TIMKEN 15123

Timken 15123 Tapered Roller Bearing Instruction Manual

Model: 15123

Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Timken 15123 Tapered Roller Bearing Inner Race Assembly Cone. This component is designed to be paired with a compatible outer ring (cup, sold separately) to form a complete single tapered roller bearing. It is engineered to support both radial and axial loads in various high-load, moderate-speed applications.

The Timken 15123 cone assembly is constructed from Timken's high-alloy steel, ensuring durability, heat tolerance, and resistance to deformation under heavy loads. Its stamped steel cage maintains proper roller spacing, contributing to reduced friction, vibration, and noise during operation.

Figure 1: Timken 15123 Tapered Roller Bearing Inner Race Assembly Cone. This image shows the complete inner race assembly, highlighting its robust construction and the arrangement of the tapered rollers within the cone.

Setup and Installation

Proper setup and installation are crucial for the optimal performance and longevity of your Timken 15123 bearing.

1. Component Pairing

The 15123 is a single cone (inner ring) assembly. It must be paired with a compatible single cup (outer ring), which is sold separately, to form a complete tapered roller bearing unit. Ensure that the chosen cup is designed to match the 15123 cone for proper fit and function.

2. Lubrication

This bearing assembly features an open design, which requires lubrication to be applied in place during installation. Use a

high-quality lubricant suitable for tapered roller bearings and the specific operating conditions (temperature, load, speed) of your application. Refer to your equipment's manufacturer guidelines for lubricant type and quantity.

3. Mounting

Tapered roller bearings are generally mounted in opposing pairs on a shaft. This configuration allows for even distribution of both radial and axial loads. Follow standard industry practices and equipment-specific instructions for pressing the cone onto the shaft and the cup into the housing. Accurate adjustments during mounting are essential for proper bearing preload and clearance.

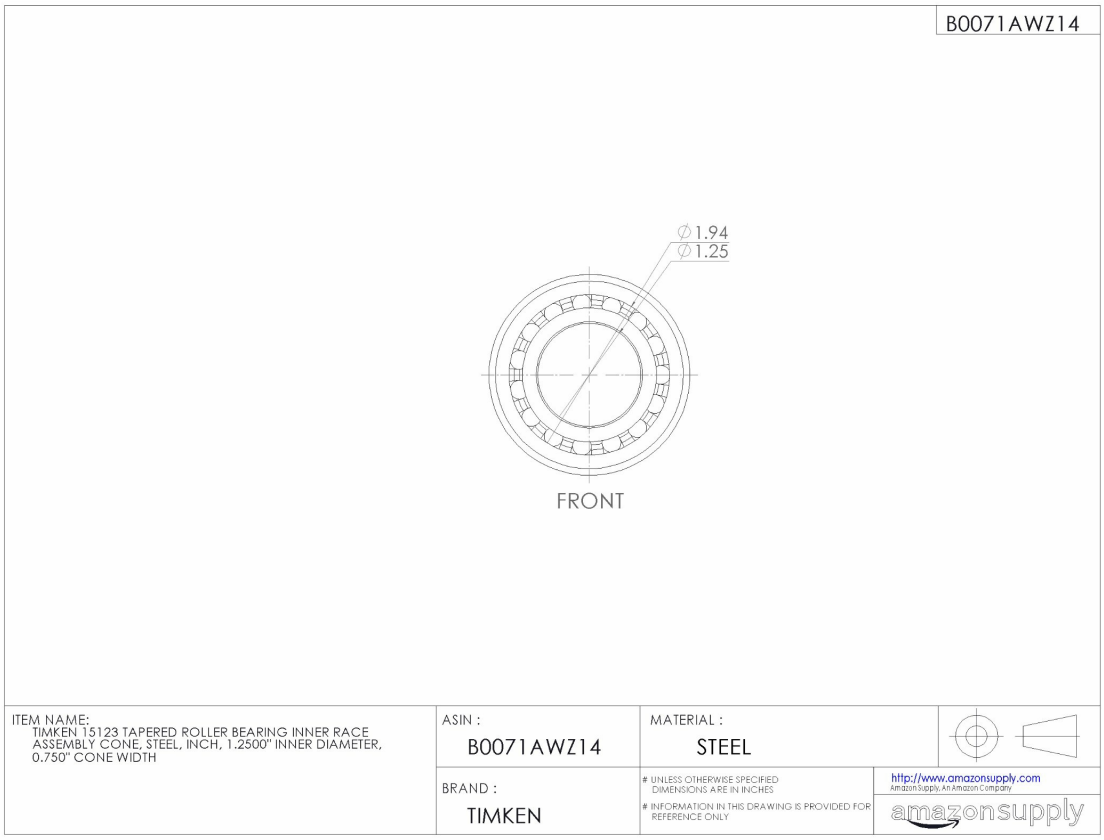


Figure 2: Front view technical drawing of the Timken 15123 bearing. This diagram provides key dimensions for the inner diameter and overall width from a frontal perspective, crucial for precise installation.

