

RUGGED AND RELIABLE

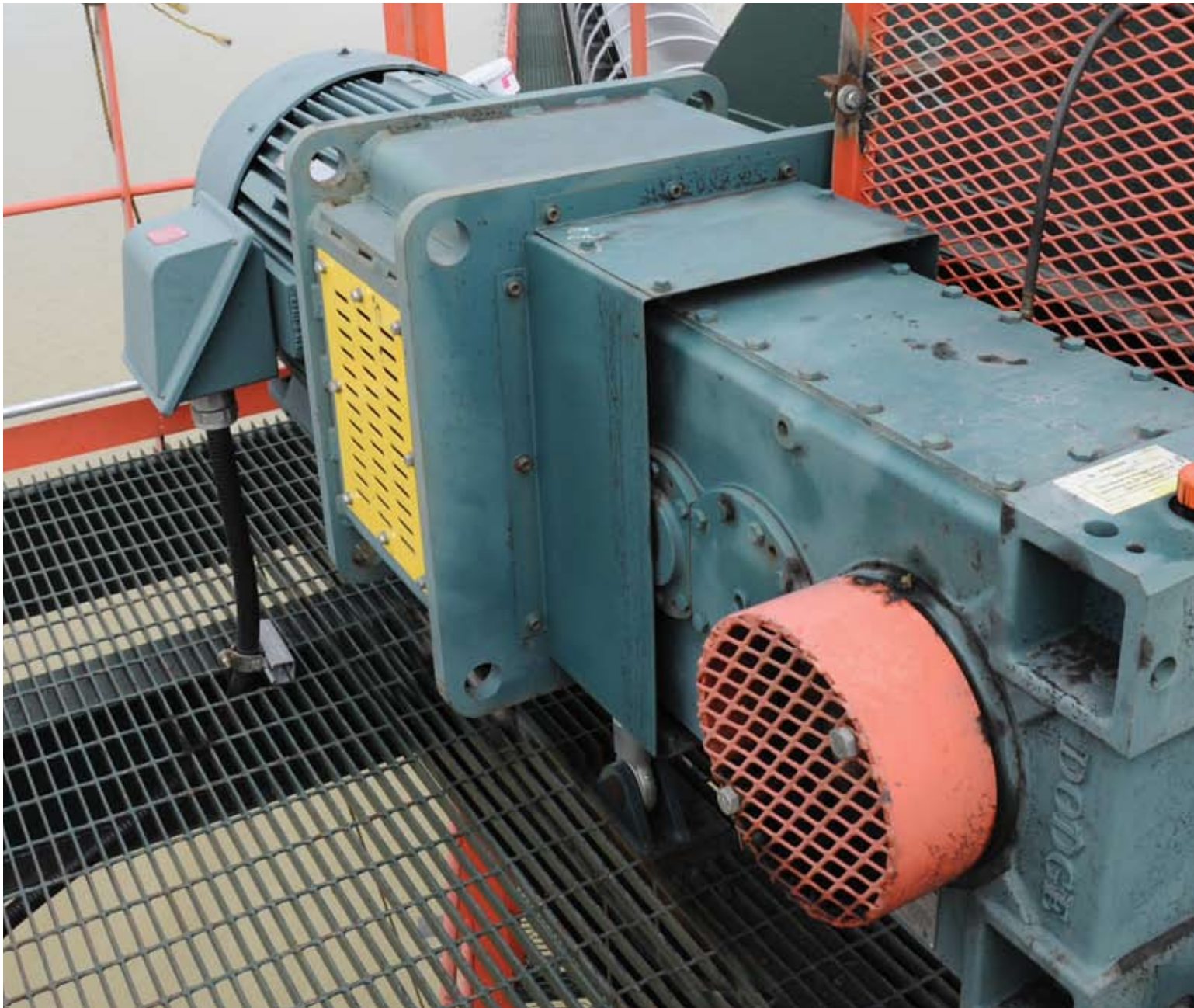


**OVERLAND CONVEYING SYSTEMS
WANTED A RUGGED AND RELIABLE REDUCER
FOR ARMSTRONG COAL PROJECT...**

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...and Found Everything It Needed
in the Baldor•Dodge® MagnaGear XTR™



Overland Conveying Systems used a total of 10 Baldor•Dodge MagnaGear XTR reducers throughout the Armstrong Coal project. The OEM chose the heavy-duty reducer because of its reliable, compact, power-dense design. Each reducer is connected to a Baldor•Reliance® Mining Industry motor with a Baldor•Dodge GRID-LIGN™ coupling (located behind the yellow safety cover).

Overland Conveying Systems, based in Madisonville, Kentucky, has been in business a little over 10 years, designing and building conveyor systems primarily for the coal industry. One of its key customers is Armstrong Coal, a company that controls approximately 415 million tons of proven coal reserves in Western Kentucky, and a leading producer of steam coal in the Illinois Basin.

In late 2008, Overland Conveying Systems won the business to do the conveyor work for Armstrong's newest mine site, the Equality Boot Mine, located approximately eight miles from the company's prep plant. Trucking coal over county roads was not an option, and when Armstrong learned it could not convey the coal overland, its only option was to transport the coal by barge on Kentucky's Green River. The project

involved thousands of feet of conveyors down to the river for load-out, plus a new system to off-load the coal from the Armstrong dock up to the prep plant.

