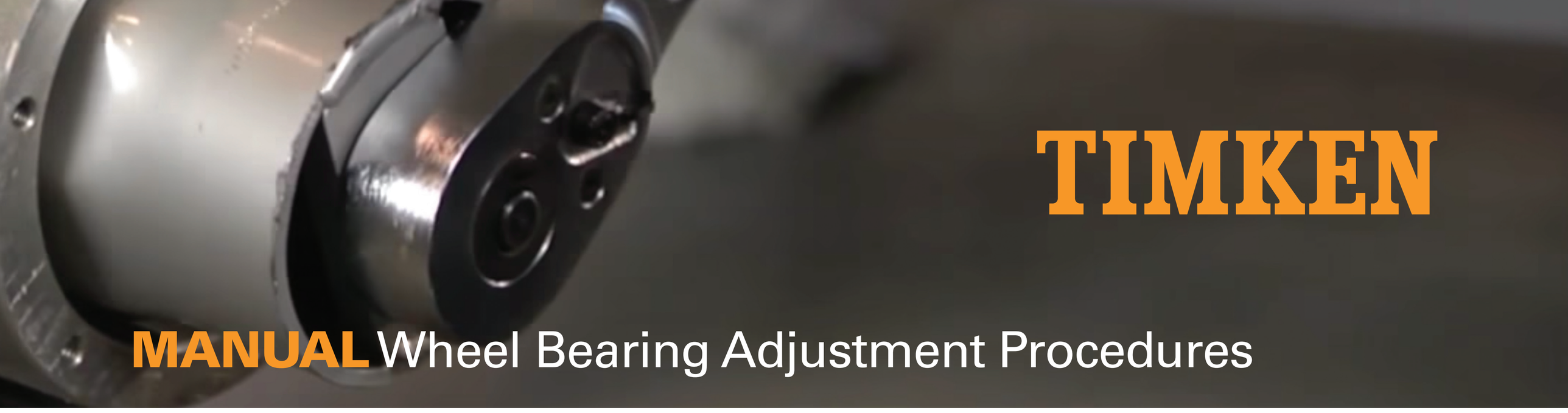


MANUAL Wheel Bearing Adjustment Procedures

The goal of this recommended procedure is to achieve a verifiable wheel bearing end play of 0.001" to 0.005" (.025 mm to .127 mm). This procedure applies to steer, drive and trailer axle assemblies using conventional double nut or single nut systems on Class 6, 7 and 8 trucks. This refers only to torque specifications and bearing adjustment. Please refer to the original equipment manufacturer's recommended procedures for complete installation details.

NOTE: For single nut self-locking systems, consult manufacturers' instructions. If you have a system that differs from what is indicated in this procedure, consult the vehicle manufacturer's recommended procedure.

Tapered Roller Bearing Adjustment Procedure RP 618A

Step 1: Lubricate the tapered roller bearing with clean axle lubricant of the same type used in the axle sump or hub assembly. **NOTE:** Never use an impact wrench when tightening or loosening lug nuts or bolts during the procedure.

Initial Adjusting Nut Torque	Initial Back Off	Final Adjusting Nut Torque	Axle Type	Threads Per Inch	Final Back Off	Nut Size	Torque Specifications	Acceptable End Play
Step 2	**Step 3**	**Step 4**	**Step 5**		**Step 6**	**Step 7**		**Step 8**
200 lbf•ft (271N•m) While Rotating Wheel	One Full Turn	50 lbf•ft (68 N•m) While Rotating Wheels	Steer (Front) Non-Drive	12	1/6 Turn*	Install Cotter Pin to Lock Axle Nut in Position		0.001" - 0.005" (.025 - .127 mm) As Measured Per Procedure With Dial Indicator
				18	1/4 Turn*			
				12	1/3 Turn*	Less Than 2 5/8"(66.7 mm)	200-300 lbf•ft (271-407 N•m)	
				14	1/2 Turn*			
				18				
			Drive	12	1/4 Turn*	Dowel Type Washer	300-400 lbf•ft (407-542 N•m)	
				16		Tang Type Washer**	200-275 lbf•ft (271-373 N•m)	
			Trailer	12	1/4 Turn*	Less Than 2 5/8"(66.7 mm)	300-400 lbf•ft (407-542 N•m)	
				16				

* If dowel pin and washer (or washer tang and nut flat) are not aligned, remove the washer, turn it over and reinstall. If required, loosen the inner (adjusting) nut just enough for alignment.

