Even before the wheel was invented, a revolutionary technology had been discovered: the production of flour. The realization that indigestible seeds ground into nourishing dust steered the history and fate of man. Flour and bread are inseparably bound up with human civilization, and our dependence on this product continues today, as flour is the daily food of millions.

Today’s modern mills work hard to meet the growing demand for flour, and many of them are investing in equipment to improve the process and maximize output, while containing costs. That’s the case at Horizon Milling, a Cargill Foods Affiliate mill located in Albany, New York. This facility produces nearly 2.3 million pounds of flour a day. A little over four years ago they began to focus on roll stands and finding a better bearing to use on these critical pieces of equipment.

Roll stands, sometimes called roller mills, are the machines that grind the wheat into flour. Basically, grain is fed between pairs of rotating hardened steel rollers. Each time the material passes between a pair of rollers, the resulting milled stock is run through a sifter, before it moves on to the next milling or until the desired consistency is achieved.

Over the years roll stands have undergone many bearing modernizations or conversions, from sleeve bearings to a variety of roller bearings. The Albany mill had progressed to using an open-style roller bearing, but this bearing was clearly not the solution. Keith Lochner, head miller and 30 year veteran of the facility, explains that because these bearings have to be hand-packed with grease in the dusty mill environment, with product leaking from the roll stands into the bearings, contamination is unavoidable. The result is too many bearings were failing prematurely.

“I would estimate that we had two or three bearings a month that would fail,” says Lochner. “Not only was there the cost of replacing these bearings, it was also time consuming. When these bearings failed, they would seize-up on the roll and they were very, very difficult to get off.”

They faced the same situation during regularly scheduled roll changes. Lochner explains that corrugated rolls are frequently removed so they can be
re-furbished, but he says to get the rolls out, you have to take off four bearings. “Again, these bearings just wouldn’t come off,” says Lochner. “We would have to pound them off, cut them off, or break them off. Of course these bearings would have to be scrapped, and that meant we were throwing out approximately 16 bearings a month.”

When the local Motion Industries branch, Baldor’s distributor partner servicing the location, delivered two Dodge IMPERIAL bearings to be tested in the application, the mill was more than willing to give them a try. With nothing to lose, the mill installed the IMPERIAL inserts and let them run for a couple of months to see how they would perform. It didn’t take long before they knew they had found the solution they had been searching for.

Nearly four years have passed since that first trial period, and Lochner reports that they have now installed more than 400 IMPERIAL bearings. From where Lochner stands, it couldn’t be more of a success. “I don’t have to track or worry about failures any longer,” reports Lochner. “Because these bearings are assembled at the factory and are already lubricated, we don’t have the issue of contamination when we install them. Plus they have a sealing system that helps keep the dust out. It all means that these bearings last.”

Not only are the IMPERIAL bearings performing beyond expectations, they have also provided the easy-on, easy-off solution the mill had been searching for. “These bearings just come right off,” says Lochner. “In fact, it’s so much easier than before that we are saving a lot of time. The roll changes are quicker now and we can keep up with our schedule, even when the plant is running at peak capacity.”

Another benefit, according to Ted Piel, the mills assistant facility manager, has been creating a safer work environment.

Above: This sequence of photos, from top to bottom, illustrates some of the simple steps involved in the removal of the Dodge IMPERIAL bearing. In the past, employees had to pound bearings off, cut them off or break them off, damaging the shaft and destroying the bearing. Today, IMPERIAL bearings are not only providing the easy-on, easy-off solution for the mill, but they are lasting years longer than the previous bearings.
“These bearings just come right off. In fact, it’s so much easier than before that we are saving a lot of time.”

Keith Lochner, head miller, Horizon Milling

“The safety factor in making this change is huge,” claims Piel. “Remember that it took a lot of force to use a 15 pound tube or a sledge hammer to break the old bearings off. And while no one was ever seriously injured in the process, if we can use a product to prevent accidents, that’s what we want to do.”

The ease of removal has added up to one more benefit for the mill; saving money. Lochner says because the IMPERIAL bearings come off the shaft so easily, they can re-use the bearings again and again. “The biggest benefit to us has been the cost savings,” explains Lochner. “Remember that in the past we had to scrap the bearings, but not anymore. We have used bearings up to five times so far and that means we have gotten about four years out them.”

The Motion Industries branch in Albany has documented the actual savings achieved by switching to Dodge IMPERIAL bearings. According to a recent report that tracked bearing usage, the mill has saved $240,000 in product cost over the past three years. “The cost savings is the big story,” claims Lochner. “In the past, bearings would only last about a year and a half, but today the Dodge IMPERIAL bearings are lasting four years and running. That’s added up to tremendous savings for us, and that’s what it’s all about.”

“Features

Corrugated steel rollers are frequently removed so they can be re-furbished, but to get the rolls out, you first have to take off four bearings. By switching to Dodge IMPERIAL bearings the roll changes are fast and easy, saving the mill a lot of time.

Above: The IMPERIAL bearing slides off the shaft so easily, the mill can re-use the bearings again and again, saving them $240,000 in product cost over the past three years.