

MATERIAL HANDLING INTEGRATION CASE STUDY

Following the Success of Custom Assembly Tables, BHS Inc. Returns with Packing Solutions

How BHS partnered with one of its dealers Carolina Handling and end-user Connector Manufacturing to provide custom material handling solutions that not only eliminated unsafe manual material handling but also eliminated bottlenecks in the packaging process.

As detailed in our Case Study titled “BHS, Inc. Improves Manufacturing Efficiency with Assembly Work Stations,” the partnership between BHS, forklift dealer Carolina Handling, and end-user Connector Manufacturing had already established the value of BHS material handling integration services.

All three stakeholders were pleased with the results of their previous collaboration. That made it an easy decision to reassemble the team when Connector Manufacturing described a second material handling challenge, this one in the shipping room.

This project would involve special challenges. Engineers at BHS would not be able to simply supply a product of their own design; the task would require integrating multiple machines from multiple manufacturers into a comprehensive, productivity-boosting system.

That system would become a new system called The CMC Packing Solution.

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THE PROBLEM

Packaging Line Inefficiencies

For some time, the team at Connector Manufacturing had been less than pleased with their packaging system. Hand-boxing orders slowed down production, and the material handling systems weren’t as ergonomically designed as they could have been.

Camp Jennings, Sales Manager at forklift dealer Carolina Handling, worked on the Connector Manufacturing account. He realized that BHS’ unique skillset in custom design and integration could be the key to improving packaging for the client. After all, they had just concluded a successful BHS project that vastly improved their assembly process.

“Everything went so great with the Assembly Work Station, that they wanted to roll out this packaging line,” said Trent Boothe, Senior Manager of Engineered Systems at BHS, Inc. “They thought of BHS. Now, the dealer that’s involved is the forklift dealer, and he’s offering solutions and he knows that we do custom material handling.”

Jennings discussed the need for greater efficiency in the client’s packaging stations with BHS, Inc. While he had ideas, though, the BHS team would also work with assorted other manufacturers to create an all-in-one, integrated solution.

EXPERT ANALYSIS FROM BHS

Typically, manufacturers only design with their own equipment. In this case, Carolina Handling already knew it wanted case forming machinery from another vendor. The challenge then became finding a way to integrate multiple machines from multiple manufacturers into a single, highly efficient packaging line.

There are no rules for a collaboration like this, so leadership roles fell to those who would take them. Boothe led the design team at BHS as they offered to integrate the equipment into a final design, and the other stakeholders agreed.

The final product would have to measure out orders, place them into cardboard boxes, and seal the boxes for delivery. Some of the equipment would come from BHS, but the case former, case sealer, and labeler in the line were from other manufacturers.

“We kind of realized that most vendors are just concerned with their own parts. And no one was really grouping this all together,” Boothe said. “So what we were able to do was get their drawings and some of their specifications and put all this into one drawing, and show how it was integrated.”

THE SOLUTION

The CMC Packing Solution

The result of this integration collaboration is a turnkey packaging system, dubbed the CMC Packing Solution. The system positions multiple machines along a horseshoe-shaped roller conveyor, limiting the overall footprint.

The case former feeds a constructed box onto a Lift Table. A second Lift & Tilt Table with a chute feeds product into the box. A scale on the first Lift Table ensures accurate piece counts. Boothe explains the system from there:

