

An aerial photograph of a large-scale mining operation. In the foreground and middle ground, a complex network of conveyor belts, supported by metal structures, transports material across the site. There are large piles of gravel and sand. In the background, a steep, rocky hillside is visible, partially covered with sparse vegetation. Beyond the mining area, a dense forest of evergreen trees covers rolling hills under a blue sky with scattered clouds. The text "Built to Last..." is overlaid in a large, bold, white font with a red outline, positioned in the upper half of the image.

**Built
to Last...**



ALBERT FREI & SONS CHOOSE BALDOR PRODUCTS FOR CRUSHING PLANT EXPANSION

When they were young, the Frei children often went to work with their dad and got to play in what Albert Frei, Jr., describes as a very large sandbox. Growing up, he always knew he would work in the family business, and even as a young man, started dreaming of ways to expand and grow their quarry operation.

Grateful for what their grandfather and father had done to build this family business, the Frei children and senior management, led by Al, Jr., wanted to build something that they could pass on to the next generation. By carefully choosing products and creating new partnerships, the dream became a reality in August 2010, when the quarry started producing rock in its brand new, state-of-the-art, multimillion-dollar crushing plant.



With Albert Frei's desire to build a plant that will last for the next 60 to 70 years, he wasn't looking to buy the cheapest products. Instead, he wanted products with proven performance and dependability. For Frei, that meant choosing Baldor•Dodge® mechanical products and Baldor•Reliance® motors.

In 1982, the family opened their Walstrum facility, a large-capacity granite quarry. With more than 1,800 acres, the quarry has at least another 100 years of use. However, because the quarry is nestled in a narrow canyon on the Front Range of the Rocky Mountains 50 miles west of Denver, the existing facility had outgrown the space.

"Our biggest handicap is real estate, which means we can only produce the amount we can take out in trucks," says Albert Frei, Jr., president, Albert Frei & Sons. "We don't have the luxury of space to stockpile material, so during our peak season, we struggle to keep up with customer demand. It's been a real balancing act."

With no more room to grow "out," Frei realized they would have to grow by building "up." With all sorts of design ideas in his head, he decided in early 2009 to hire engineering firm MA



The unique design of the new crushing plant allows the Walstrum quarry to produce four different products at the same time, and offers the flexibility to produce a total of 12 different products.



Albert Frei worked with a team of experts from Baldor that not only reviewed all the drawings and specifications, but also helped him select the right products. Frei said it was very comforting getting help from experts who understand his industry.

Bielski & Associates to help him get all those ideas down on paper.

The result is something unique in the industry: an 11-story steel structure that's actually three plants in one. Seemingly endless conveyors bring in material, where it's crushed, screened, diverted, and when it's the right size, loaded out.

"With this design, we have the ability to make four different products at the

same time," explains Frei. "And with a touch of a button, we can change the type of product. Now we have the flexibility to easily make 12 different products, which is going to allow us to give the customers exactly what they want, with costs that will be more than competitive."

With his desire to build a plant that will last for the next 60 to 70 years, Frei wasn't looking to buy the cheapest products; instead, he wanted

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Albert Frei, Jr., president,
Albert Frei & Sons

products with proven performance and dependability. And since he had a wealth of experience with Baldor•Dodge Torque-Arm™ gearing, the choice for all the mechanical products was clear.

"In my world, Baldor•Dodge products are the best of the best," exclaims Frei. "All the products are built tough, and you can get everything you need, from gearing to bearings, to the heavy-duty pulleys. These were exactly the products I wanted, but my fear was I wouldn't be able to afford what I see as the top of the line."

Those fears were quickly put to rest when Frei began working closely with Baldor's System-1™ group, a team that facilitates the design, quotation and order processing of multiple power transmission and electrical products into a complete packaged solution.

"By working with Baldor's System-1 group and getting them to do this as a complete package, it really helped me with the cost," explains Frei. "I was so pleased that I was able to get exactly the products I wanted. But more importantly, because of their design expertise, the System-1 group also helped me select the right equipment, plus they worked closely with my engineer and conveyor manufacturer to make sure that we had no issues at installation or start-up."



The three Baldor•Reliance 500 HP motors on the Metso crushers were designed by Baldor to be a more energy efficient NEMA Design C torque curve motor. According to Albert Frei, Baldor was the only motor manufacturer willing to help him with an energy efficient design so he could qualify for energy rebates being offered by his local utility.



