

Rex® Planetgear™ Speed Reducers Are on a Roll at Nucor-Yamato Steel

By standardizing on a single family of Planetgear speed reducers, Nucor-Yamato Steel can replace any one of the hundreds of roll drives in its mill quickly with the exact ratio it needs. Using a few sizes of the same configuration, the company can make fast replacements without the need for extensive alignment, yet the drives last several times longer than the units they replaced.

Nucor-Yamato Steel Company produces hot rolled wide flange structural steel shapes, standard channel and miscellaneous channel shapes, car building shapes, H-piling and hot rolled steel sheet piling sections. The company has produced structural steel in Blytheville, Arkansas since its first mill opened in 1988. It melts scrap steel and casts blanks in nearly the net

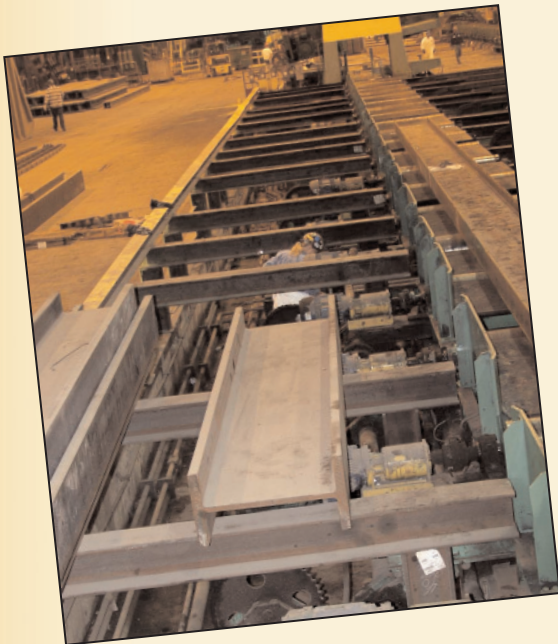
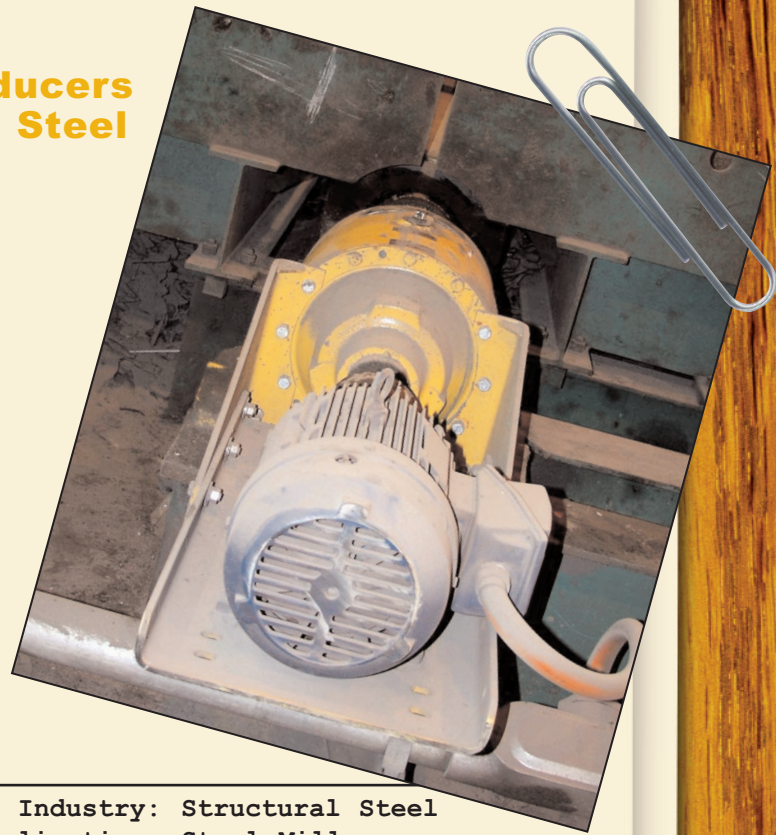


PHOTO:

Several Rex Planetgear drives, during a maintenance shutdown, power rollers used to move steel through the Nucor-Yamato mill.



Industry: Structural Steel
Application: Steel Mill
Product: Rex Planetgear Reducers

shape of the finished product, then hot rolls them into the final shape. In 1993, Nucor-Yamato Steel added a second mill to produce the wide flange beams and H-pilings.

The steel shapes are transported through the mill on a series of powered rollers as they move from one production process to another. The rollers and their drive systems are subjected to heat, impact loads mill scale and water. Under these conditions, maintenance planners look for simple yet rugged mechanical components that are easy to install and maintain.

To power the many roll applications in the Blytheville mill, Nucor-Yamato uses literally hundreds of Rex Planetgear reducers. Maintenance Planner Stacy Bullard says, "We've been using the Planetgear drives for as long as seven

years in some applications. With them, we don't have alignment problems, because they couple up directly between the motor and the driveshaft." She says the drives are used throughout the mill on caster rolls, both sides of the reheat, the descaler, finishing and many other areas.

Bullard notes that it is easier and faster to change ratios so they can get the ratios they need with the Planetgear design than with conventional gearboxes. With a basic stock, local distributor Bearing Headquarters can simply change ratios and have the right gearbox there very quickly. "We use mainly the Venus, Earth and Mars series and a few of the Atlas size," she says.

To extend drive component life under extreme operating conditions, the company has added driveshafts between some of the rolls and the drives. Bullard explains, "We moved a lot of the drives back so they aren't right on the ends of the rolls. They are about 10 feet away now, because we put driveshafts on them so the driveshafts would take the beating."

She estimates that the drives typically last two to three times as long as the units they replaced, which were not as rugged a design. This saves on labor as well as downtime. "I think the reversing action of the mills is what destroyed some of the old drives, but the Planetgears hold up to the reversing," she notes.



PHOTO:

Typical Rex Planetgear roll drive with C-face mounting to motor.

For some applications, Nucor-Yamato changes the Planetgear drives to a C-face mounting. Bullard says, "In a few areas where there is a lot of shock, it is hard to keep the motor tight on a scoop-base mount, so we use a C-face conversion kit to mount the drive right to the motor. This eliminates problems with the motor mount loosening up."

FOOTNOTE:

This application also has been featured in the April, 2000 issue of 33 Metal Producing magazine

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