

Timken -  
The Right Choice

- Reputation for manufacturing quality OE products
- US-based OE bearing manufacturer for more than 100 years
- Focused on bearing, hub and seal category solutions, not just wheel-ends
- Complete quality product offerings
  - Bearings
    - Ball, cylindrical, needle and tapered
    - Hub unit bearings (ball and tapered)
  - Grease
  - KWIK-Sleeves™
  - Sensor kits
  - Seals
  - Specialty kits
- Timken OE products look, fit and perform to the engineered specifications of the application
- Product warranty and obsolescence protection
- More than \$60M spent annually on research and development
- Market support
  - Sales support
  - Promotions
  - Cataloging
  - Field service engineering available
  - Dedicated customer service, phone 866-9-TIMKEN
  - Free technical training
    - TechTips
    - Automotive: [www.timken.com/autotechtips](http://www.timken.com/autotechtips)
    - Heavy-Duty: [www.timken.com/techtips](http://www.timken.com/techtips)
    - Tech Series: [www.timken.com/techseries](http://www.timken.com/techseries)

Hidden Cost  
of Lower-Priced Products

Selling premium Timken® products means more profit dollars for you, not to mention your reputation. Here's the math:

	Premium Timken Products	Lower-Priced Products Example
Warehouse Distributor / Jobber Cost	\$10,000	\$7,500
Desired Gross Margin %	35%	35%
Selling Price	\$15,400	\$11,500
Profit Dollars	\$5,400	\$4,000

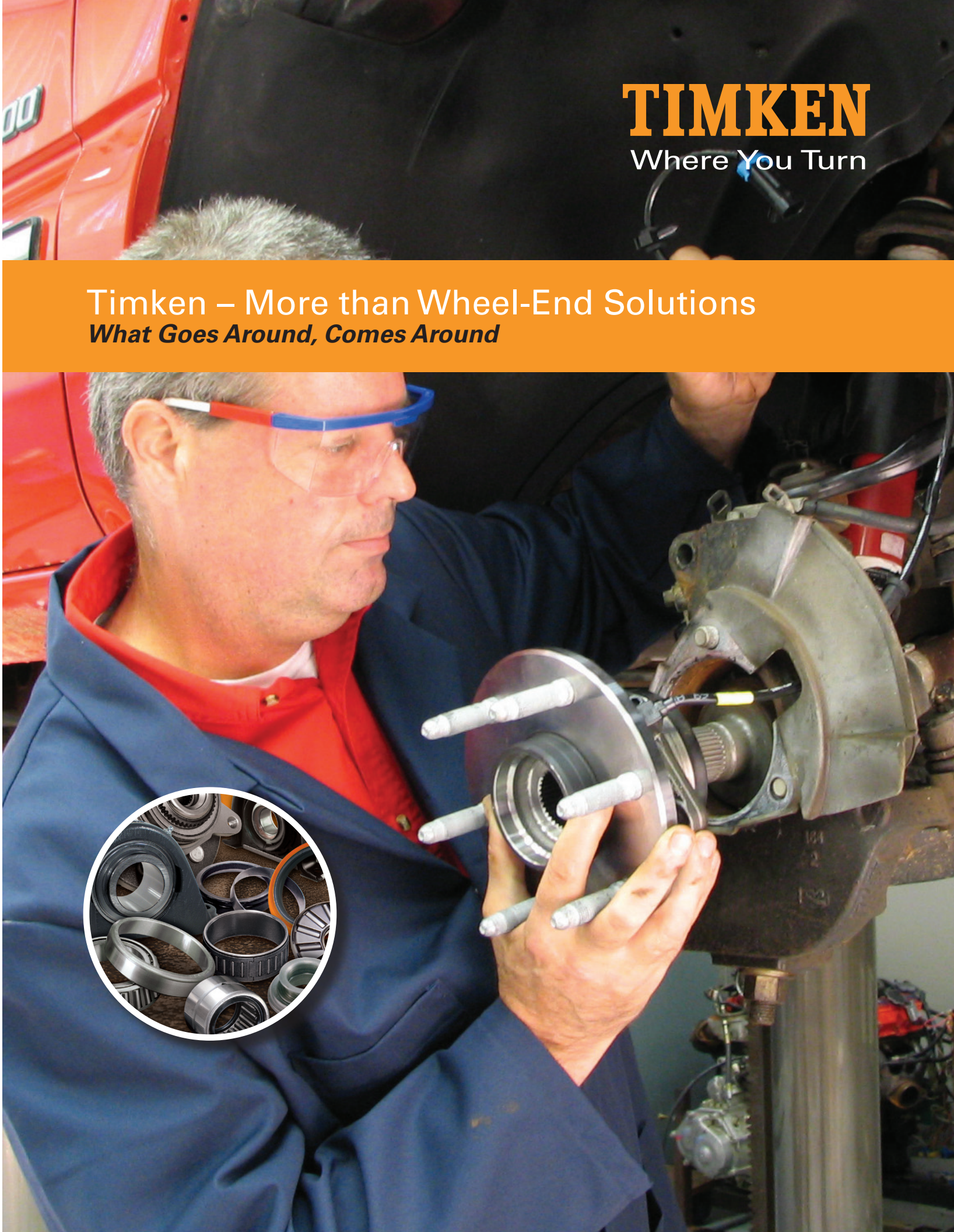
■ Lower selling price required to move cheap product results in lower profit dollars

