

TIMKEN

Sixty Years In Paper





Our 60 Year Paper Celebration

- In 2006 Timken celebrates its *Sixtieth Year in Paper*. In truth, Timken, and its later acquisition Torrington, were providing tapered and cylindrical roller bearings to papermaking applications in the early 20th century, but the advent of Torrington brand spherical roller bearings marked the real beginning of the companies partnership with the pulp and paper industry.
- Throughout these sixty years, the drive to improve performance for paper mill bearings has in fact been key to the growth of bearing technologies for all the markets we serve. Today, Timken brings more value than ever to the paper industry through continued product innovation, enhanced service solutions, and responsive technical support.



Our 60 Year Paper Celebration

- Since the beginning, our commitment to the pulp and paper industry has been built on four pillars:
 1. **We provide superior products and service solutions.**
 2. **We stand behind those products and services.**
 3. **We have bearing people who understand pulp and paper machinery.**
 4. **Our customers have access to those people when they need them.**

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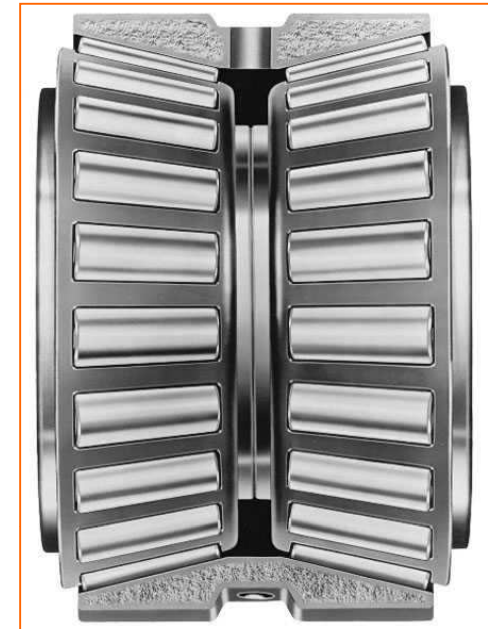
Early Milestones





- **Early Milestones**

1900-1930's – Timken supplies tapered roller bearings and Torrington supplies radial bearings for paper machine roll applications.





- **Early Milestones**

1946 – Torrington introduces its line of spherical roller bearings specifically designed for papermill applications.





- **Early Milestones**



1950 – Torrington Service Engineers are added to provide field technical support to paper mills and other industrial facilities.



- **Early Milestones**

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- 1963 – Torrington constructs the Tyger River Plant in Union, SC, expanding capacity for large heavy-duty roller bearings used in paper mills.





- **Early Milestones**



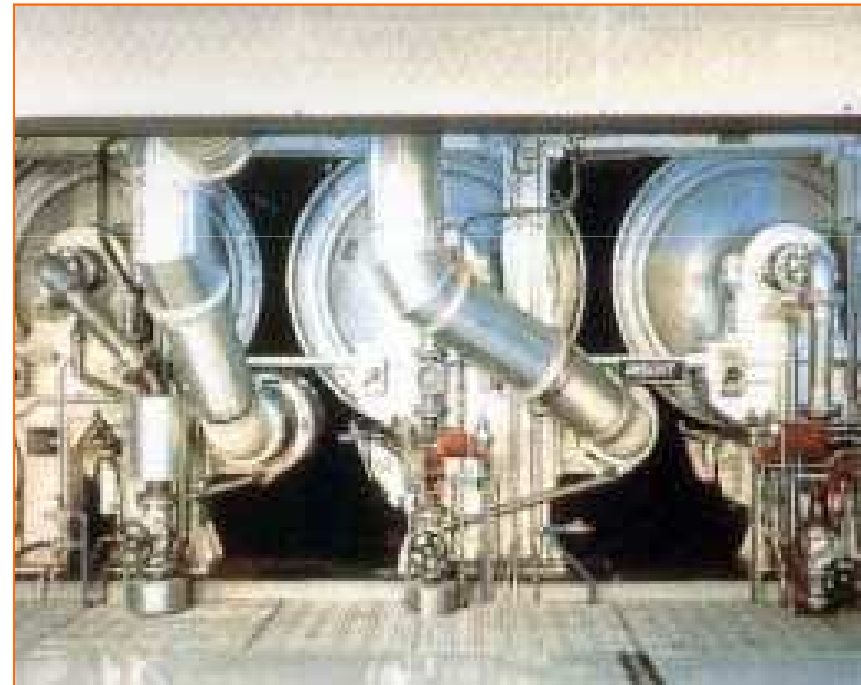
1965 – Torrington secures the patents on the triple ring bearing. A new bearing design for driven variable crown rolls.

The original patented designs are developed for Beloit and Farrell paper machine applications.



