

MERITOR® WHEEL BEARING ADJUSTMENT SYSTEM FOR THE AFTERMARKET



MERITOR®



MERITOR AND TEMPER®.

The Industry Needs A Better Wheel Bearing Adjustment Solution. Doctor Preload® Delivers.

It has been estimated that 80 percent of trucks and trailers run with loose bearings.* Looseness of end play in the bearings can cause performance loss in the wheel end, which can lead to unnecessary repair costs. Fortunately, Meritor and Temper Axle Products have partnered to provide an industry-leading bearing adjustment solution.

With more than 100 years of axle-manufacturing experience, Meritor has consistently brought advanced axle technologies to the marketplace. Recognizing the benefits of the Doctor Preload® system, Meritor Aftermarket partnered with Temper in 2014 to offer Doctor Preload and Temper-Loc® spindle nuts – an industry-leading bearing adjustment system for wheel-end management, longer tire life and less downtime.

“I’m a firm believer in the Doctor Preload and Temper-Loc nut system. It’s helped us cut recap use by one-third over two years and reduce inside tire edge wear-out by 90%. Our wheel ends run truer and run longer.”

*Russ Van Beek, Heyl Truck Lines
Akron, IA*

“I use the system on roughly 100 trailers and it’s keeping preload on the wheel bearings. It has been a good addition to my fleet.”

*John Herbst, Owner, J&R Transport
Dickeyville, WI*

Founded in 1969, Temper is a leading engineering and manufacturing company in precision assemblies and equipment for industrial products. The company introduced its first product – Temper Load Rings – in 1970 to offer better bearing adjustment for a wide variety of industrial applications. Today, Temper continues to pioneer technologies that provide complete solutions for heavy vehicle applications, including the Doctor Preload and Temper-Loc bearing adjustment system.

The Doctor Preload and Temper-Loc bearing adjustment system is designed and manufactured in the U.S.A.



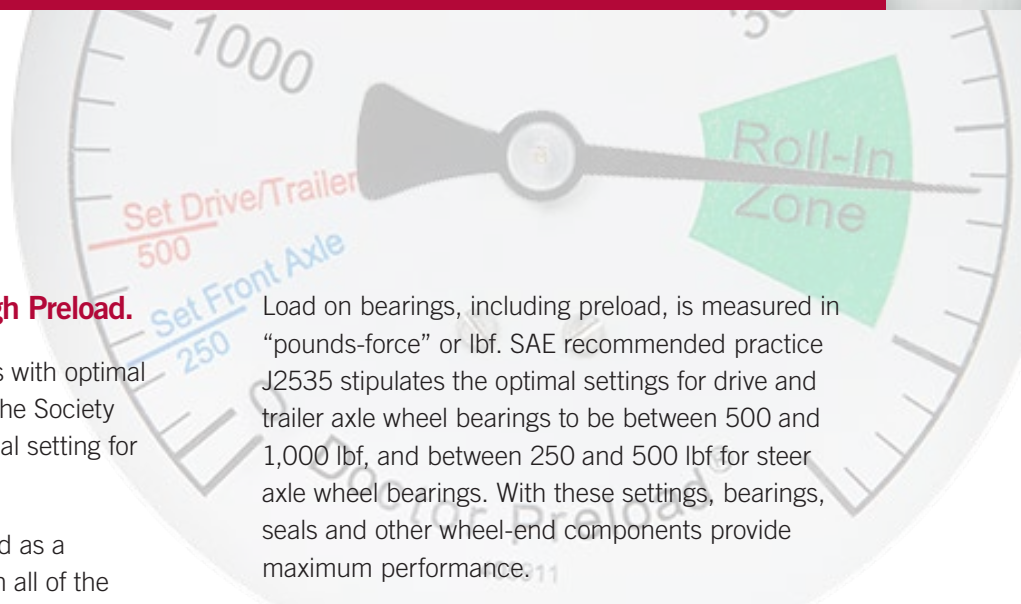
“Setting the proper pre-load can’t be anything but good. That’s why we’ve invested in Doctor Preload and Temper-Loc spindle nuts. I’m glad I spent the money on this system and it’s working well on all my trailers.”

*Brock Ackerman, K & B Transportation
South Sioux City, NB*

“We believe in the product and it’s doing exactly what it promised to do – keeping a consistent preload on the wheel bearings and contributing to good-to-better tire wear. The system has been a valuable addition to our maintenance operation. On our two most recent orders of new trailers, we insisted that the OEMs install Temper-Loc nuts, which puts us on the right track with properly managed bearing settings.”