One more thing to keep in mind – carrying dual inventory on the same part numbers results in higher carrying costs and reduces your bottom line profits.



**TIMKEN**  
Where You Turn

Timken – More than Wheel-End Solutions  
*What Goes Around, Comes Around*



**TIMKEN**  
Where You Turn

[www.timken.com](http://www.timken.com)

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**BEARING AND SEAL  
CATEGORY LEADERSHIP**

Since Henry Timken patented the tapered roller bearing in 1898, The Timken Company has been recognized as a worldwide leader in the manufacturing of highly engineered bearings. Timken also has an impressive history of designing related friction management products, which are made in some of the world's most advanced manufacturing plants.

**Fast Facts**

- Total number of facilities: 66 plants and more than 100 sales offices, technology centers and distribution warehouses located in 27 countries on six continents.

- More than \$60M spent annually on research and development: 13 global technology centers.

Our extensive global manufacturing facilities and research capabilities provide a solid foundation for continued product innovation. By choosing Timken,

you are working with a manufacturer that is designing tomorrow's products and applications today.

**QUALITY ADVANTAGE**

Only products that meet our stringent worldwide quality requirements earn the right to be marked with the Timken brand. No matter where it is produced, every product that carries our respected brand is backed by the full strength and integrity of Timken.

**Fast Facts**

- Timken bearing plants currently hold more than 120 quality certifications under ISO 9001, ISO 9002, ISO 14001, ISO/TS 16949, ISO/TEC 17025, QS 9000, M1003, A2LA, AS 9100 and Boeing's D 19000.

- Last year, Timken received more than 300 customer quality awards.

Timken is a primary supplier to Original Equipment Manufacturers. The same

consistent quality and dimensional characteristics of Timken products are welcomed by professional installers. These factors help to ensure proper product installation, minimize installation time, reduce comebacks and warranty claims, and therefore maximize your profitability.

**WHY SELL  
PREMIUM TIMKEN®  
PRODUCTS?**

The true cost of any product installation includes the costs of comebacks and the potential for lost business; a dissatisfied customer may seek an alternative source and never return to you. Using genuine Timken parts helps professional installers get the job done right the first time. It's more than just installing the right part correctly – it's also how well the part performs.

Even if a product looks like the original design and the external dimensions are the same, it does not mean the part will perform like the original. In the absence of industry standards, such product may not meet original equipment composition including steel grade, heat-treat or internal geometry specifications.

Timken has a single-minded commitment to excellence. Why? Because our reputation is at stake – as well as the reputation of our authorized warehouse distributors and the professional installers who use our products.



