TIMKEN 515020

Timken 515020 Axle Bearing and Hub Assembly User Manual

Model: 515020 | Brand: TIMKEN

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your Timken 515020 Axle Bearing and Hub Assembly. This high-quality component is designed to provide a tight fit to the wheels, transmit power efficiently, and enhance overall vehicle performance and reliability. It is specifically designed for Ford Excursion (2000-2005), F-250 (1999-2004), and F-350 (1999-2004) models.

What's in the Box

- Timken 515020 Axle Bearing and Hub Assembly
- Pre-installed inner needle bearing
- 4 mounting studs (loose, for installation into knuckle)
- 8 pre-mounted wheel studs M14 x 2.0
- New yellow hub O-ring
- ABS sensor and accompanying wire/mount

Figure 1: The Timken 515020 Axle Bearing and Hub Assembly, shown with the main unit, four loose mounting studs, and a yellow O-ring. This image provides a comprehensive view of the product and its primary components.

2. Setup and Installation

Proper installation is crucial for the longevity and performance of your new axle bearing and hub assembly. It is recommended that installation be performed by a qualified mechanic or an individual with appropriate automotive repair experience.

Pre-Installation Checks

- Verify vehicle compatibility: This assembly is compatible with Ford Excursion (2000-2005), F-250 (1999-2004), and F-350 (1999-2004).

- Inspect all components for shipping damage.
- Ensure the inner needle bearing is adequately greased before installation. Apply a high-quality wheel bearing grease, forcing it into all needles and rotating the bearing to ensure even distribution.
- Confirm the lug stud thread pitch (M14 x 2.0) matches your vehicle's requirements.
- Consider replacing related components such as U-joints, outer axle seals (e.g., SKF 28600), and spindle hub oil seals (e.g., part number 710413) during the installation process for comprehensive maintenance.

Installation Steps (General Guidelines)

1. Safely lift and support the vehicle. Remove the wheel and brake caliper assembly.
2. Remove the old hub and bearing assembly. This typically involves disconnecting the ABS sensor wire and unbolting the assembly from the knuckle.
3. Clean the mounting surface on the knuckle thoroughly.
4. Install the four loose mounting studs into the knuckle if they are not pre-installed.
5. Carefully position the new Timken hub and bearing assembly onto the knuckle, ensuring the yellow O-ring is correctly seated to prevent leaks.
6. Secure the assembly with the appropriate fasteners, torquing them to the manufacturer's specifications (refer to your vehicle's service manual for exact torque values).
7. Connect the new ABS sensor wire. Ensure the plastic clip is secure. If the clip is damaged, retain and reuse the clip from your old unit if it is in good condition.
8. Reinstall the brake caliper assembly and wheel.
9. Lower the vehicle and perform a test drive to ensure proper function and no abnormal noises.

Figure 2: An angled view of the hub assembly, highlighting the mounting points and the integrated ABS sensor wiring. This perspective helps in understanding the component's orientation during installation.

