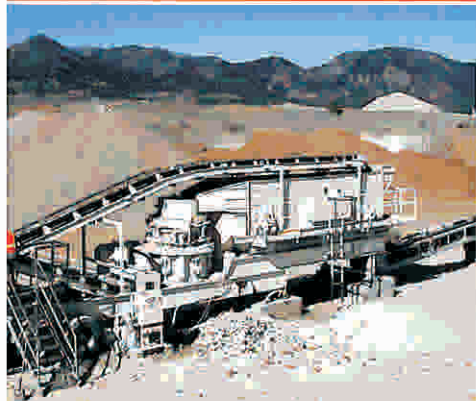
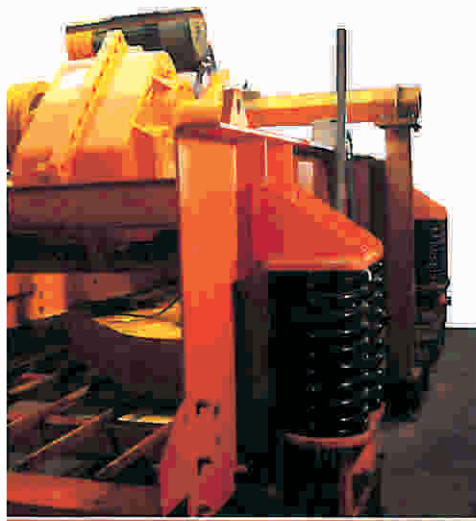


# TIMKEN

Where You Turn



## Timken® Spherical Roller Bearings

Providing a full line of high-performance bearings for industry throughout the world.



## For More Than A Century, Our Standards Have Set The Standard.

Around the world, companies turn to Timken for value and innovation, enabling them to reach peak performance. With expertise in materials science and precision manufacturing, we leverage more than 100 years of experience to help our customers solve their toughest technical problems in some of the world's most demanding applications.

### There Is A Difference.

Leveraging more than 60 years of design and application engineering expertise, Timken® spherical roller bearings feature all of the characteristics that have made Timken renowned – superior design, reliable performance and comprehensive technical support. Our spherical roller bearings are designed to manage high radial loads, even when misalignment, marginal lubrication, contamination, extreme speeds or critical application stresses are present. And through expertly designed critical dimensions such as roller and raceway contact geometry and topography, we're improving our customers' performance by helping reduce downtime, extend maintenance cycles and increase productivity. That's why industries such as power generation, oilfield, steel, aggregate, cement, mining and power transmission have turned to Timken for more than 60 years of design and application engineering

solutions for spherical roller bearings.

### Global Consistency.

We go beyond industry standards in maintaining our reputation for superior quality and performance. Our Timken Worldwide Quality Standards are implemented in every plant to ensure quality in design, and manufacture of Timken bearings is consistent, no matter where in the world they are produced. Our manufacturing facilities are not allowed to produce Timken-branded product until their quality and performance meet our global standards. It's that unwavering commitment to quality that preserves the integrity of the Timken brand ... and reinforces the confidence we've built among customers in providing consistently reliable spherical roller bearings.

### Product Breadth.

We offer a complete line of spherical roller bearing designs ranging from 25 millimeter bore to 1,500 millimeter bore (0.98 inch to 59.06 inches). Included in this broad portfolio are two fundamental designs: the Type CJ style and Type YM/YMB design.

Available in 25 millimeter bore to 200 millimeter bore (0.98-inch to 7.87 inches), Type CJ-style bearings offer higher load ratings for longer life and incorporate a stamped steel window-type cage. Similar to all spherical roller bearings, the CJ design compensates for dynamic and static misalignment and allows customers to use weldments for housing frames instead of complex castings.