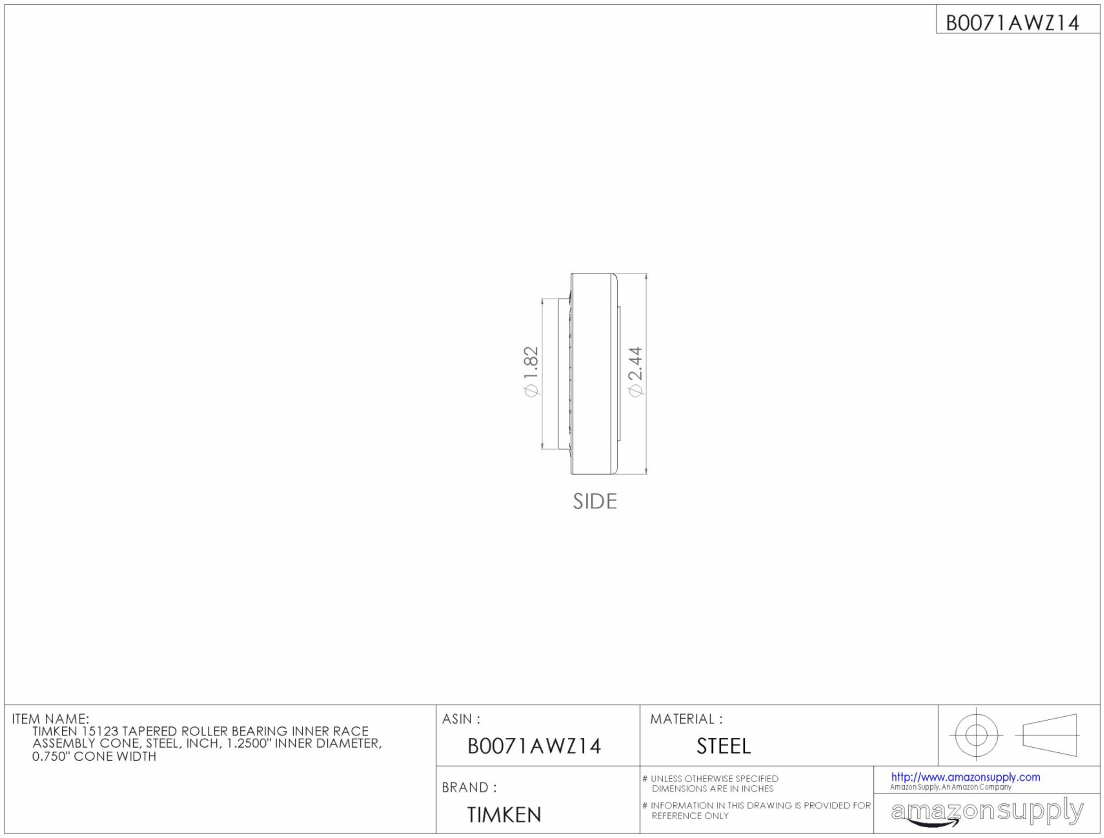


Figure 3: Side view technical drawing of the Timken 15123 bearing. This diagram illustrates the bearing's profile and height, aiding in spatial planning and fitment checks.

