Bearing Adjustment Basics

Proper bearing adjustment is essential in maximizing bearing service life.

Bearings should be adjusted to a setting range of 0.001 in. to 0.005 in. end play.

To ensure proper end play, a dial indicator should always be used.

Rotating or Oscillating the Bearing

During adjustment, position the rollers tightly against the bearing cone (inner race) large rib. When tightening the adjusting nut or using a dial indicator to measure end play, always rotate or oscillate the rollers to be sure they are properly seated.

Improper bearing adjustment can negatively affect these other wheel end components:

- Anti-lock Braking System (ABS) and traction-control systems
- Brake components
- Camber and toe settings
- Spindles
- Tires
- Wheel seals
- Hubs

Types of Damage Caused by Poor Bearing Adjustment

Damage types caused by improper adjustment include:

- Worn spindles or hub – bearing setting too loose or too tight
- Leaky seals – bearing setting too loose or too tight
- Heating (bluing) of spindle or bearings – bearing setting too tight
- Wear on roller ends – bearing setting too loose or too tight

Advantages of Proper Bearing Adjustment

Incorporating proper bearing adjustment techniques into your maintenance routine helps standardize the practice among your technicians – improving accuracy and consistency. Proper bearing adjustment can also improve your driver's safety on the road.

Resources

For more information on bearing adjustment, refer to The Technology & Maintenance Council's recommended practice (RP 618) for achieving proper end play adjustment of steer-, drive- and trailer axle bearings.

Dial Indicator

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Whatever System of Bearing Adjustment You Employ, Follow These Basic Characteristics to Help Achieve Proper End Play Adjustment.

1. Accurate and repeatable. A quality wheel bearing adjustment procedure must be accurate and repeatable. Select a value to adjust the bearings to, and get as close as possible to it – every time.

2. Safety. Always follow the manufacturer's recommended practices to minimize the risk of the wheel separating from the vehicle and potentially causing serious bodily injury or death.

3. Optimize the entire wheel end system. Wheel end bearing adjustments should maximize the performance of the entire wheel end system including tires and seals.

4. Eliminate the need for special tools. Streamline your procedure to eliminate the need for special tools, as it may be difficult to apply the procedure on a broad-based scale.

Timken recommends the *Technology & Maintenance Council (TMC) Recommended Practice (RP) 618* to achieve proper end play adjustment of steer, drive and trailer axle bearings.

TechTips is not intended to substitute for the specific recommendations of your equipment suppliers.

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