



Product

Custom Americardan Universal Joints

Application

Seamless Tube Piercing Steel Mill

Highlights

- Special U3575, U3675 and U3750 universal joints supplied
- Rebuilt existing OEM knuckle assembly
- Custom cross and bearing package to fit existing customer components
- Drop-in knuckle spare replacements
- Replaceable inner race bearing package to reduce future repair costs
- U.S. engineering and manufacturing

A leading Midwest seamless tube piercing steel mill was experiencing repetitive OEM universal joint knuckle failures on their mandrel and piercing mills. The original OEM universal joint knuckles would catastrophically fail without warning, turning rollers and other component fragments into projectiles which created a major safety concern. Failures were unpredictable, with some breaking down in days, weeks, or months, creating substantial delays and often shutting down production.

Realizing the gravity of the situation, the local steel mill distributor, Motion Industries, approached Ameridrives to review, inspect, and analyze the current designs in an effort to improve overall knuckle performance. Engineering studies were conducted along with Root Cause Failure Analysis (RCFA) and Finite Element Analysis of all key knuckle components, including the yoke, cross and bearing caps.

Ultimately, Ameridrives developed a new, custom-engineered knuckle solution that provided years of service compared to the premature failures of the original OEM universal joints. Ameridrives was also able to retrofit the existing yokes with new cross and bearing kits after verifying the strength of the existing material, saving the mill money. As the yokes began to wear beyond repair, Ameridrives had the ability to design and manufacture drop-in replacements.

In the six years since Motion and Ameridrives began the repair program, the steel mill has seen universal joint knuckle savings of approximately \$6.7M. With most of the retrofits now completed, the mill expects an annual savings of over \$2.7M. These estimates represent universal joint knuckle savings only and do not include the costs of lost production, associated maintenance, delays, or EHS issues.

US (Customer Service)

1-814-480-5000 (Universal Joints, Driveshafts)

1-888-449-9439 (Small Industrial Driveshafts)

1-219-874-5248 (Irrigation Universal Driveshafts)

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