*Roy Hegland, Fleet Maintenance Supervisor, Midwest Motor Express
Bismarck, ND*

* Source: *Truckinginfo.com* December 2011



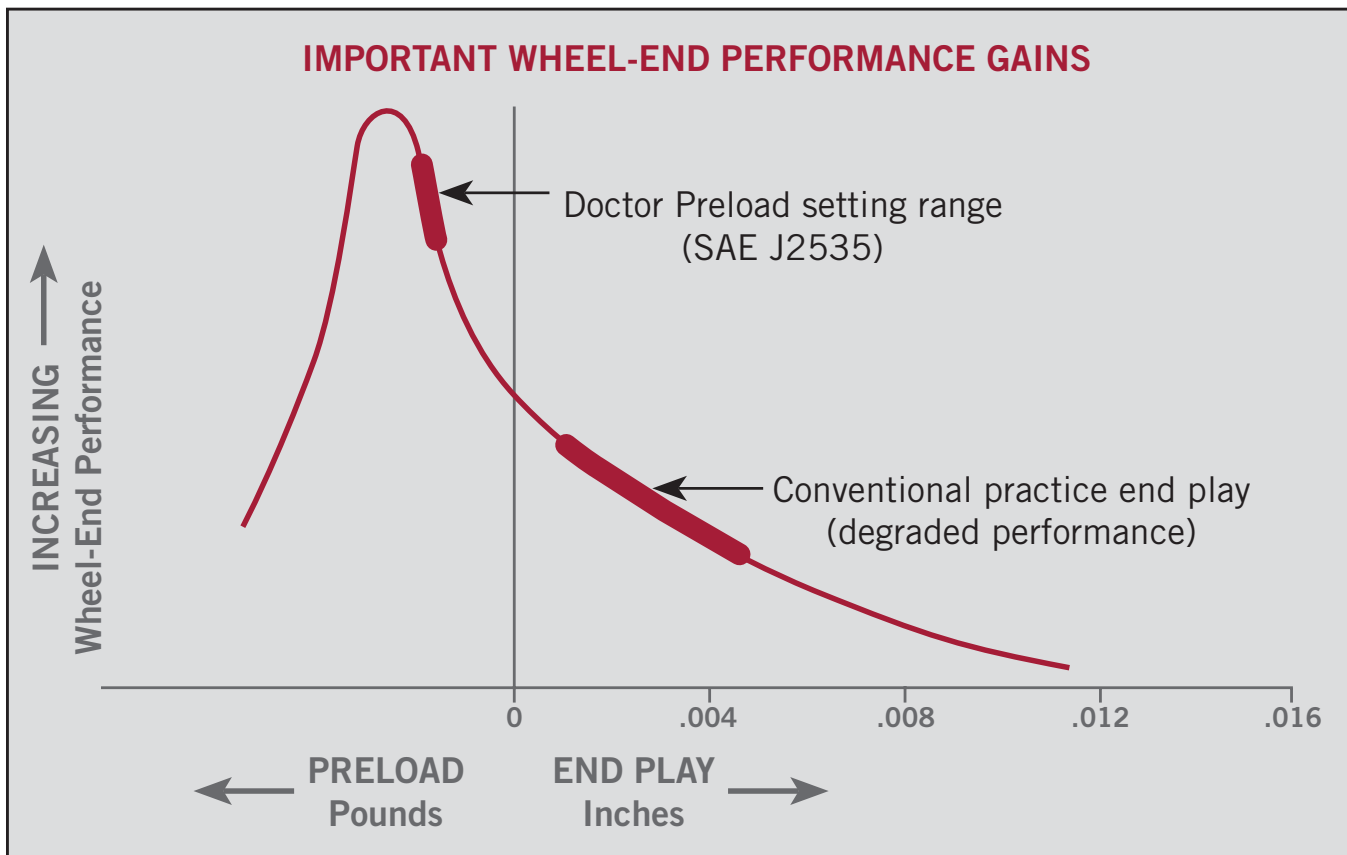
Better Bearing Management Through Preload.

Optimum wheel-end management begins with optimal wheel bearing adjustment. According to the Society of Automotive Engineers (SAE), the optimal setting for wheel bearings is a light preload.

What is preload? Preload is simply defined as a measured “tight” bearing setting in which all of the rollers in the tapered roller bearings are kept under a slight force or load. This preload condition keeps vibration and angular movement in the wheel end to a minimum during operation, reducing potential bearing wear and other wheel-end problems.

Load on bearings, including preload, is measured in “pounds-force” or lbf. SAE recommended practice J2535 stipulates the optimal settings for drive and trailer axle wheel bearings to be between 500 and 1,000 lbf, and between 250 and 500 lbf for steer axle wheel bearings. With these settings, bearings, seals and other wheel-end components provide maximum performance.¹¹

Using traditional methods, there is space or “clearance” between the bearing components and the bearings are said to have end play (also referred to as a “loose” bearing setting). Excessive end play can result in extreme wear on bearings, spindles, tires and wheel seals. It can also cause anti-lock braking system (ABS) faults.