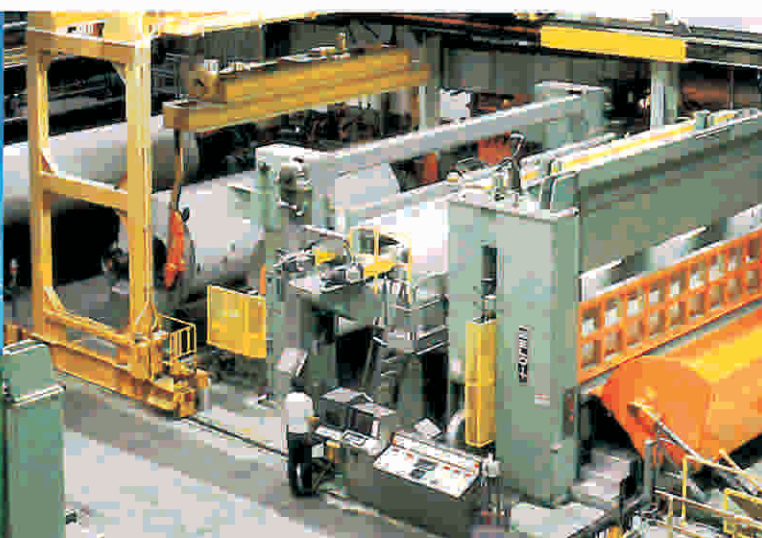


Type YM bearings feature precision-machined, roller-riding brass cages and are designed for harsh industrial environments.

These bearings offer higher load ratings for longer life. And for larger bore sizes, the Type YMB design incorporates an inner-ring, land-riding cage. The YM/YMB design is produced in sizes ranging from 30 millimeter bore to 1,500 millimeter bore (1.18 inches to 59.06 inches).

In addition to the CJ and YM/YMB designs, Timken spherical roller bearings can be ordered with several enhancements and modifications to extend life and improve performance in specific applications. For example,





large-bore spherical bearings sometimes operate below the bearing's published speed rating, causing the cage to push a non-rotating roller across the raceways. This sliding action breaks down lubrication film and can ultimately damage the bearing. To help protect the bearing components, our engineered surfaces coating minimizes skidding and sliding damage while withstanding small-particle contamination. In some cases, engineered surfaces can extend bearing life by up to five times standard designs, especially in demanding applications like paper and rolling mills.

Turn to the next page to see Timken's list of common modification codes available for spherical roller bearings. For more information, contact your Timken sales engineer.

#### **A Total Friction Management Solutions Approach.**

As customers' needs change and advanced motion control systems evolve, we continue to leverage our knowledge to offer a broader array of bearings, related products and integrated services to the industrial marketplace. This approach provides customers with cost-effective solutions, while also helping them achieve specific friction management objectives.

At Timken, we integrate bearings, lubrication, seals, repair services, maintenance practices, gears, condition monitoring and training to address a wide variety of customer needs. These value-added products, services and programs help keep overall systems running more efficiently so performance and productivity gains can be achieved.

#### **Call On Timken Today.**

Our sales and service engineers are available to host on-site seminars, assist with product design needs and conduct damage analysis for virtually any spherical bearing application. To learn more, contact your Timken sales engineer or visit [timken.com/spherical](http://timken.com/spherical).

