

Baldor Products Featured



*on Flexco State-of-the-Art
Test Rig*



In late summer of 2011, Flexco, a Downers Grove, Illinois-based manufacturer of products that enhance belt conveyor productivity, began running a new custom-made test rig built to accelerate the design and testing of new products. Founded in 1907, Flexco manufactures a wide array of products, including mechanical belt fastening systems, trackers, cleaners, plows, rollers and lagging.

Flexco's diversified offering, combined with increased belt tensions and the continuing evolution of belt construction, prompted the company to invest in the new test rig. Greg Westphall, the director of engineering at Flexco, calls it a one-of-a-kind machine

designed to ensure that Flexco products continue to undergo rigorous in-house testing before being placed in the field.

Westphall says the 120,000-lb. capacity test rig is running successfully, thanks in part to the quality of Baldor products and the expertise of Baldor engineers who offered a complete solution with specific products.

"We make conveyor belt fasteners, so we don't have experience specifying motors, drives, gearboxes, bearings and pulleys," says Westphall. "Selecting these components is somewhat foreign to our engineers. So, our decision to choose Baldor as our partner was based not only on the strong Baldor brand

name, but also the added technical value that Baldor is able to provide."

Flexco Mechanical Engineer Dan Dailey says the first line of project support came from Baldor's Dodge® Field Sales Engineer Nick Roseto, who not only helped with installation and mounting questions, but was also the link to all of the other Baldor engineers who worked on the design and product selection.

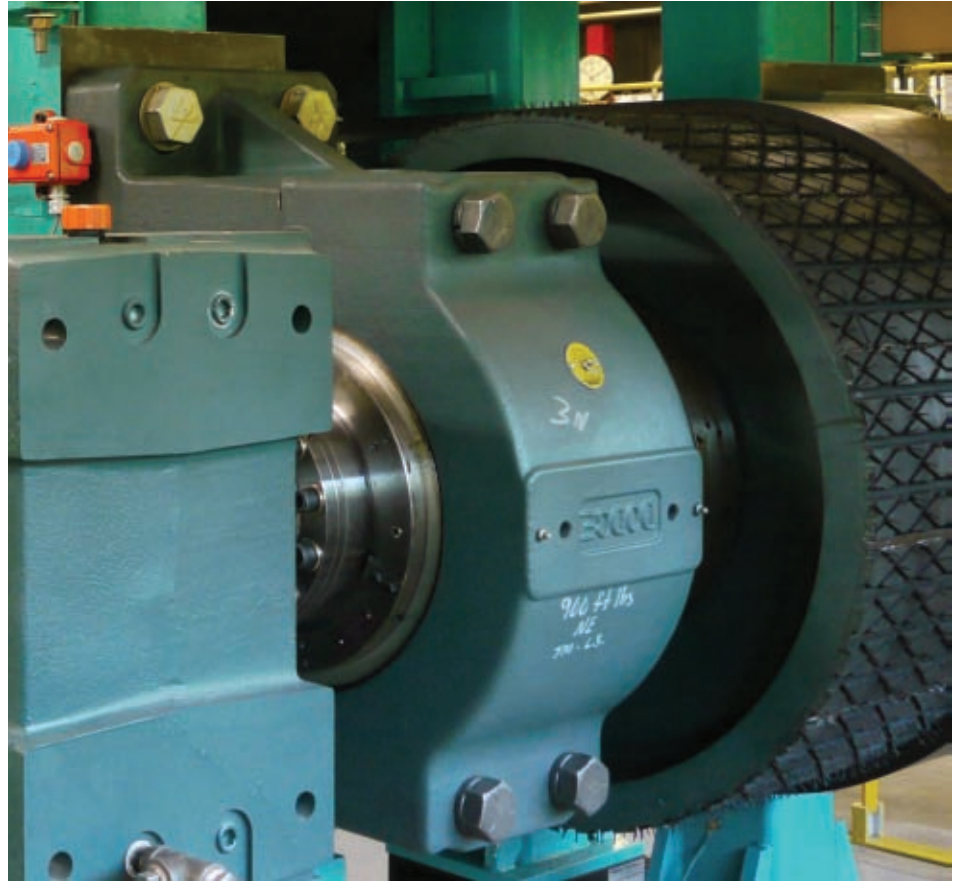
"Nick was more than just a sales guy; he had technical knowledge and stayed with us through the entire project," says Dailey. "When I had a question or needed something, he is who I turned to for help. Nick was a valuable asset, because he consistently answered my



