

Range of Friction Management Solutions

Products & Services

Timken offers a complete line of solutions for the coal power generation industry. Through its offering of bearings, maintenance tools, condition monitoring, lubricants, repair services and more., Timken is well-positioned to proactively help customers reduce downtime, maintain or improve overall system performance and lengthen maintenance intervals.

Application-specific Solutions

A combination of durable steel, tailored design geometry and proper lubrication can yield impressive performance results. Timken® soot-blower ball bearings feature high-temperature seals and expanded radial-internal clearance for easier turning. The addition of a high-temperature grease allows the bearing to adjust to heat increases in this environment. These three characteristics can extend bearing life and reduce downtime associated with slag build up and boiler breakdowns.

Lubricants

The correct type and use of lubricant can significantly extend bearing and component life by deterring system failures. Timken line of lubricants includes:

- Timken all-purpose industrial grease is a lithium complex lubricating grease offering high-temperature resilience and containing extreme-pressure, anti-wear additives and corrosion inhibitors.
- Timken heavy duty moly grease provides resistance to extreme pressures and corrosion and maintains mechanical stability, even in the presence of water.



Timken single-point lubricators.

G-Power and M-Power chemical- and power-driven lubricators provide a consistent application of oil or grease to bearings, gears, chains and other system components. Canisters can be filled with one of more than 200 types of lubricants.



Seals

Timken has seal solutions for coal fired stations. Large seals, usually made of Gylon, are used inside the wheels and gearbox of the pulverizers. There are also ATEX certified bearing isolators for process pumps and motors .



Condition Monitoring

The Timken portfolio of integrated industrial services offers power generation customers ways to monitor and improve overall system performance. Our line of condition monitoring equipment continuously evaluates bearing condition, lubrication quality and machine vibration, and is aimed at identifying potential system issues before failures occur.



Our products include portable instruments, continuous monitoring devices and online systems. We can help you maximize uptime with the development of a cost-effective program to achieve maximum output and reliable service – ensuring maintenance personnel are properly trained. A comprehensive condition-monitoring program can help you:

- Increase productivity and equipment uptime.
- Reduce capital expenditures by maximizing the useful life of machinery.
- Reduce maintenance costs by planning and scheduling needed repairs.
- Improve workplace safety.



New bearing configuration, debris-tolerant steel yield substantial savings

Every three months, Pacific Gas & Electric (PG&E) of Indiantown, Fla., was experiencing severe bearing damage in its pulverizers. PG&E contacted Timken to help. Engineers from both organizations spent nearly a month researching and developing a solution: a tapered/cylindrical bearing combination, made with debris-tolerant steel, which replaced the standard spherical/cylindrical bearing configuration. The new design fits in the existing envelope and has extended life by five times the previous design. This Timken-inspired solution may save PG&E more than \$300,000 by preventing multiple failures.



Great River Energy saves thousands per journal assembly

After years of replacing worn journal bearings from a variety of suppliers, Great River Energy's Coal Creek Station in Underwood, N.D., desired a more economical approach. Timken and its local distributor developed a three-year plan that delivers a steady supply of bearings, including the review of in-service bearings for possible refurbishment. Since agreeing to the plan, Coal Creek Station has saved more than \$30,000 annually on bearing replacement – \$2,500 per journal assembly and \$7,500 per pulverizer overhaul. Timken engineers also helped facilitate a bearing setting change that has increased productivity.



PPL Montana relies on Timken for on-site training

As one of the United States' largest power generators, PPL Montana needed a program that would help extend bearing life, reduce maintenance costs and improve equipment reliability. Following the training, Maintenance Training Instructor Hank Coffin saw immediate benefits. "I realized that all of our team members did not have the same level of training and knowledge," he says. "Today, our mechanics, engineers, apprentices and management have learned from the program and are operating on the same page." The facility received certification and has since increased uptime and decreased maintenance costs. The training program also introduced PPL to the benefits of bearing repair versus bearing replacement.



Reliable Solutions for Power Generation



TIMKEN
Where You Turn

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Bearings • Steel • Precision Components • Lubrication • Seals • Remanufacture and Repair • Industrial Services

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Timken Where You Turn



Why do power generation customers continue to turn to The Timken Company? Reliable products. Collaborative services. Proven successes. Timken helps equipment makers and maintenance crews alike improve productivity and minimize downtime through bearings that have withstood the test of time and services that respond to this industry's need to reduce overall costs.

Power generation customers seek products that perform better and last longer. With the acquisition of The Torrington Company and a continually expanding array of products and services, Timken is better positioned than ever to meet the needs of coal-fired power plants.

Value-added Products

More than a century of knowledge and experience in design, application and process engineering is integrated into every Timken® tapered, spherical, cylindrical and ball bearing. The result is a high level of durability and extended performance within bowl mill journal wheels, gear drives and other power generation equipment.

Reliable products start with reliable materials. Timken is the world's largest producer of bearing steel. Our standard bearing steel minimizes the impact of debris in most industrial environments. In fact, in con-

trolled laboratory tests under identical debris conditions, Timken standard bearings consistently equaled or outperformed competitors' "debris-resistant" bearing lines (see chart at right).