# Common Spherical Roller Bearing Modifications

TIMKEN	SKF	FAG	NSK	TIMKEN GENERAL DEFINITION
CJ	CC, CJ	J	C, CD	Spherical with stamped steel cage
YM	M2	M	CAM, M	One-piece roller-riding machined brass cage
YMB	MC	MB	—	One-piece inner-riding piloted machined brass cage
C02	C02	T52BE	P53	Inner ring with P5 running accuracy, W4 (SKF does not include W4)
C02 C3	C023	C3.T52BE	—	Inner ring with P5 running accuracy, C3 RIC
C02 C4	C024	C4.T52BE	—	Inner ring with P5 running accuracy, C4 RIC
C04	C04	T52BN	P52	Outer ring with P5 running accuracy, W4 (SKF does not include W4)
C04 C3	C043	C3.T52BN	—	Outer ring with P5 running accuracy, C3 RIC
C04 C4	C044	C4.T52BN	—	Outer ring with P5 running accuracy, C4 RIC
C08	C08	T52BW.C02	P55	P5 running accuracy (C02 and C04)
C08 C3	C083	C3.T52BW	—	P5 running accuracy (C02 and C04), C3 RIC
C08 C4	C084	C4.T52BW	—	P5 running accuracy (C02 and C04), C4 RIC
C6	C6	—	—	Special RIC nonspecific
K	K	K	K	Tapered bore (1:12 on diameter 22, 23, 30, 31, 32, 33, 39 series)
K	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 coating on rollers to combat low lube or abrasive contamination
W8	—	—	—	Rings and rollers Timken® TDC™-coated
W20	W20	SY	E3	Outer ring with standard lubrication holes
W22	W22	700855	—	Special reduced OD tolerance on outer rings
W25	W73	—	—	Outer ring with counterdrilled lubrication hole
W31	W31	—	U22	Bearing inspected to certain quality control requirements
W33	W33	S	E4	Standard lubrication holes and groove in outer ring (FAG drops S from number for sizes larger than 315mm OD)
W33 W4	W503	S + J26A	—	Timken and FAG drop W33 W4 in conjunction with C08, W507
W33 W22 W31	W512 (W22 + W31 + W33)	S + 700855	—	Timken and FAG drop W31 in conjunction with C02, C04 and C08
W33 W94	W513 (W26 + W33)	S + H40A	E7	See other component descriptions
W37	—	—	—	Special surface finish
W40I	ECB (Prefix)	W209B	G3	Inner ring only made of carburizing-grade steel
W40R	—	—	—	Rollers only made of carburizing-grade steel
W45A	W61	—	—	Tapped lifting holes in face of outer ring
W47	—	—	—	Inner ring with oversize bore
W84	W77	H44S (H40)*	E42	Outer ring with standard lubrication holes plugged
W88	—	—	—	Special reduced bore tolerance on inner ring
W93	—	—	—	Inner ring with keyway in bore
W94	W26	H40A	E5	Inner ring lubrication holes and retainer face grooves
W502	W502 (W22 + W33)	S + 700855	—	W22, W33 and W45A (where feasible)
W507	W507 (W4 + W31 + W33)	S +	E4P53	W31, W33 and W45A (where feasible)
W509	W509 (W26 + W31 + W33)	S.H40A + ...	E7U22	W31, W33, W94 and W45A (where feasible)
W525	W525 (W31 + W77)	S.H44S (H40)*	—	W31, W33, W84 and W45A (where feasible)
W534	W534 (C08 + W507)	—	—	W507 and C08
W800	VA405	T41A	—	W22 + W88 + radial internal clearance in upper two-thirds of specified range (shaker screen modification)
W841	—	—	—	W31 + plain OD (continuous caster modification)
W886A	—	—	—	W33X + W37 + W45A (slow-speed, high-load applications)
W886B	—	—	—	W886 with metric tapped holes (slow-speed, high-load applications)
W906A	—	—	—	C02 + C04 + W31 + W33 + W40 + W40R (offered on tapered bore product; supercedes W507A, W534A)

\*FAG uses H40, which is a plain OD

Although all 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.

Timken®  
Shaker Screen  
Spherical Roller  
Bearing  
Interchange  
Guide

**TIMKEN**  
Where You Turn

**Timken® Spherical  
Roller Bearings For Shaker Screens**

Timken® spherical roller bearings are ideally suited for shaker screen applications because they are manufactured from the finest steels using the highest quality standards. In fact, our standard bearing material minimizes the impact of debris in harsh environments, like those commonly found in the aggregate industry. At the core of the design, Timken offers a fully-machined brass cage. The benefits of the brass cage are numerous, including greater durability and cooler operation. New surface finishing techniques on the roller and raceway surfaces further enhance these benefits.

