

**TIMKEN**  
Where You Turn



**The soul of Timken in a spherical roller bearing**



# TYPICAL APPLICATIONS

Timken high-quality bearings can be put to work in any application where spherical roller bearings can be specified. Some of these applications are:

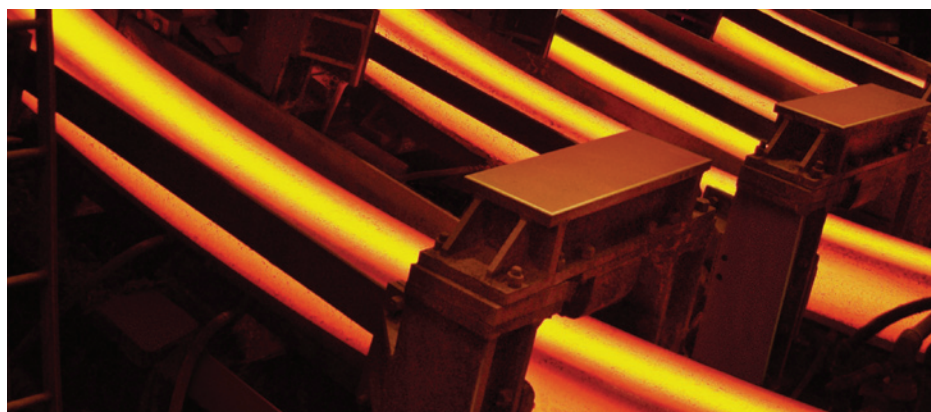
Gearboxes

Casters

Aggregates, including shaker screens

Heavy stationary industrial conveyor systems

Industrial fans





# Peak Performance for Spherical Applications

Superior quality and performance are standard in every Timken product. Our experience and capabilities in bearing technology, manufacturing, engineering support and distribution are legendary. Now, with the high-performance line of Timken spherical roller bearings, you have more options for meeting the toughest, most demanding applications. From heavy gear and caster applications to the harshest aggregate and conveyor systems, Timken sphericals stand ready to help you operate at higher levels of efficiency and capacity.

## A Quantum Leap in Performance

With higher load and speed ratings than previous Timken spherical roller bearings, this next generation achieves higher performance levels with improved surface finishes and innovative features that are designed to lower operating temperatures and increase load-carrying capabilities:

- New cage designs, including a nitrided, stamped steel slotted cage, help provide better purging of contaminants.
- Optimized internal geometries provide positive axial roller guidance and improved lubricant distribution.
- Circumferential roller guidance generates positive hydrodynamic contact, contributing to better roller/cage interaction.

The result of these innovations is an 18 percent increase in capacity for a 75 percent design life improvement over our previous spherical roller bearing design.

**The next-generation of Timken spherical roller bearings, available with either a steel or brass cage, runs cooler with a longer life and greater reliability when compared to same-size competitive bearings.**

## Quality Solutions

As the only premium bearing manufacturer to also make super-clean, high-alloy bearing steels, we understand the critical quality link between materials and product performance.

We also strictly adhere to the Timken Quality Management System in every plant worldwide, so each bearing product meets the same high performance standards—no matter where in the world it is manufactured.

## Dependable Service

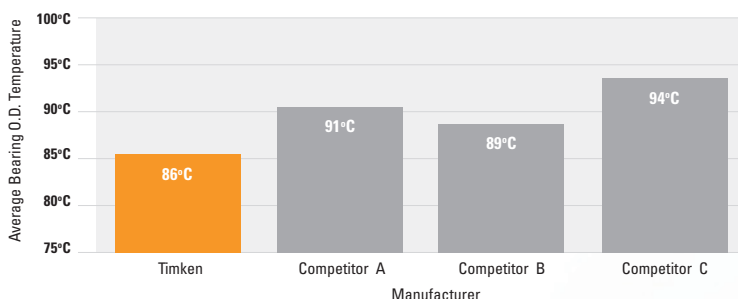
Every Timken spherical roller bearing is backed by the knowledge of our industry-leading experts. They stand ready to assist you with product design, application knowledge and 24/7 field engineering support—anything you need to help improve uptime and maximize equipment performance.

## On-time Delivery

We know short lead times are critical to keep your operations up and running. We stock many Timken spherical roller bearings for immediate shipping.

## Cooler than the Competition

Lower operating temperatures increase bearing life by increasing lubricant life. A 5°C decrease in operating temperature can translate to 9 percent longer bearing life. In tests, Timken spherical roller bearings ran at consistently lower temperatures than same-size competitive bearings.



## Industry-leading Thermal Speed Ratings

The design of the next-generation Timken spherical roller bearing places its performance among the industry leaders with a 17 percent increase in average thermal speed rating over the previous Timken product.



# Timken Spherical Roller Bearings

**From 25 mm bore to 2,000 mm outside diameter**

Timken spherical roller bearings feature either stamped steel, window-type cages or precision-machined, roller-riding brass cages. They come in a wide variety of sizes and configurations to meet the requirements of demanding applications. We stock popular part numbers for immediate availability and offer size ranges from 25 mm bore to an outside diameter of 2,000 mm.