Flexco's new 120,000-lb.-capacity test rig measures 24 feet high and 12 feet wide and weighs approximately 60,000 lbs. Baldor engineers worked with the Flexco engineering team to ensure the optimal horsepower of the Baldor•Reliance® Super-E® motor and the Baldor•Dodge® MagnaGear™ reducer. Baldor engineers also specified the Baldor•Dodge Hydraulic ISAF bearing and the design and specification of the six engineered pulleys used on the test rig.

“Our decision to choose Baldor as our partner was based not only on the strong Baldor brand name, but also the added technical value that Baldor is able to provide.”

Greg Westphall,
director of engineering,
Flexco



Because Flexco engineers want the flexibility to make pulley changes, they asked for a bearing they could get on and off the shaft easily, with no damage. Baldor recommended the Dodge Hydraulic ISAF pillow block bearing, with built-in hydraulic pistons that tighten and loosen the bearing for easy installation and removal. The patented adapter mounting system provides full shaft contact that reduces or eliminates fretting corrosion.



questions, plus coordinated the efforts from others on the Baldor team.”

Some of the Baldor engineering effort was focused on developing the correct pulley specifications for such a unique

application. Westphall explained that unlike a conventional bulk material conveyor in which only the drive or head pulley sees maximum tension and the belt width is fixed, all six pulleys see maximum tension on the Flexco

Flexco will use belts from 10 to 36 inches wide on the new test rig, which concentrates the load in the center of the pulley, causing a great deal of stress. Flexco relied on Baldor engineers to design all six pulleys to handle maximum tension and the extreme loads.



Data acquisition, including tracking motor speed, is critical to Flexco engineers, who specified an encoder be added to the Baldor•Reliance Super-E motor.

rig, and belt width will vary from 10 to 36 inches, making it a very demanding application.

“The Baldor conveyor expert working on this project understood the challenge of running different belt widths on this test rig,” says Westphall. “Concentrating the load in the center of the pulley adds a great deal of stress, so we needed a pulley engineered to withstand extreme loads. We relied on Baldor to design and manufacture the pulleys we needed based on our specifications.”

Baldor engineers also worked with the Flexco engineering team to ensure the optimal horsepower of the Baldor•Reliance Super-E motor and the Baldor•Dodge MagnaGear reducer for the test rig. But Westphall says he and his team are perhaps most grateful for the help selecting the right bearing. In

the past, bearing removal was not only difficult but often caused damage.

“Again, unlike a typical conveyor application, we want the flexibility to make pulley changes, which means we want a bearing that comes off the shaft without damaging anything,” explains Westphall. “We want to re-use the bearing time and time again, and when Baldor recommended the Hydraulic ISAF bearing, we were very interested. We believe this product meets our needs and are confident we have found the solution.”

When Flexco engineers began this project, they, with the full support of the company’s board of directors, were determined not to sacrifice quality or settle for second best. Today, they say they are proud to have Baldor equipment on their rig, and Flexco



Flexco engineers say that using a variable frequency drive is critical to not only jog the conveyor forward and backward, as well as control the speed very precisely.

Product Development Engineer Joe Immordino credits Baldor engineers for helping make sure they got the right equipment for this unique application.

“Because it’s the only rig of its kind, we needed a company that had the experience to help us achieve a very high level of performance,” says Immordino. “Because it’s a test unit, it has to have much tighter tolerance than a typical conveying system – we need a high level of precision and reliability, and it has to last 30-plus years. We got the technical expertise from Baldor engineers to help us accomplish all these goals.”