**Features**

- High-quality steel
- Enhanced roller surface finishes
- Enhanced race surface finishes
- High-strength brass material
- Centrifugally cast, fully-machined Type YM or YMB cage

**Benefits**

- Enhanced cage design provides lower running temperatures
- Optimized roller end geometry improves roller guidance
- Improved roller stability is provided by cage wrap.



## 23 Series

MM	TIMKEN PART NUMBER	FAG	SKF	NSK	NTN
40	22308 YM W33 W900 C4	22308 EAS.MA.T41A	22308 E/VA405	22308 HE4C4U15-VS	22308 CVS2
45	22308 YM W33 W800 C4	22309 EAS.MA.T41A	22309 E/VA405	22309 HE4C4U15-VS	22309 CVS2
50	22310 YM W33 W800 C4	22310 EAS.MA.T41A	22310 E/VA405	22310 HE4C4U15-VS	22310 CVS2
55	22311 YM W33 W800 C4	22311 EAS.MA.T41A	22311 E/VA405	22311 CAME4C4U15-VS	22311 BVS2
60	22312 YM W33 W800 C4	22312 EAS.MA.T41A	22312 E/VA405	22312 CAME4C4U15-VS	22312 BVS2
65	22313 YM W33 W800 C4	22313 EAS.MA.T41A	22313 E/VA405	22313 CAME4C4U15-VS	22313 BVS2
65	22313 YM W800 C4	-	-	-	-
70	22314 YM W33 W900 C4	22314 EAS.MA.T41A	22314 E/VA405	22314 CAME4C4U15-VS	22314 UAVS2
70	22314 YM W800 C4	-	-	-	-
75	22315 YM W33 W800 C4	22315 EAS.MA.T41A	22315 EJA/VA405	22315 CAME4C4U15-VS	22315 UAVS2
75	22315 YM W800 C4	-	-	-	-
75.054	22315 YM W47 W22 C3	22315 EAS.MA.T41B	22315 EJA/VA414 *	-	-
80	22316 YM W33 W800 C4	22316 EAS.MA.T41A	22316 EJA/VA405	22316 CAME4C4U15-VS	22316 UAVS2
85	22317 YM W33 W800 C4	22317 EAS.MA.T41A	22317 EJA/VA405	22317 CAME4C4U15-VS	22317 UAVS2
85	22317 YM W800 C4	-	-	-	-
90	22318 YM W33 W800 C4	22318 EAS.MA.T41A	22318 EJA/VA405	22318 CAME4C4U15-VS	22318 UAVS2
80	22318 YM W810 C4	-	-	-	-
95	22319 YM W33 W800 C4	22319 EAS.MA.T41A	22319 EJA/VA405	22319 CAME4C4U15-VS	22319 UAVS2
95	22319 YM W800 C4	-	-	-	-
95.067	22319 YM W47 W22 C3	22319 EAS.MA.T41B	22319 EJA/VA414 *	-	-
80	22319 YM W810 C4	545173.C3.F80	-	-	-
100	22320 YM W33 W800 C4	22320 EAS.MA.T41A	22320 EJA/VA405	22320 CAME4C4U15-VS	22320 UAVS2
110	22322 YM W33 W800 C4	22322 EAS.MA.T41A	22322 EJA/VA405	22322 CAME4C4U15-VS	22322 UAVS2
110	22322 YM W800 C4	-	-	-	-
110.071	22322 YM W47 W22 C3	22322 EAS.MA.T41B	22322 EJA/VA414 *	-	-
100	22322 YM W810 C4	521097.C3.F80	-	-	-
120	22324 YM W33 W800 C4	22324 EAS.MA.T41A	22324 CCJA/W33VA405	22324 CAME4C4U15-VS	22324 UAVS2
130	22326 YM W33 W800 C4	22326 EAS.MA.T41A	22326 CCJA/W33VA405	22326 CAME4C4U15-VS	22326 UAVS2
140	22328 YM W33 W800 C4	22328 EAS.MA.T41A	22328 CCJA/W33VA405	22328 CAME4C4U15-VS	22328 UAVS2
140	22328 YM W800 C4	-	-	-	-
140.076	22328 YM W33 W47 W22 C3	22328 EAS.MA.T41B	22328 CCJA/W33VA414 *	-	-
150	22330 YM W33 W800 C4	22330 EAS.MA.T41A	22330 CCJA/W33VA405	22330 CAME4C4U15-VS	22330 UAVS2
160	22332 YM W33 W800 C4	22332 A.MA.T41A	22332 CCJA/W33VA405	22332 CAME4C4U15-VS	22332 UAVS2
160.091	22332 YM W33 W47 W22 C4	22332 EAS.MA.T41B	22332 CCJA/W33VA414 *	-	-
170	22334 YMB W33 W800 C4	22334 A.MA.T41A	22334 CCJA/W33VA405	22334 CAME4C4U15-VS	22334 UAVS2
180	22336 YMB W33 W800 C4	22336 A.MA.T41A	22336 CCJA/W33VA405	22336 CAME4C4U15-VS	22336 UAVS2
190	22338 YMB W33 W800 C4	22338 A.MA.T41A	22338 CCJA/W33VA405	22338 CAME4C4U15-VS	22338 UAVS2
200	22340 YMBW33W45AW800C4	22340 A.MA.T41A	22340 CCJA/W33VA405	22340 CAME4C4U15-VS	22340 UAVS2