### Stamped Steel Cage (EJ)

- Two-piece, land-riding, window-type cage
- Surface hardened for increased strength and reduced wear
- Slotted face for more efficient lubrication distribution
- Designed for high speeds



## Machined Brass Cage (EM or EMB)

- EM roller-riding
- EMB land-riding
- Enhanced roller/cage contact geometry is designed to provide optimum roller guidance and reduced friction
- Robust cage bridge is designed to operate in extreme environments

[illegible]

# **TIMKEN®** **SPHERICAL** **ROLLER** **BEARINGS**

Inspired by the industry-leading Timken® tapered roller bearing, the redesigned Timken spherical roller bearing helps manufacturers and end-users build and operate leaner, more reliable equipment, while helping to reduce their operating costs. This power-dense bearing is designed to allow original equipment manufacturers to downsize their designs and improve performance. For operators, the new design can mean less maintenance, while cooler operating temperatures help to lengthen bearing service life.





# Timken® Spherical Roller Bearings Modification Codes

Timken spherical roller bearings feature specific modifications to meet your application requirements. The table below provides a list of the most popular bearing modifications. Please consult your Timken sales representative for further information and a complete modification list.

Timken <sup>(1)</sup>	SKF <sup>(2)</sup>	FAG <sup>(3)</sup>	NSK	Timken General Definition
EJ	E, EJA, C, CC, CCJA, EC, ECC	E1	EA	Stamped nitrided steel-cage - high-performance
EM	CA, CAC, CAF, ECA, ECAF, CCJA	M		One-piece roller-riding, machined-brass cage - high performance
EMB	CAFA, CAMA	MB		One-piece inner ring, piloted, machined-brass cage - high performance
CJ	C, CC, CCJA, EC, ECC	J	Cag, C, CD	Stamped steel cage - high performance
YM	CA, CAC, CAF, ECA, ECAF, CCJA	M	CA	One-piece roller-riding, machined-brass cage
YMB	CAFA, CAMA	MB	CAM, AM	One-piece inner ring, piloted, machined-brass cage
YMD				Two-piece inner ring, piloted, machined-brass cage
C2	C2	C2	C2	Bearing Radial Internal Clearance (RIC) smaller than normal
C3	C3	C3	C3	Bearing Radial Internal Clearance (RIC) greater than normal
C4	C4	C4	C4	Bearing Radial Internal Clearance (RIC) greater than C3
C5	C5	C5	C5	Bearing Radial Internal Clearance (RIC) greater than C4
C6	C6	C6	CGxx, SLxx	Specific RIC designed to bearing size
<sup>(4)</sup>	S1	S1	S11	Bearing rings dimensionally stabilized for use at operating temperatures up to 200°C
S2	S2	S2		Bearing rings dimensionally stabilized for use at operating temperatures up to 250°C
S3	S3	S3		Bearing rings dimensionally stabilized for use at operating temperatures up to 300°C
S4	S4	S4		Bearing rings dimensionally stabilized for use at operating temperatures up to 350°C
C02	C02	T52BE	P5B, P53	Inner ring with P5 running accuracy
C04	C04	T52BN	P5C, P52	Outer ring with P5 running accuracy, W4 (SKF does not include W4)
C08	C08	T52BW	P55	P5 running accuracy (C02+C04)
C08C3	C083	C3, T52BW	P55, C3	P5 running accuracy (C02+C04), C3 RIC
C08C4	C084	C4, T52BW	P55, C4	P5 running accuracy (C02+C04), C4 RIC
K	K	K	K	Tapered bore (1:12 on diameter 22, 23, 30, 31, 32, 33, 39 series)
K	K30	K30	K30	Tapered bore (1:30 on diameter 40, 41, 42 series)
W4	W4	J26A		Mark high and low points of eccentricity on face of rings
W6R				Engineered surface thin film coating ES302 on roller contact surfaces
W20	W20	SY	E3	Outer ring with lubrication holes
W22	W22	T50H	S(a,b)	Special reduced-OD tolerance on outer rings
W25	W73			Outer ring counter-drilled lubrication holes
W31	W31		U22	Bearing inspected to certain quality-control requirements
W33	W33	S	E4	Standard lubrication holes and groove in outer ring
W40	ECD-	W209	g	Bearing made of carburizing grade steel
W40I	HA3, ECB-	W209B	g3	Inner ring made only of carburizing grade steel
W40R			g1	Roller made only of carburizing grade steel
W40E			g2	Outer ring made only of carburizing grade steel
W45A	VE 553			Tapped lifting holes in face of outer ring to facilitate lifting and handling
W47	VA414 (incl W800&W47)	T41B (incl W22&W47)		Inner ring with oversize bore
W84	W77	H44SA, H40	E42	Outer ring with standard lubrication holes plugged
W841	W	H40		Outer ring with no lubrication hole
W88				Special reduced bore tolerance on inner ring
W89				Inner ring with lubrication holes and lubrication groove
W94	W26	H40AB	E5	Inner ring lubrication holes
W507	W507	J26A	E4U22, E4P53	W31+W33+W45A
W509	W509 (W26+W31+W33)	S.H40A	E7U22	W31+W33+W94+W45A (where feasible)
W525	W525 (W31+W77)	S.H44S		W31+W33+W84+W45A (where feasible)
W800	VA405	T41A	U15, VS	Shaker screen modification (W22+W88+Radial internal clearance in upper 2/3 of range specified range)
W906A	C083HA3	T52BW.W209B		C08+W31+W33+W40I+W40R

Notes: <sup>(1)</sup> Timken offers differentiated solutions for many applications. This is only a partial list of common modification codes. <sup>(2)</sup> E suffix for SKF Explorer bearing available in some sizes. <sup>(3)</sup> E1 suffix for FAG X-life bearing available in some sizes. <sup>(4)</sup> Standard for all Timken SRBs. Data in this chart has been compiled to make the information as complete as possible. Timken cannot assume any responsibility for errors, omissions or accuracy of the published data. SKF Explorer bearing and FAG X-life bearing are registered trademarks of their respective companies.