At the mine site, David Daniel, Overland Conveying Systems chief engineer, had the challenge of building a nearly 4,000-foot-long conveyor high enough off the ground to evade the annual river flood. The only way



The universal housing with the reversible mounting design of the MagnaGear reducer is another reason why Overland Conveying Systems chose the Baldor•Dodge product. This design provides the option of right- hand or left-hand mounting, offering the customer flexibility and minimizing spares. The OEM says other products don't offer this same kind of flexibility.

to reach key equipment during a flood would be to walk a narrow catwalk 20 feet off the ground all the way from the mine to barge load-out. What Daniel wanted for this project was a reliable gearbox that wouldn't require a lot of attention, small enough to fit in a confined space, but powerful enough to do the job.

As luck would have it, about the time Daniel started the project, Baldor introduced the full line of MagnaGear

XTR high horsepower speed reducers; a compact, power-dense design in a heavy-duty package. Based on his experience with other Baldor•Dodge gearboxes, Daniel says he was eager to see the new gear reducer and get more details.

"I have used the company's Torque-Arm™ reducer for years on many projects with a lot of success," says Daniel. "This product sets the standard in our industry because they do the job, they are user-friendly, and they last a long, long time. With a reputation like

that, it was not a stretch for us to take a serious look at a new gearing product because we naturally expected it to be just as good."

Convinced that the MagnaGear was the right product, Daniel says he worked out all the designs and product specifications to present to company officials at Armstrong Coal for final approval. His plan included a total of 10 Baldor•Dodge MagnaGear reducers, coupled to Baldor•Reliance Mining Industry motors. Despite the newness of the product, Daniel says Armstrong



Overland Conveying Systems chose the MagnaGear XTR reducer because it offers more torque out of a smaller package. The compact design of the reducer has been a plus on the Armstrong project because many of the units are located along a catwalk or in other confined spaces.

up at our shop in a complete package, my shop manager doesn't have to worry about it either."

MagnaGear Does Not Disappoint

Daniel says the reducers have delivered everything he expected from a Baldor•Dodge brand gearbox, from installation to performance. And he points to several design elements that he believes make this reducer an ideal choice for high torque applications, including the power-dense design.

"The way engineers designed this product means we get more torque out of a smaller reducer," explains Daniel. "This makes the MagnaGear very appealing because you get more torque for the money compared to others in the market. It's a very cost-effective package."

gave its OK to the plan based on the reputation of Baldor•Dodge gearing.

"Like me, they knew that the gearing is well respected in the marketplace," says Daniel. "Your company is not new to this industry, and you have been cutting gears for a long time. We didn't hesitate because we trusted that this gearbox would be a good product and that we would get good support."

Some of that support came from 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. While Daniel performed all his own calculations and made his own motor and reducer selection, he did appreciate the System-1 team confirming his selections, plus the help they provided on other products required for the job.

"I don't have the same level of knowledge on couplings, sheaves and guards," says Daniel. "I simply let the System-1 team handle all of those details, and when the equipment shows



A 210K MagnaGear XTR was selected to operate this 1,197-foot-long conveyor, with an 86-foot lift. This conveyor moves coal from the river barge to Armstrong's prep plant.

Daniel says the compact design of the reducer has also been a plus on the Armstrong project, especially when you consider many of the units are located along a catwalk or in other confined spaces.

“Not only are the units compact, I also like the way the reducer is coupled to the motor,” says Daniel. “The coupling housing is only 20 inches long; others in the marketplace are up to 3 feet long, which causes a lot of problems. The engineers who designed the MagnaGear must understand the industry because they built us a product that we needed.”

The versatility of the reducer is also appreciated by Daniel. MagnaGear reducers are available in parallel shaft or right-angle configurations with solid or hollow output shafts. They also come in several mounting configurations, including tunnel housings. For Daniel, the reducer’s universal housing design also means the customer doesn’t need to keep multiple spares on-site.

“The reducer is set up to work on either side, so I have the option of right-hand or left-hand mounting,” explains Daniel. “Now, I only need one spare that can work anywhere on the project. Other products out there do not offer this same kind of flexibility.”

Reliable Proven Performance

The first coal from the Equity Boot mine was loaded and unloaded in September 2010. Since then Daniel says the reducers have done the job everyone expected them to do, moving coal with no issues. Both Overland Conveying Systems and Armstrong Coal are so pleased with the performance of the product that Daniel has purchased seven MagnaGears on a new Armstrong Coal project.

“All I can say is that if the MagnaGear product didn’t work, or if we had any problems, I would not be using them again,” says Daniel. “But it’s a good product, and I had a good experience working with Baldor on the Boot project, and that’s why I’m back.”

“The engineers who designed the MagnaGear must understand the industry because they built us a product that we needed.”

David Daniel, chief engineer,
Overland Conveying Systems



This 285K MagnaGear XTR reducer and 350 HP Mining Industry motor powers the 3,950-foot-long conveyor that carries coal from the mine site to the river barge. Coal is transported 45 minutes up the Green River to the Armstrong Coal dock at its prep plant.