

# NTN Reduces Bearing Maintenance Costs for Steel Tube Producer

A leading manufacturer of diversified steel pipe and tubes was experiencing frequent bearing failures within their tube forming line. The failures were leading to operational downtime resulting in significant production losses. Frustrated by daily downtime and pressured by steadily increasing production demands, mill maintenance proactively reached out to NTN for a long-term solution that would extend bearing life.

## The NTN Solution

NTN's Technical Service and Engineering group first met with the maintenance team to evaluate the equipment's history, failure modes, constraints, and design objectives. Shielded ball bearings were originally specified in the forming rolls but then converted to open-style spherical roller bearings with little to no external sealing. This conversion was now only lasting an average of one to two operational campaigns.

The challenging operating environment included hard particle contaminants and coolant flushing over the rolls. Furthermore, this steel tube producer recently starting manufacturing thicker steel tubing, requiring the switch from ball to spherical roller bearings to handle the heavier radial loads.



## VALUE ADDED BREAKDOWN

**INCREASED BEARING LIFE**

**\$45,020**

**MAINTENANCE REDUCTION**

**\$5,100**

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**UPTIME IMPROVEMENT**

**\$1,528,800**

**ANNUALIZED COST SAVINGS**

**\$1,578,920**

Bearing failures were catastrophic requiring a minimum of two hours of production downtime when replacing a roll. This problem reduced mill output, with a resulting cost of hundreds of thousands of dollars in lost production and maintenance costs as repairing the rolls was a lengthy, labour-intensive process.

NTN's team immediately established three design objectives: improve sealing, maintain high bearing load capacity, and minimize dimensional changes. Streamlining dimensional modifications to the rolls would be paramount for a workable solution. The NTN team recommended that the facility switch to ULTAGE® W-type sealed spherical roller bearings. Our ULTAGE® line of spherical roller bearings offer industry-leading load capacity and speed ratings, as well as robust integral sealing to ensure superior resistance to external contamination. These factory pre lubricated bearings with integral seals are also compact and simplify assembly.

An NTN Service Engineer was on site to support mill maintenance with the installation of the ULTAGE® test bearings. The equipment was closely monitored during the test period and the new bearing design immediately outperformed the competitor's bearing in the highly contaminated environment.

The mill personnel were so satisfied with the solution and improved life that they decided to implement a complete change-out of the existing bearing design using NTN ULTAGE® sealed spherical roller bearings.

## The Result

After 12 months of service life, the NTN ULTAGE® sealed spherical roller bearings performed beyond expectations. To date, none of the ULTAGE® bearings have actually failed.

Although the cost of purchasing an NTN sealed spherical roller bearing is higher than the competitor's open-style version, the increased bearing life has resulted in an annual savings of \$45,020 in bearing acquisition costs.

The collaboration between mill maintenance and NTN's engineering and sales support team has reduced operating costs and resulted in the mill buying fewer bearings than ever before. Now, with NTN ULTAGE® high-performance sealed spherical roller bearings, the mill has extended their maintenance intervals helping to boost productivity while lowering their grease usage.

The facility has been able to increase production by 80%, while significantly reducing maintenance expenditures, resulting in an annual cost savings \$1,578,920.



## INDUSTRY TESTIMONIAL

### Tooling Maintenance Lead Hand, Steel Industry

“I would rate the application of NTN bearings as a great success. The longevity offered by NTN's sealed ULTAGE spherical roller bearing has minimized maintenance time and maximized productivity. These bearings have proven to be far superior to our current option, allowing for improved machine throughput and increased run time. Day after day, we can count on NTN bearings to perform reliably without any issue. The NTN solution has resulted in a tremendous cost savings as bearing change-outs have decreased in frequency and are now carried out according to a predictive maintenance schedule, approximately once every 18 to 24 months.

Furthermore, NTN's quality and timeliness of engineering service has been outstanding. An emphasis has been placed on striving for total customer satisfaction, by providing an effective and efficient solution that caters to our changing needs. Given we are a large company with a growing level of demand, I can confidently say that NTN has provided service which has surpassed our expectations.”



Increased  
service life



Reduced  
maintenance cost



Environmental  
Protection