## 33 Series

MM	TIMKEN PART NUMBER	FAG	SKF	NSK	NTN
80	23318 YM W33 W800 C4	23318 AS.MA.T41A	453318 EJA/VA405	-	23318 BVS2
110	23322 YM W33 W800 C4	23322 AS.MA.T41A	453322 EJA/VA405	23322 CAME4C4U15-VS	-
100	23322 YM W810 C4	532889.C3.F80	-	-	-
110	23322 YM W800 C4	-	-	-	-
120	23324 YM W33 W800 C4	23324 AS.MA.T41A	453324 CCJA/W33VA405	23324 CAME4C4U15-VS	23324 BVS2
120	23324 YM W800 C4	-	453328 M2/W22	-	-
120	23326 YM W810 C4	533520.C3.F80	453322 VAA	-	-
130	23326 YM W33 W800 C4	23326 AS.MA.T41A	453326 CCJA/W33VA405	23326 CAME4C4U15-VS	23326 BVS2
130	23326 YM W33 W48 C4	545172.C3.F80	-	-	-
140	23328 YM W33 W800 C4	23328 AS.MA.T41A	453328 CCJA/W33VA405	23328 CAME4C4U15-VS	23328 BVS2
140	23328 YM W800 C4	-	-	-	-
140.076	23328 YM W33 W47 W22 C3	23328 AS.MA.C3.T41B	453328 CCJA/W33VA414	-	-
150	23330 YMB W33 W800 C4	23330 A.MA.T41A	453330 CCJA/W33VA405	23330 CAME4C4U15-VS	23330 BVS2
100	23332 YMB W33 W800 C4	23332 A.MA.T41A	453332 CCJA/W33VA405	-	23332 BVS2
160	23332 YMB W800 C4	-	-	-	-
160.091	23332 YMB W33 W47 W22 C4	23332 EAS.MA.T41B	453332 CCJA/W33VA414	-	-

### NOTES:

\*SKF: VA414 = VA405 + SPECIAL ALLIS-CHALMERS BORE DIMENSIONS

### TIMKEN MODIFICATION CODES:

YM = ONE-PIECE MACHINED BRONZE CAGE  
W33 = LUBE GROOVE AND 3 HOLES IN OUTER RING  
W800 = "SCREEN BEARING MOD" - REDUCED BORE AND OD TOLERANCES; UPPER 2/3 OF SPECIFIED RIC (NORMALLY C4)  
W47 = OVERSIZED BORE (ALLIS-CHALMERS SPECIAL)  
W810 = UNDERSIZED BORE (CEDAR RAPIDS - FORMERLY IDWA MFG - SPECIAL)  
W22 = REDUCED OD TOLERANCE  
W49 = OUTER RING WITH OVERSIZED OD  
W45A = TAPPED HOLES IN THE FACE OF THE OUTER RING