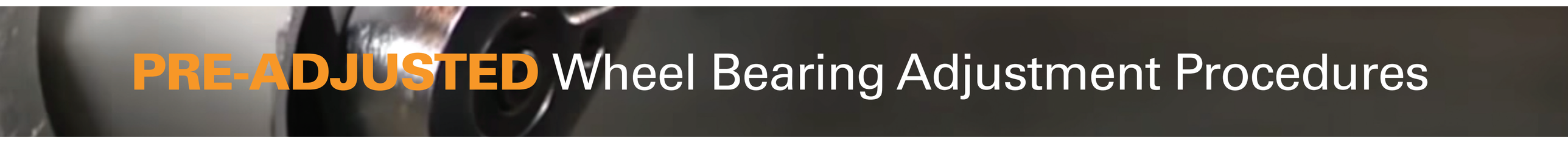
** Bendable type washer lock only: Secure nuts by bending one wheel nut washer tang over the inner and outer nut. Bend the tangs over the closest flat perpendicular to the tang.

Verify end play with a dial indicator. Wheel end play is the free movement of the tire and wheel assembly along the spindle axis.

a) Make sure the brake drum-to-hub fasteners are tightened to the manufacturers' specifications.
b) Attach the dial indicator with its magnetic base to the hub or brake drum.
c) Adjust the dial indicator so that its plunger or pointer is against the end of the spindle with its line of action approximately parallel to the axis of the spindle.
d) Grasp the wheel assembly at the 3 o'clock and 9 o'clock positions. Push the wheel assembly in and out while oscillating it to seat the bearings. Read the bearing end play as the total indicator movement.

NOTE: If end play is not within specification, readjustment is required.

TMC RP 618A, Wheel Bearing Adjustment Procedure, appears in TMC's 2010-2011 Recommended Practices Manual, and is published by the Technology & Maintenance Council (TMC) of American Trucking Associations; 950 N. Glebe Road, Arlington, VA 22203; (703) 838-1763; http://tmc.truckline.com. Reprinted with permission.



PRE-ADJUSTED Wheel Bearing Adjustment Procedures

NOTE: This refers only to torque specifications and bearing adjustment. Please refer to the original equipment manufacturer's recommended procedures for complete installation details.

1) Mount the hub assembly onto the axle spindle, while holding the outer cone in place. Make sure the bearing cones, spacer and spindle are aligned to avoid seal damage.
2) Install the inner spindle nut and torque to **300** ft-lbs. Do not back off the spindle nut.
3) Engage the locking device that is part of the spindle nut system. If the locking system cannot be engaged when the nut is at 300 ft-lbs, advance the nut until the locking system can be engaged (reference note above). For a double nut or jam nut system, bend the lock tab or install the set screw after the outer nut is torqued to **200** ft-lbs.
4) For one-piece spindle nut systems, torque the nut to a minimum of **300** ft-lbs. Do not back off the spindle nut. Engage any locking device that is part of the spindle nut system. If the locking device cannot be engaged when the nut is at 300 ft-lbs, advance the nut until engagement takes place and the nut is locked.

⚠WARNING ***Failure to follow these warnings could create a risk of death or serious bodily injury.***

Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication. Never spin a bearing with compressed air. The rolling elements may be forcefully expelled.
Always follow wheel torque recommendations. Excessive or inadequate wheel torque can lead to failure of the wheel mounting system and loss of a wheel.
Do not remove the outer bearing once it has been installed on the spindle. Removing it could cause the seal to become misaligned and lead to a seal failure or loss of a wheel.

Every reasonable effort has been made to ensure the accuracy of the information contained in this writing, but no liability is accepted for errors, omissions or for any other reason.

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