# HUB UNIT BEARING GENERATIONS

## Tapered Roller Bearing Type

## Ball Bearing Type

**GEN 1  
Double-Row  
Tapered Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral double cup**



**Benefits:**

- Eliminates pre-load adjustment at installation
- Minimizes axial space requirements
- Compact / reduced envelope dimension
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space
- Greater load and capacity ratings than ball versions

**GEN 2  
Double-Flange  
Tapered Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral raceways in flanged cup**



**Benefits:**

- Ease of installation – bolts direct to knuckle
- Eliminates pre-load adjustment at assembly
- Minimizes axial space requirements
- Compact / reduced space
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space
- Greater load and capacity ratings than ball versions

**GEN 2.5  
Double-Flange  
Tapered Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral raceways in flanged cup**
- **FORMED HUB™** – patented technology



**Benefits:**

- Ease of installation – bolts direct to knuckle
- Eliminates pre-load adjustment at assembly
- Minimizes axial space requirements
- Compact / reduced space
- Pre-clamped / self-retained
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space
- Greater load and capacity ratings than ball versions

**GEN 3  
Double-Flange  
Tapered Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral raceways in flanged cup**
- **Integral outboard raceway on hub**
- Flanged inner and outer ring
- **FORMED HUB™** – patented technology



**Benefits:**

- Ease of installation – bolts direct to knuckle
- Eliminates pre-load adjustment at assembly
- Minimizes axial space requirements
- Pre-clamped / self-retained
- Compact / reduced space
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space
- Greater load and capacity ratings than ball versions

**GEN 1  
Double-Row Angular  
Contact Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral double outer race**



**Benefits:**

- Eliminates pre-load adjustment at installation
- Minimizes axial space requirements
- Compact / reduced envelope dimension
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space

**GEN 2  
Single-Flange  
Angular Contact Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral raceways in outer ring**
- Flanged outer ring



**Benefits:**

- Easier installation
- Eliminates pre-load adjustment at assembly
- Minimizes axial space requirements
- Compact / reduced space
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space

**GEN 2  
Double-Flange  
Angular Contact Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral outer ring / raceways**
- Flanged inner and outer rings



**Benefits:**

- Easier installation
- Eliminates pre-load adjustment at assembly
- Minimizes axial space requirements
- Compact / reduced space
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space

**GEN 3  
Double-Flange  
Angular Contact Bearing**

**Features:**

- Pre-set internal clearance / pre-load
- Pre-lubricated
- Integrated seal – sealed for life
- **Integral inner ring / outboard raceway**
- Flanged inner and outer rings



**Benefits:**

- Easier installation
- Eliminates pre-load adjustment at assembly
- Minimizes axial space requirements
- Compact / reduced space
- Maintenance free – self-contained
- Optimizes bearing life and rigidity within the available space

**Keys to  
Choosing the Right  
Hub Unit Bearing for Your Application**

- 1)** Original design ensures appropriate application performance. A Gen 3 in an original Gen 2 design is not necessarily better.
- 2)** Gen 3 hub unit bearings have integral raceways on the hub and flanged bearing, not just the flanged bearing.
- 3)** Simply because a hub unit bearing contains an integral raceway does not make it a Gen 3. Some non-manufacturers market hub unit bearings as Gen 3 because they contain integral raceways when they actually contain the characteristics of Gen 1 and/or Gen 2 hub unit bearings.
- 4)** All wheel-end designs are driven at the concept or design stage of the OE process. Various generations are utilized including Gen 1, Gen 2 and Gen 3 designs. All generations are not capable of converting to Gen 3.
- 5)** While there are Gen 3 hub unit bearings on rear wheels, most of them are utilized on the front wheels of passenger cars, light trucks, and SUVs.
- 6)** Most rear wheel applications still utilize Gen 1 and Gen 2 style hub unit bearings as well as cylindrical bearings.
- 7)** Even though a hub unit bearing looks like the original design and its external dimensions are the same, it does not mean the hub unit bearing will perform like the original. In the absence of industry standards, such product may not meet original equipment composition including steel grade (forgings, castings, wheel studs, etc.), heat-treat or internal geometry specifications. Can you trust the design of a non-manufacturer?
- 8)** The Timken Company has chosen to utilize Gen 1 tapered bearing designs for some Gen 2 ball applications due to the increased capacity and enhanced performance of the tapered bearing.
- 9)** Tapered bearings and hub unit bearings have greater load and capacity ratings than like-size ball bearing alternatives.
- 10)** Tapered bearing designs can be used in ball applications but ball bearings can rarely be used in tapered designs due to capacity and performance requirements.