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Precision Components • Lubrication •  
Seals • Remanufacture and Repair •  
Industrial Services  
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Timken®  
Spherical  
Roller Bearing  
Nomenclature  
and Part  
Numbers

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**2 23 22 K YM W33 C3**

**2-Row SRB**

**Dimension Series**

Spherical roller bearings are broken down into a series based on their width (0, 1, 2, 3, 4) and outside diameter (8, 9, 0, 1, 2, 3).

**Bore Code**

**Small and medium bore sizes**

Bore code  $\times 5$  = bore size in mm  
(ex., BORE = 22  $\times 5$  = 110mm)

**Large bore sizes**

Bore code = bore size in mm  
Example: 232/600YMBW507C08  
(ex., BORE = 600mm)

**Bore Style**

**Two bore styles**

For cylindrical bore, there is no designation in the part description.

For tapered bore, a K will appear in the part description.

**Mod. Codes**

**Cage**

**RIC**

Part Number	Series									
	21300	22200	22300	23000	23100	23200	23300	23900	24000	24100
21305	22205	22308	23022	23120	23218	23318	23926	24020	24122	
21306	22206	22309	23024	23122	23220	23320	23928	24022	24124	
21307	22207	22310	23026	23124	23222	23322	23932	24024	24126	
21308	22208	22311	23028	23126	23224	23324	23934	24026	24128	
21309	22209	22312	23030	23128	23226	23326	23936	24028	24130	
21310	22210	22313	23032	23130	23228	23328	23938	24030	24132	
21311	22211	22314	23034	23132	23230	23330	23940	24032	24134	
21312	22212	22315	23036	23134	23232	23332	23944	24034	24136	
21313	22213	22316	23038	23136	23234	23338	23948	24036	24138	
21314	22214	22317	23040	23138	23236	23340	23952	24038	24140	
21315	22215	22318	23044	23140	23238		23956	24040	24144	
21316	22216	22319	23048	23144	23240		23960	24044	24148	
21317	22217	22320	23052	23148	23244		23964	24048	24152	
21318	22218	22322	23056	23152	23248		23968	24052	24156	
	22219	22324	23060	23156	23252		23972	24056	24160	
	22220	22326	23064	23160	23256		23976	24060	24164	
	22222	22328	23068	23164	23260		23980	24064	24168	
	22224	22330	23072	23168	23264		23984	24068	24172	
	22226	22332	23076	23172	23268		23988	24072	24176	
	22228	22334	23080	23176	23272		23992	24076	24180	
	22230	22336	23084	23180	23276		23996	24080	24184	
	22232	22338	23088	23184	23280		239/500	24084	24188	
	22234	22340	23092	23188	23284		239/530	24088	24192	
	22236	22344	23096	23192	23288		239/560	24092	24196	
	22238	22348	230/500	23196	23292		239/600	24096	241/500	
	22240		230/530	231/500	23296		239/630	240/500	241/530	
	22244		230/560	231/530	232/500		239/670	240/530	241/560	
	22248		230/600	231/560	232/530		239/710	240/560	241/600	
	22252		230/630	231/600	232/560		239/750	240/600	241/670	
	22256		230/670	231/630	232/600		239/800	240/630	241/710	
			230/710	231/670	232/670		239/850	240/670	241/750	
			230/750	231/800	232/710		239/900	240/710	241/900	
			230/800		232/750		239/950	240/750	241/950	
			230/850		232/800		239/1060	240/800		
			230/900		232/900		239/1180	240/850		
			230/950		232/1060			240/900		
								240/950		
								240/1000		
								240/1060		
								240/1120		

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