Through enhanced products, Timken helps oil and gas customers drill deeper.

Proprietary steel-making technology and engineered surfaces enhance bearing performance in critical systems like top drives, mud pumps, swivels and sheaves.

Timken has a global reach, but local presence, giving customers around the world access to the products, services and support they need to help keep rigs running optimally.
Do you need to drill deeper?

Then Timken products are your solution.

Timken has the products, knowledge and expertise for your oil and gas applications that help gain new performance levels, lengthen maintenance intervals and reduce bearing replacement costs. Many of our products have set industry standards, and we continue to introduce enhancements for today’s systems.

Timken adds value from the way we design and manufacture our bearings to our broad offering of related components and services. Our friction management solutions help oil and gas customers drill deeper with increased string load, lengthen uptime and extend maintenance intervals.

The Timken® and Torrington® brands are trusted by original equipment manufacturers, distributors and end users alike. Timken introduced the tapered roller bearing first. This bearing design effectively manages radial and thrust loads in a variety of industrial applications.

In addition to tapered bearings, bearings for oil and gas applications are available in the following types:

> spherical
> cylindrical
> tapered thrust and
> ball.
These Timken and Torrington bearings are incorporated into critical off-shore and land drilling equipment, including swivels, top drives, draw works, mud pumps and crown and traveling blocks. We design and manufacture all the bearings you need for all the positions in your rig.

It's about leading the oil industry
www.bearing.sg

As far back as the 1940s, Timken was an oilfield bearing leader, designing swivel main bearings and tapered configurations for crown and traveling blocks. Those designs set the specifications for lifting loads, and those standards remain in effect today. In the days when rotary-table bearings were crude, Torrington introduced a host of ball and roller designs that enhanced performance. As power swivels evolved, so did Timken's contributions.

The shift to triplex single-acting pumps also caused a shift from tapered roller to cylindrical roller crankshafts to accommodate greater capacity and weight. Timken and Torrington led the way with new bearing designs.

Today, Timken represents the best of Timken and Torrington technology, manufacturing and service. Our products are made from some of the cleanest, best-performing steel in the world, and we have introduced material and finishing enhancements that yield improvements in life, capacity and power.

Traveling block solutions

Timken tapered roller bearings offer durability and reliability in sheave positions. Utilizing DuraSpexx™ Power Rating Series, coating technology and enhanced surface finishes, we will help you deter corrosion and manage higher load capacities.
Condition monitoring solutions

> Monitor vibration up to 50Gs

> Monitor relative lube film thickness to prevent bearing damage

> Measure temperature trends in conditions up to 450°F

> Wireless transmissions extend up to one-half mile from transmitter to receiver
has manufacturing expertise and capabilities for 95 percent of the bearing product requirements in the oil and gas and rig service industry.

Crown and traveling block solutions
- DuraSpexx Power Rating Series bearings offer greater load capacity in existing design.
- AquaSpexx™ bearings deter corrosion.
- Both bearing types help extend bearing life.

Top drive solutions
- Increase load capacity. DuraSpexx Power Rating Series bearings offer greater load capacity – a 23 percent increase in main bearing API load rating.
- Increase life. Advanced materials and enhanced surfaces extend bearing life up to two times standard bearings.

Mud pump solutions
- The extended life of Timken bearings in mud pumps offer increased uptime, extended maintenance intervals and improved productivity.
The longevity and performance of Timken oil and gas products is largely based on our strengths in research and advanced technology. Our sales and application engineers, collaborating with customers, transfer this knowledge into innovative, value-added product solutions that provide competitive advantages for our customers.

In Timken laboratories, engineers test enabling technologies related to advanced materials, raceway surface conditioning and manufacturing to determine how these enhancements affect system performance. Our technical breakthroughs include:

**Engineered surfaces**
We have developed coatings and finishes that, when applied to bearing rollers and other surface-to-surface contact areas, enhance bearing fatigue life, corrosion resistance, speed capabilities and friction reduction.

**Debris solutions**
Bearing raceways often operate in lubricants that are contaminated with large-particle debris from gears and other sources. These particles damage raceways and typically reduce fatigue life of standard bearings. Timken has developed specialized bearings that help withstand these effects and enhance reliability.

**Timken® DuraSpexx™ Power Rating**
Series bearings
These bearings, manufactured using Timken proprietary steel and engineered surfaces technology, provide up to twice the fatigue life and 23 percent higher capacity than standard bearings. This makes it easier for oil and gas companies to improve the power density of their components.
It’s about quality

The Timken® and Torrington® brands represent performance, reliability and service. International Organization for Standardization and QS9000 certifications are evidence of our conformity to internationally recognized quality standards. Wherever Timken products are manufactured, they are interchangeable around the world because of our consistent quality. We have received hundreds of honors from global customers acknowledging Timken’s excellence as a preferred supplier.

Throughout our organization, associates use Lean Six Sigma concepts to identify and implement improvements. As our internal processes are streamlined, we are able to reduce cycle times and costs.

Just as we are the supplier of choice for automotive and other industries, we are your source for the products that help bring new levels of performance to drawworks, mud pumps, crown blocks, top drives and other rig systems.

**DuraSpexx Power Rating Series enhances life in top drives**

Using proprietary steel technology and engineered surfaces, Timken’s DuraSpexx Power Rating Series bearings have up to 23 percent more load capacity and last up to twice as long as standard Timken bearings. This means 23 percent higher API load ratings for Top Drive main bearings.

**Relative Life Test**

9.75” Cup OD tapered thrust bearing

<table>
<thead>
<tr>
<th>Relative Life</th>
<th>Mean Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>(b = 1.5, 72 tested)</td>
</tr>
<tr>
<td>DuraSpexx</td>
<td>(b = 1.2, 44 tested)</td>
</tr>
</tbody>
</table>

*Photo courtesy of Tesco Corp.*
Timken manufactures products in 75 facilities on five continents. We have resources close to our customers – including Eastern Europe and Asia. By being near our customers, we become strategic solution providers because we listen as we learn your business.

We have created a strategic global logistics and transportation system that complements our manufacturing organization. Timken offers more than 500,000 products in different sizes and styles. This is one of the broadest product selections in the world.

To provide the best service in the industry, we assign customer support teams – comprised of sales engineers, product engineers, quality specialists and customer service liaisons – to each customer. These cross-functional teams ensure that all aspects of customer satisfaction, from product integrity to modified designs, are managed appropriately.
Drill deeper with Timken products

Timken is your resource for comprehensive oil and gas solutions.

To learn more, visit www.timken.com.

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