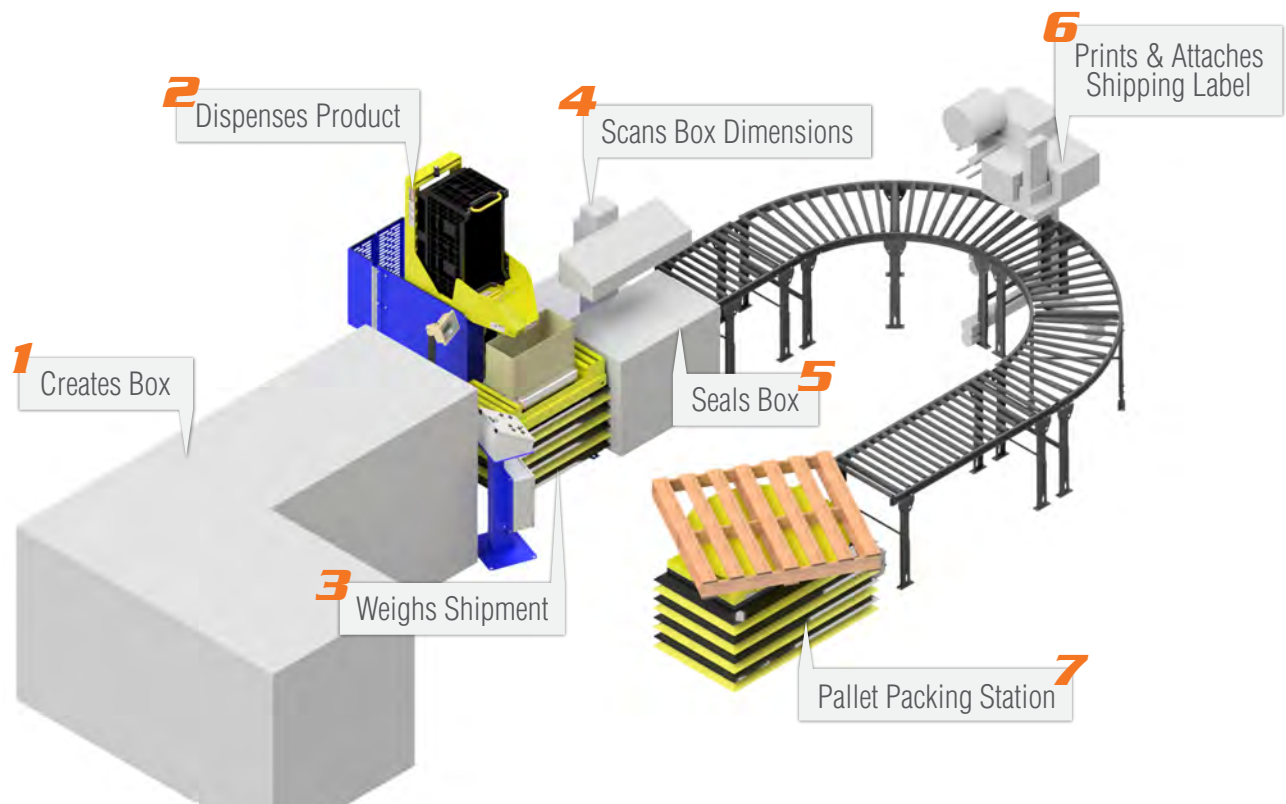


So once the order was verified, you would push the box onto rollers, and then it would go into what they call the case sealer, which would tape the top of the box. Then it's off to more conveyor belt that would pass into the final machine, which was the labeler. That machine sticks a pre-printed label onto the side of the order. And finally, at the end of the conveyor, was another one of our lift tables that held a pallet and rotated it. An operator could sit there and stack the boxes onto that table top, and of course it's a Lift Table, so it'd raise and lower and spin to make it nice and ergonomic.

A control unit allows a single staff person to operate the system, although multiple employees can be stationed at the Packing Solution during production peaks.

The packing line was very much a collaboration, featuring products from multiple manufacturers, as well as participation from the dealer and the end-user. The BHS products included were a modified Lift & Tilt Table, a Lift Table with a scale, and a Lift Table with a Turntable (the Lift Table Boothe refers to in his description). But perhaps the most significant innovation in the development of this solution was a service, not a product: Material handling integration and design.

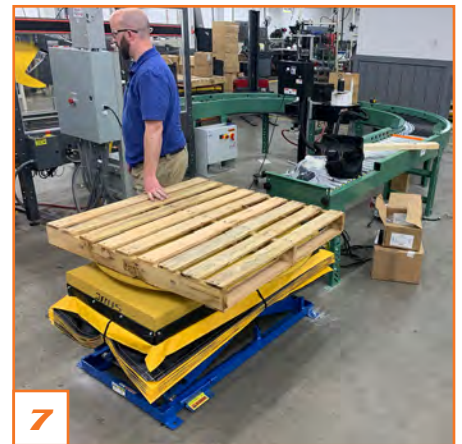
The CMC Packing Solution



A combination Lift & Tilt Table, with a built-in chute for dispensing product, sits behind another lift table where the product is weighed.



This Lift Table incorporates a scale within the tabletop for measuring the weight of the shipment.



A third Lift Table at the end of the packaging line has a 360° turntable for ergonomic pallet building.

IMPLEMENTATION OF THE CMC PACKING SOLUTION

Given the multi-party collaboration that led to the creation of the CMC Packing Station, this project moved differently than the standard BHS solution. This is illustrative of the flexibility BHS offers on custom orders.

“Everyone would flow toward the end goal,” Boothe said. “But the planning took place over several conference calls.”

Like most projects, this one began in a conversation between the dealer and the end-user. After Jennings evaluated the client’s needs, he contacted BHS, Inc., who placed the project under Boothe’s leadership.

As project manager, Boothe was the point-of-contact between other stakeholders, the dealer, the end-user, and the BHS engineering team.

“I worked with our industrial engineers,” Boothe said. “We worked out some basic ideas and basic pricing upfront, and after that, it was still good to go. So we started integrating the drawing, showing how all the different pieces work together.”

Frequent communication between the dealer, the end user, and Boothe led to an accepted product design. After that, the parties manufactured and shipped their pieces to the plant, and Boothe led the installation effort. In fact, Boothe and a BHS installation expert installed the system themselves.

“This one was one of our first big integrative projects, and I knew it really well, so I went out for this one,” Boothe said.

RESULTS OF INSTALLING THE CMC PACKING SOLUTION

The first CMC Packing Solution was installed at the Connector Manufacturing plant in April 2019. In the months that followed, staff and management alike appreciate the elimination of bottlenecks at the packaging phase. They also value the removal of manual material handling, and the attendant boost in overall plant safety.

The stakeholders couldn't have reached their goals without the material handling integration services provided by BHS, Inc. — though this role wasn't planned from the first stages. Rather, it grew out of the customization and engineering services that BHS, Inc. has offered customers for decades.

“We found out we were kind of the leaders in putting out different dates, and everyone started flowing behind us,” Boothe said. “And we were the main ones showing all of the drawings and having everyone else's specs involved, and really working as an integrator.”



INTERESTED IN WORKING WITH BHS?

Contact sales@bhs1.com or [1.800.BHS.9500](tel:1800BHS9500) to discuss your opportunity.



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