IndraDrive Mi allows us to add functionality and flexibility that we could not achieve with traditional servos,” he said. “Instead of being relegated to packaging lines that don’t have a lot of integration, the Mini-Universal can be used as a core machine to integrate other devices and packaging equipment around it,” said Goodman. “Our goal was to make it compact to save line space and reduce our carbon footprint,” he said. “Because of the reduced panel size and footprint, we can add more motion control and flexibility. We can do things with our equipment that we couldn’t do before, such as size reduction. The Mi provides us with a great opportunity for future designs in all of our products.”



The IndraDrive Mi combines a traditional servo motor and drive amplifier into a single compact but highly functional drive unit.

Goodman added that Bosch Rexroth has been a long-valued supplier to Goodman Packaging Equipment for more than 15 years. “Without the help of Bosch Rexroth, it would have been difficult to meet the needs of Playtex,” he said. “Our customers drive us to build in functionality like we did with the Mini-Universal. Bosch Rexroth provided us with a valuable tool to add more flexibility without having to re-engineer,” said Goodman.

Rexroth
Bosch Group