

Timken® Machine Tool Bearings

Ball Bearings

Angular Contact/Deep Groove Ball Bearings

Ultra-Light ISO 19 Series	2(3)MM9300WI 2(3)MMV9300HX	15° / 25° contact angle, low shoulder on non-thrust side of outer ring 15° / 25° contact angle, low shoulder on non-thrust side of both inner and outer rings, high-speed design
Extra-Light ISO 10 Series	2(3)MM9100WI 2(3)MMV9100HX 2(3)MMV99100WN MM9100K	15° / 25° contact angle, low shoulder on non-thrust side of outer ring 15° / 25° contact angle, low shoulder on non-thrust side of both inner and outer rings, high-speed design 15° / 25° contact angle, low shoulder on non-thrust side of both inner and outer rings Deep-groove construction with high shoulder on both inner and outer rings
Light ISO 02 Series	2(3)MM200WI MM200K	15° / 25° contact angle, low shoulder on non-thrust side of outer ring Deep-groove construction with high shoulder on both inner and outer rings
Medium ISO 03 Series	2(3)MM300WI MM300K	15° / 25° contact angle, low shoulder on non-thrust side of outer ring Deep-groove construction with high shoulder on both inner and outer rings
Options Available		HX high-speed sealed design • Hybrid designs with ceramic balls Special contact angles • Universally ground matched sets • Range of preloads

Ball Screw Support Bearings

	MM9300	Non-separable design with 60° contact angle, inch series.
	MMBS	Non-separable design with 60° contact angle, metric series.
	BSBU	Flanged cylindrical cartridge unit with duplex or quadruplex bearing set
	BSPB	Pillow block housed unit with duplex or quadruplex bearing set
	MMN	Sealed double-row cartridge style with 60° contact angle
	MMF	Sealed double-row flanged style with 60° contact angle
Options Available		Metric and inch sizes • Matched sets • Range of preloads

Tapered Roller Bearings

	TS	Single row comprised of inner race assembly and outer race
	TSF	Single row with flanged outer ring to facilitate axial location and seat alignment
	TDO	Double outer race typically supplied as a complete, pre-set assembly
	TSM/TSMR	Single row with axial oil provision for high speeds
	HR	Hydra-Rib™ design with preload adjustment device
	TXR	Compact crossed roller bearing with two sets of races and rollers at right angles
Options Available		Metric and inch sizes • Tighter precision tolerances

Other Products

Ultra-high speed spindle grease is specifically designed for the precision and high-speed bearings typically used in machine tools.

Engineered surfaces improve wear and fatigue resistance for bearings and other components.

Condition monitoring products and services enable you to stay on top of machine performance and quickly detect potential problems.



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Where You Turn

Bearings • Steel • Precision Components • Lubrication • Seals • Remanufacture and Repair • Industrial Services
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Where You Turn

Where You Turn for Machine Tool Solutions



Solutions that drive performance

When it comes to improving machine tool performance, Timken leads the industry with an unmatched offering of friction management solutions. Our ball, tapered and needle roller bearings and related products and services set the standard in high-speed spindles, ball screws, rotary tables and other demanding applications.

Backed by global Timken innovation and a long machine tool heritage, we focus on enhancing customer performance and productivity through our product technology and application experience. With renowned Timken quality and a commitment to precision that exceeds industry standards, we continue to develop bearings that support the drive for higher speeds, maximum resolution, accuracy and repeatability.

Unmatched Product Breadth

Timken offers a broad range of rolling bearings and related products and services to meet worldwide machine tool needs. Our portfolio includes specialized tapered roller and ball bearings, produced to the precision classes that deliver the operating characteristics necessary for the highest performance. Timken® bearings meet or exceed application needs for rotational accuracy, consistency and rigidity. Our total friction management approach also includes lubrication, condition monitors and other products “around the bearing.”

Timken® tapered roller bearings available in precision classes include the single-row TS and TSF types, as well as the variable-preload Hydra-Rib™ bearing, the high-speed, oil-injected TSMA/TSMR bearings and the compact TXR crossed roller bearing.

Timken® machine tool ball bearings are manufactured to ABEC 7 (ISO P4) and ABEC 9 (ISO P2) precision classes. They are available in 15-degree and 25-degree contact angles, as well as custom configurations. With a variety of internal geometries (WI, WO, WN and K), Timken has a design to meet specific application requirements with either steel or ceramic balls. The HX and sealed HXV bearings deliver high-speed benefits with unique ball complements and raceway geometries.

Timken® Fafnir® ball screw support bearings with steep contact angles, available in housed units, provide high levels of axial stiffness for the demands of servo-controlled machinery. Sealed double-row flanged (or cartridge) units simplify installation.



Productive Services

Timken offers industry-leading service to customers around the globe. This includes custom bearing modifications and the repair and maintenance of spindle systems. We go beyond the bearing to help you get the best machine performance.

Our experienced engineers help OE manufacturers optimize designs and provide analytical assistance for the development of new machines. We supply technical and testing support so bearings yield optimum performance for specific operating environments. Machine tool users trust Timken to have the right answers and support to meet production challenges and maximize the performance and life of our full product range.

Quick change program can perform cost-effective modifications and minor rework procedures to your machine tool bearings to extend operational and application flexibility.

Spindle repair services help optimize performance and reduce costs through a range of reconditioning specialties that can return your used spindle to like-new condition.

Continuing Innovation

Timken's leadership in metallurgical and power transmission technologies, together with our machine tool expertise, continues to create advanced solutions. Our innovations range from the unique Hydra-Rib bearing with adjustable preload to the first hybrid ceramic tapered roller bearing and the latest high-speed, sealed spindle ball bearing designs. As the only bearing manufacturer to produce its own steels, we have unparalleled capabilities to develop specialized alloys for wear resistance and extended service life. With Timken's strong industry commitment, you can rely on us to keep applying our global resources to solve future performance challenges.

Precision that Goes Beyond the Standards

The performance of a super precision ball bearing is not completely defined by the ABEC/ISO classes. There are many performance-affecting design parameters left up to the bearing manufacturer.

- Raceway curvature and uniformity
- The balls' conformance to sphericity
- Race and ball surface finish
- Waviness of contact areas
- Preload offset tolerance
- Cleanliness
- Calibration of envelope dimensions
- Matching of bearings within a set
- Cage design and material
- Lubricant
- Radial play
- Contact angle and precision of ball element.

These parameters have a direct impact on the service life and performance of a bearing. Despite the lack of a comprehensive industry standard, all Timken MM, MMV, and MMX super precision ball bearings comply with strict controls over these non-specified parameters to provide premium performance.

Expanding Our Value

As a Timken customer, you receive an uncompromising standard of quality across the broadest range of bearings and related products. Our core offering is complemented by a growing line of friction management solutions including lubricants, single-point lubricators, maintenance tools, safety equipment, condition monitoring systems and repair services that help keep operations running smoothly.