Originally, Albert Frei selected standard efficient motors for the project, but when Baldor talked with him about the energy rebate program offered by the local energy provider, he was thrilled with the opportunity to upgrade and install Baldor•Reliance severe duty premium efficient motors.

Frei received additional design assistance from Baldor's aggregate Industry Solutions team, a group dedicated to working directly with aggregate producers. He also had the support of the local Baldor•Dodge field sales engineer, who Frei says not only spent a lot of time on-site, but was always available to answer any of his questions. With all of this help and support, Frei says he was confident the project would be a success.

"Everyone I worked with from Baldor knew what they were doing in this industry, and they understood what I needed," comments Frei. "They looked over all the drawings and specifications, making sure I was doing everything I needed to do. It was very comforting getting this kind of help from experts who work in this field every day."



With one touch of a button, quarry operator Tommy Frei can change the type of product being produced at the plant.



Albert Frei wanted to install motors that were going to last a long time. That's why he chose Baldor•Reliance motors, which he says are heavy-duty and well built. These 50 HP motors with a NEMA Design C torque curve were designed by Baldor engineers to be more energy efficient than standard Design C motors on the market.

"This project's success is due in large part to the Baldor team that helped me every step of the way. If I had to do it all over again, I wouldn't hesitate, and I wouldn't change a thing."

Albert Frei, Jr., president, Albert Frei & Sons

When it came to choosing motors, Frei maintained his philosophy of installing the best product available, and that meant choosing USA-manufactured Baldor•Reliance motors for the reducer packages powering all of the conveyors. Originally, he selected a standard efficient motor, but when Baldor talked with him about the energy rebate program offered by the local energy provider, Xcel® Energy Colorado, he was thrilled with the opportunity to upgrade his motor choice.

"The willingness of Baldor to help me understand the rebate program and how to use all the right codes made it possible for me to install NEMA Premium® motors throughout the plant," says Frei. "I wanted motors that were going to last a long time, and that's what I've got with these Baldor•Reliance severe duty premium efficient motors. These motors are heavy-duty and well built. Not only do I get the energy rebate, which offsets the cost of the more efficient motor, I will



By selecting the Torque-Arm II gearbox, Albert Frei says he was able to downsize and save money, while still getting the power needed for the application.



Both the Baldor•Dodge Mine Duty Extra wing pulleys (lower) and Mine Duty Extra drum pulleys (upper) use a thick, integral, one-piece hub design, eliminating the hub to end-disc weld, which is the most common failure point on a conveyor pulley. Albert Frei calls these pulleys rugged and tough.

also enjoy the energy savings for the life of the motor.”

The partnership between Frei and the Baldor team continued to strengthen as he looked at motor selection for two specific applications in the plant: 500 HP motors for each of the three Metso

crushers, and the six 50 HP motors on the three Deister Quad deck screens. Both of these applications require motors designed with a NEMA Design C torque curve, which provides a higher starting torque for high inertia loads. These are standard efficient motors, but with rebate money on the table,

Frei wanted to find a way to get a more efficient product.

“Baldor was the only motor manufacturer willing to help me with getting a more efficient Design C motor so I could qualify for energy rebates,” says Frei. “Baldor engineers modified the electrical design of the motor to improve the efficiency, and while it’s not NEMA Premium, it’s still the most efficient Design C motor available. Baldor made it possible for me to get a portion of the rebate, which adds up to thousands of dollars – plus the energy savings I’ll get over the life of these 500 HP motors is going to be huge.”

The energy savings story will continue as Frei plans to replace all the existing motors in the quarry with Baldor•Reliance premium efficient designs. He says the task will be made much easier because the local Baldor district office, Rocky Mountain-Baldor located in Denver, stocks all the motors so they’ll always be on hand when he needs them.

Frei’s grandfather started the company in a gravel pit with a small cone crusher and a 5’ by 10’ screen deck. Albert Frei, Sr., built on his dad’s success and handed a thriving business over to his son. Frei, Jr., believes he and his brothers have carried on the family legacy by building something that can be passed on to the next generation. It’s an investment Frei believes will pay off.

“I designed this plant to last,” says Frei. “That’s how I built it, and that’s how I chose the products to put in it. My dream became a vision, and my vision is now reality. This project’s success is due in large part to the Baldor team that helped me every step of the way. If I had to do it all over again, I wouldn’t hesitate, and I wouldn’t change a thing.”