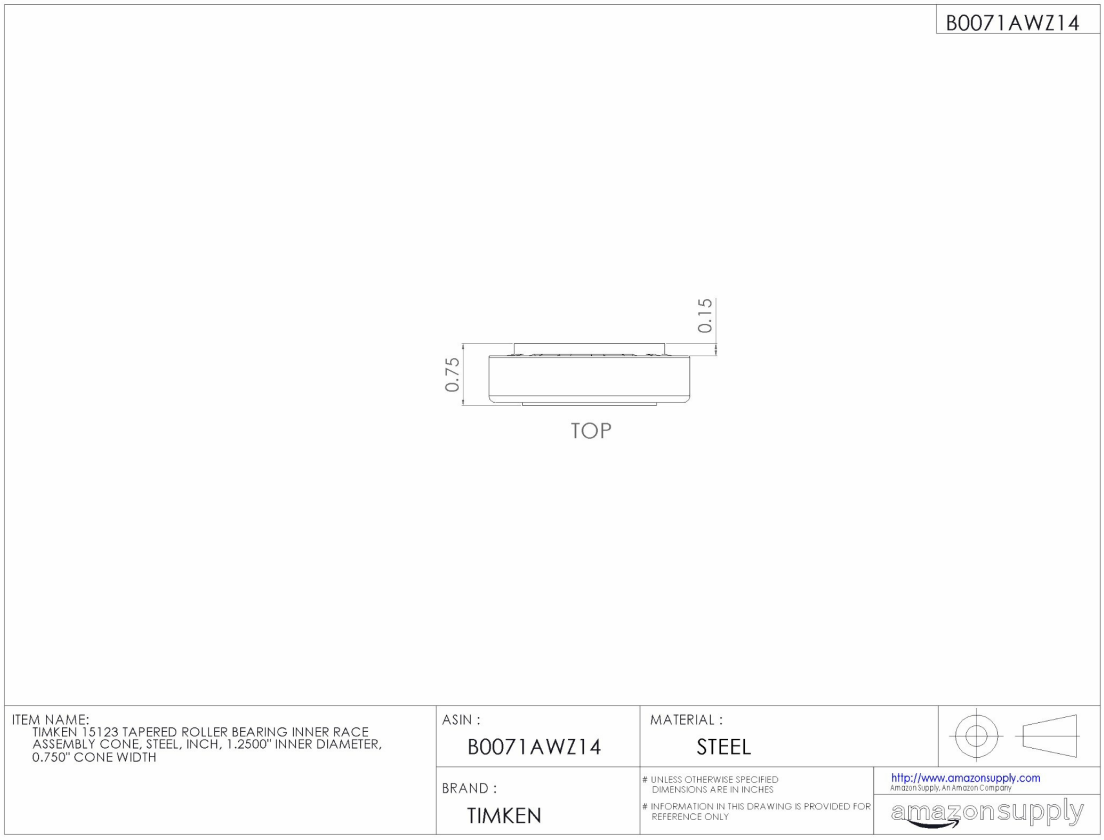


Figure 4: Top view technical drawing of the Timken 15123 bearing. This diagram provides a top-down perspective, showing the cone width and other critical dimensions for assembly verification.

Operating Principles

The Timken 15123 tapered roller bearing utilizes rolling elements to maintain separation between moving parts, thereby reducing rotational friction and supporting both radial and axial loads.

- **Load Support:** This bearing is specifically designed to handle high radial loads (perpendicular to the shaft) and significant axial loads (parallel to the shaft). The tapered design allows for efficient distribution of these combined forces.
- **Temperature Range:** The cone assembly is engineered to operate effectively within a temperature range of -54 to 120 degrees C (-65 to 250 degrees F) without significant contraction or expansion.
- **Friction Reduction:** The stamped steel cage precisely spaces the rollers, preventing contact between them. This design minimizes friction, vibration, and noise during operation, contributing to smooth and efficient performance.
- **Applications:** Suitable for high-load, moderate-speed applications such as automotive axle systems, conveyor systems, and heavy-duty industrial machinery in sectors like mining, construction, and agriculture.

Maintenance

Regular maintenance is essential to maximize the lifespan and performance of your Timken 15123 bearing.

1. Reapplication of Lubrication

As an open bearing design, periodic reapplication of appropriate lubricant is necessary. The frequency of re-lubrication depends on the operating conditions, such as speed, load, temperature, and environmental factors. Consult your equipment's maintenance schedule or a bearing lubrication guide for specific intervals.

2. Inspection

Regularly inspect the bearing for signs of wear, corrosion, or damage. Look for unusual noise, excessive heat, or vibration during operation, which may indicate a need for inspection or replacement. Ensure that the bearing housing is free from debris and contaminants.

3. Cleaning

If the bearing needs to be removed for cleaning, use appropriate solvents and ensure all components are thoroughly dried before re-lubrication and reassembly. Avoid using high-pressure water or air directly on the bearing, as this can force contaminants into the bearing or remove lubricant.