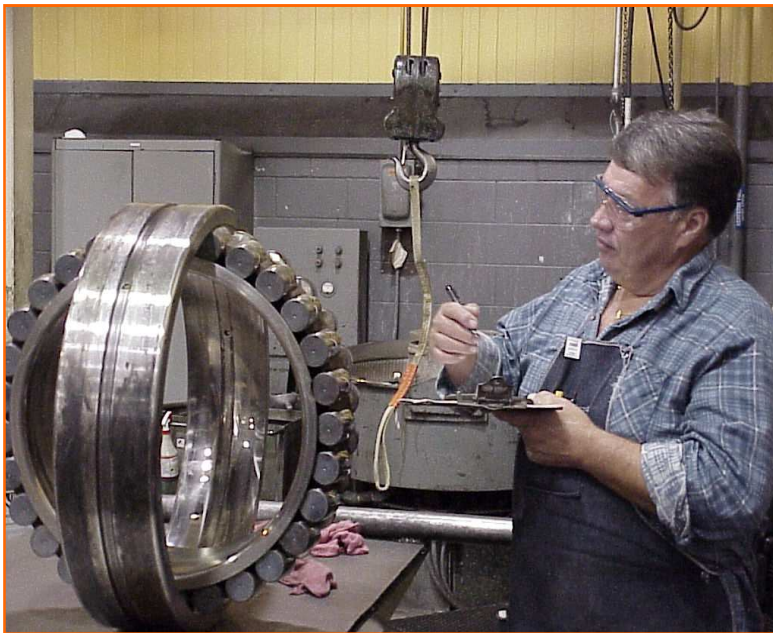
- **Early Milestones**

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- 1975 – Torrington leads the industry by being the first to develop carburized inner rings for dryer applications. This solves the reoccurring problem of ring fracture under the increasing demands for faster start-ups and improved machine uptime.





- **Early Milestones**



1979 – The Tyger River Plant start up of a focused bearing repair program able to recondition worn or damaged bearings for extended life in paper machines or other heavy industrial applications.



- **Early Milestones**



1985 – Torrington's merger with Fafnir provides a broader scope of served machinery in the mill. The marriage of the complimentary product lines and solutions open up new technical possibilities.



- **Early Milestones**

1988 – Torrington offers corrosion resistant spherical roller bearings coated with Fafnir TDC™. They are introduced at TAPPI 88.





- **Early Milestones**

- ☐ 1992 – Standardized series of high precision spherical roller bearings are developed by Torrington to meet reduced radial runout requirements of the modern paper machines. Designated with a C08 mode code





- **Early Milestones**



1995 – Complete line of YM Style high capacity, precision spherical roller bearings available, increasing load carrying ability and improving paper machine roll radial runout control.

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Recent Developments





- **Recent Developments**

- ☐ 2002 – Torrington introduces a new generation of large bore paper machine bearings, engineered to eliminate an enduring nuisance, fractured inner rings and rollers. These bearings are identified by the modification code W906A.
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- **Recent Developments**

- ☐ 2003 – Timken acquires Torrington becoming the largest bearing company in the Americas, third largest globally. The combined product lines offer unmatched breadth to cover virtually any application in a pulp and paper or forest product facility.
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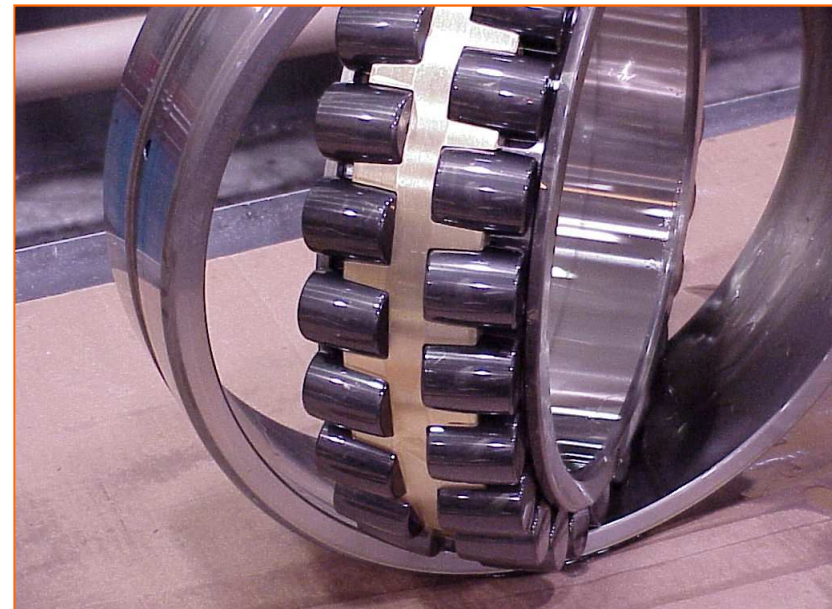
TIMKEN®

Torrington®
Fafnir®



- **Recent Developments**

- ☐ 2003 – Timken introduces
- ☐ ES300 coatings to papermill
- ☐ bearings. This life extending
- ☐ surface enhancement prevents
- ☐ adhesive wear in problematic
- ☐ applications like dryers, press
- ☐ rolls, and suction rolls.
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- **Recent Developments**

2005 – Timken offers papermill bearing maintenance training designed for roll shop mechanics, vibration analyst, and mill reliability engineers. The school is held quarterly at the Tyger River plant.



TIMKEN

Where You Turn