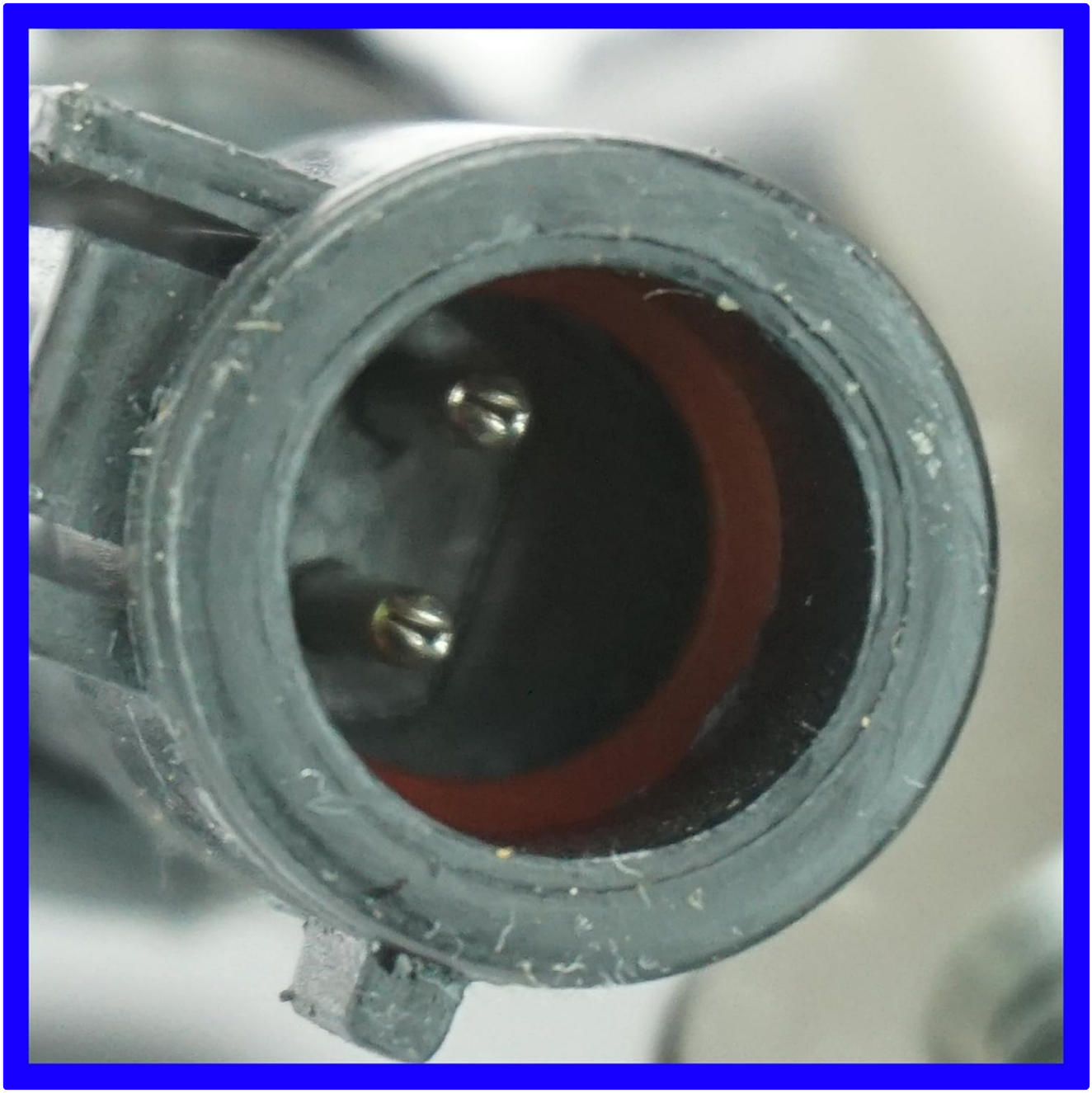

Figure 3: A detailed close-up of the ABS sensor connector. This connector ensures proper communication with the vehicle's anti-lock braking system.

3. Operating Instructions

Once correctly installed, the Timken 515020 Axle Bearing and Hub Assembly operates automatically as part of your vehicle's drivetrain. It is designed to provide a smooth and reliable ride by ensuring a tight fit to the wheels and efficiently transmitting power.
No specific user interaction is required for the operation of the bearing assembly itself. Its function is integral to the vehicle's movement and braking systems.

4. Maintenance

Regular maintenance helps extend the lifespan of your Timken Axle Bearing and Hub Assembly and ensures continued optimal performance.

Lubrication

- The inner needle bearing requires lubrication. While pre-greased, it is advisable to verify and add high-quality

wheel bearing grease during installation.

- Ford's recommended lubrication schedule for the needle bearing is typically every 60,000 miles. This procedure often requires the hub unit bearing to be removed. Consult your vehicle's official service manual for detailed instructions and exact intervals.
- Some users may install a grease fitting into the ABS sensor hole for easier future lubrication. This is an aftermarket modification and should be done with caution and proper knowledge.

Inspection

- Periodically inspect the hub assembly for any signs of wear, damage, or excessive play.
- Listen for unusual noises (e.g., humming, grinding) that may indicate bearing wear.
- Check for any leaks around the seals.

5. Troubleshooting

If you experience issues with your axle bearing and hub assembly, consider the following common problems and potential solutions:

Problem	Possible Cause	Solution
Abnormal noise (humming, grinding)	Worn or damaged bearing, insufficient lubrication.	Inspect the bearing for play. If worn, replacement is necessary. Ensure proper lubrication of the inner needle bearing.
Excessive wheel play or looseness	Loose mounting bolts, worn bearing, improper installation.	Check torque of mounting bolts. Re-evaluate installation steps. If bearing is worn, replace the assembly.
ABS light illuminated or ABS malfunction	Damaged ABS sensor or wiring, improper sensor connection.	Inspect the ABS sensor and its wiring for damage. Ensure the connector is fully seated. Replace if sensor is faulty.
Incorrect lug stud thread pitch	Incorrect part ordered for vehicle.	Verify the correct part number (515020 has M14 x 2.0 studs). Ensure compatibility before installation.
Missing seals (axle shaft, spindle hub oil)	These seals are typically sold separately and are not included with the hub assembly.	Purchase necessary seals (e.g., SKF 28600, 710413) separately before beginning installation.

6. Specifications

Feature	Detail
Brand	TIMKEN
Model Number	515020
Bearing Type	Axle Bearing
Compatible Lubricant	Grease
Item Weight	23.4 Pounds

Feature	Detail
Product Dimensions (L x W x H)	9.4 x 9.4 x 8.7 inches
Exterior	Machined
UPC	053893934068
Vehicle Fitment	Ford: Excursion 2000-2005, F-250 1999-2004, F-350 1999-2004

7. Warranty and Support

For specific warranty information regarding your Timken 515020 Axle Bearing and Hub Assembly, please refer to the official Timken website or contact their customer support directly. Warranty terms and conditions may vary. For technical support or further assistance with installation and troubleshooting, it is recommended to consult a certified automotive technician or refer to your vehicle's official service manual.