Troubleshooting

While Timken bearings are designed for reliability, issues can arise. Here are common symptoms and potential causes:

Symptom	Possible Cause	Action

Symptom	Possible Cause	Action
Excessive Noise / Vibration	◦ Insufficient or incorrect lubrication ◦ Improper installation (e.g., misalignment, incorrect preload) ◦ Contamination ◦ Wear or damage to bearing components	◦ Check lubrication; re-lubricate or replace if necessary. ◦ Verify installation alignment and preload. ◦ Inspect for contaminants; clean and re-lubricate. ◦ Inspect bearing for damage; replace if worn.
Overheating	◦ Excessive or insufficient lubrication ◦ Overload conditions ◦ Incorrect bearing clearance or preload ◦ Contamination	◦ Adjust lubrication quantity/type. ◦ Reduce load if possible or verify bearing capacity. ◦ Re-evaluate installation and adjust. ◦ Clean and re-lubricate.
Premature Failure	◦ Improper installation ◦ Inadequate lubrication ◦ Operating beyond design limits (speed, load, temperature) ◦ Corrosion or contamination	◦ Review installation procedures. ◦ Establish proper lubrication schedule and type. ◦ Ensure operating conditions are within specifications. ◦ Implement better sealing or environmental protection.

Specifications

Key specifications for the Timken 15123 Tapered Roller Bearing Inner Race Assembly Cone:

Bearing Number: 15123

Brand: TIMKEN

Material: Alloy Steel

Inner Diameter: 1.2500 inches (as per product title)

Cone Width: 0.750 inches (as per product title)

Operating Temperature Range: -54 to 120 degrees C (-65 to 250 degrees F)

Item Weight: 0.4 Pounds

Package Dimensions: 2.4 x 2.4 x 1 inches

Standards Met: ABMA 19.2, ISO 355, ISO 492, ISO 720

Features: Single cone design, supports radial and axial loads, stamped steel cage for roller spacing, open configuration for lubrication.

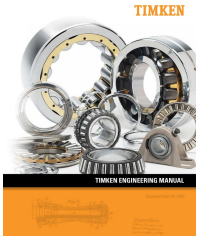
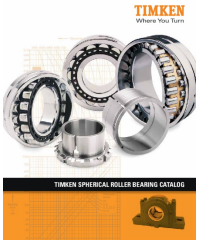
Warranty and Support

Specific warranty details for the Timken 15123 Tapered Roller Bearing are not provided in this document. For information regarding product warranty, technical support, or service, please contact Timken directly through their official website or authorized distributors.

Manufacturer: Timken Company

Website: www.timken.com (Please note: This is a general link and may not lead directly to support for this specific product.)

Related Documents - 15123

	Timken Engineering Manual: Comprehensive Guide to Bearing Selection and Application This Timken Engineering Manual provides in-depth information on bearing types, selection processes, fitting practices, operating conditions, lubrication, and storage. Essential resource for engineers and professionals in mechanical power transmission.
	Timken Bearing Specification Guide: Comprehensive Catalog for Automotive & Industrial Applications The official Timken Bearing Specification Guide provides detailed information on a wide range of bearings, seals, and hub assemblies. Essential for identifying and selecting the correct components for automotive and industrial applications.
	Timken® SNT Plummer Block Catalog: Industrial Bearing Solutions Explore the Timken® SNT Plummer Block Catalog, featuring robust industrial bearing solutions. Discover detailed specifications, installation guides, and application information for high-performance bearings designed for demanding environments.
	Timken® SAF Split-Block Mounted Spherical Roller Bearing Catalog Comprehensive catalog detailing Timken® SAF Split-Block Mounted Spherical Roller Bearings, including engineering specifications, mounting instructions, lubrication guidelines, and product dimensions for various series and applications.
	Timken SAF Split-Block Housed Units Catalog and Technical Guide Explore the Timken SAF Split-Block Housed Units Catalog, featuring detailed specifications, engineering data, mounting instructions, and lubrication guides for high-capacity spherical roller bearings. Essential for industrial applications.
	Timken Spherical Roller Bearing Catalog: Engineering, Applications, and Specifications This Timken Spherical Roller Bearing Catalog provides detailed engineering information, product specifications, typical applications, and handling guidelines for industrial bearings. Discover solutions for heavy loads and harsh environments, including bearing types, installation practices, and lubrication advice.