In environments where debris is a constant issue, Timken offers a more advanced level of protection and performance. Timken debris-resistant bearings are available in a wide variety of sizes, bearing types and quantities. Our Debris Analysis Program evaluates bearing and component performance within systems, models debris damage and helps engineers identify the most appropriate debris-resistant bearing solutions.

Capabilities

Timken has the products, knowledge and expertise to help coal power generation customers improve equipment performance, lengthen maintenance intervals and reduce costs.

Success Stories

Timken works closely with coal power generation customers to solve tough application problems. Learn more about specific customers who turned to us for friction management and power transmission solutions.

Applications

Coal power plants turn to Timken for help solving application problems in conveyors, gearboxes, pumps, and coal crushers and pulverizers.

Applications

Power generation customers rely on Timken to solve the application problems in their pulverizers.

Grinding Roller

Bearings in grinding rollers are subjected to debris, high temperature, low speed and inadequate lubrication. Timken® bearings help to lengthen uptime and increase productivity.

- Cylindrical roller bearings
- Tapered roller bearings
- Spherical roller bearings
- Seals

According to your application needs Timken engineers can recommend Timken® debris-resistant bearings or DuraSpexx™ Power Rating bearings to further enhance performance.

Gear Drives

Improper installation or lubrication can decrease the performance of gear drives in pulverizers. Timken helps customers to extend bearing life and enhance gear drive performance.

- Cylindrical roller bearings
- Tapered roller bearings
- Spherical roller bearings
- Thrust bearings
- Seals



Cylindrical roller bearings



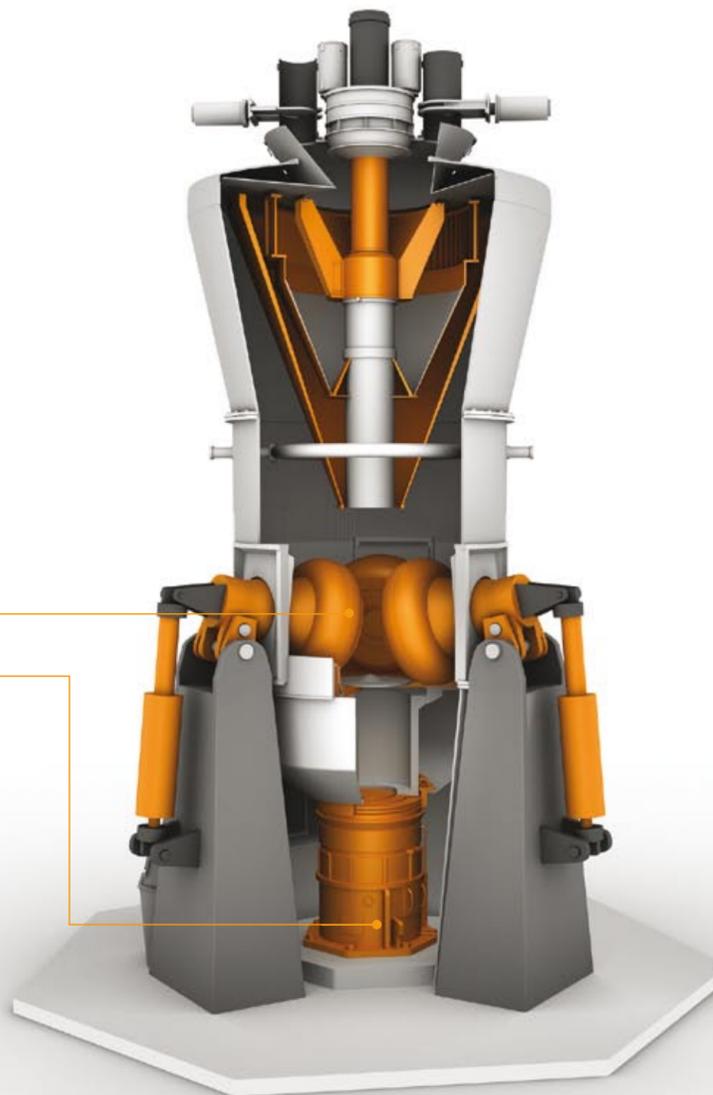
Tapered roller bearings



Spherical roller bearings



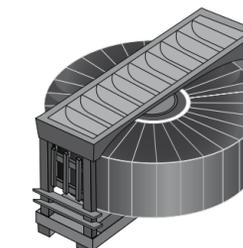
Thrust bearings



Timken® bearings are also widely used in other power generation equipments

Air preheater

- Spherical roller bearing
- Thrust spherical roller bearing



Air preheater

Conveyor

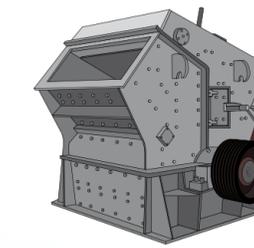
- Housed spherical roller bearing



Conveyor

Crusher

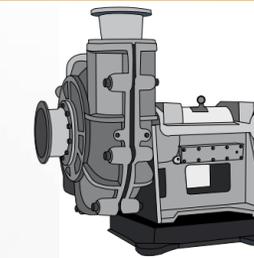
- Spherical roller bearing



Crusher

Slurry Pump

- Tapered roller bearing
- Bearing isolators



Slurry Pump