Optimal Preload With The Doctor Preload Tool.

Doctor Preload, when used in conjunction with Temper-Loc spindle nuts, is an ideal wheel-end bearing adjustment solution. The system sets the bearings to precise preload settings with a quick, simple, reliable and repeatable process.

Features and Benefits:

- Measured, precise, repeatable settings to optimal preload for more time on the road
 - Improved tire life
 - Optimal bearing, spindle and wheel seal life
 - Fewer ABS faults
- Faster, easier and streamlined bearing adjustment process reduces overall adjustment time
- Adjusts wheel-end bearings to meet SAE J2535 recommended preload settings



Specifications – Doctor Preload 900 Series Tool

Tool Part Number	Use with Temper-Loc Nut	Axle Spindle Application	Axle Applications
MER415005	MER614723	TP Trailer	Meritor (TP), Dana, Eaton (P22), Fruehauf, Propar
MER415084	MER614743	TN Trailer, TN Trailer with Aluminum Hubs	Meritor (F, H, RL, RQ, TK, TKL, TKLD, TL, TLD, TN, TND, TO, TQC, TQD) Dana Spicer (D20, D21, D22, DD22, K21, K25, K30)
MER415002	MER614836	FF Steer	Meritor (FD900, FD901, FD961, FE900, FE903, FF900, FF901, FF921, FF931, FF932, FF933, FF941, FF942, FF943, FF944, FF952, FF961, FG941)
MER415347	MER614837	FE Steer	Meritor (FE931)
MER415004	MER614973	R Drive	Meritor (TR), Eaton (P22), Ford, Rainstar

MER415003 is replaced by MER415084 for 900 Series Tools.

Specifications – Doctor Preload 900 Series Conversion Kits

Conversion Kit Part Number	Doctor Preload Tool Part Number	Axle Spindle Application	
MER425731	MER415002	FE Steer	Spindle Adapter Conversion Kit to allow field interchange of the MER415002 Doctor Preload Tool to be compatible with FE Steer
MER425732	MER415347	FF Steer	Spindle Adapter Conversion Kit to allow field interchange of the MER415347 Doctor Preload Tool to be compatible with FF Steer



Precise Positioning With Temper-Loc Spindle Nuts.

Temper-Loc precision single-locking nut system provides bearing adjustment with pinpoint accuracy; each Temper-Loc nut is manufactured to ultra-tight machining tolerances. The nut system sets optimal wheel-end preload maximizing tire life and vehicle uptime. With its unique chamfered mounting face, Temper-Loc is the exclusive spindle nut used in conjunction with the Doctor Preload bearing adjustment tool.

Features and Benefits:

- Heat-treated nut face for superior strength
- Fingertip control retainer ring for ease of placement and positioning
- EasyView™ verification of positive locking



Specifications

Temper-Loc Nut Assembly Number	Replaces Stemco Number	Replacement Retainer Ring Number	Axle Spindle Application	Thread Diameter	Threads Per Inch	Tool Socket Size	Outer Bearing
MER614723	447-4723	MER644723	TP Trailer	3.480"	12	4-13/16" - 8 point	HM518445 / HM518410
MER614743	447-4743	MER644743	TN Trailer	2.625"	16	3-3/4" - 8 point	HM212049 / HM212011
MER614836	448-4836	MER644836	FF Steer	1.500"	12	2-1/2" - 6 point	3782 / 3720
MER614837	448-4837	MER644837	FE Steer	1.500"	18	2-1/2" - 6 point	3782 / 3720
MER614973	449-4973	MER644973	R Drive	3.250"	12	4-3/8" - 8 point	580 / 572

SIX SIMPLE STEPS. COUNTLESS BENEFITS.



1. Attach Doctor Preload tool to end threads of the axle. Use a sweeping motion to guide the load arms around the locknut while engaging the key locator in the keyway. Engage the thread with two turns of thread with the end of the axle.



2. Seat the bearing rollers. Tighten T-handle to load the bearings until the gauge pointer is in green "Roll In Zone." Roll the wheel three revolutions.



3. To set the bearings, loosen T-handle slowly until gauge pointer points to "Set Drive/Trailer Axle" or "Set Front Axle" accordingly.



4. Finger-tighten the Temper-Loc nut against the bearing; align the closest dot on the nut to the key locator indicator mark.



5. Remove the Doctor Preload tool.



6. Install the Temper-Loc nut retaining ring and check for correct retainer installation.

Product Protection You Expect.

Get real peace of mind with comprehensive product protection. Doctor Preload tools are covered by a 1-year warranty from the sale date to the end user. Temper-Loc nuts are covered by a 3-year warranty from the date of installation. The Doctor Preload tool and Temper-Loc nut system must be registered for warranty eligibility. Registration can be completed by mail or by visiting MeritorPartsWarranty.com.

Extend your warranty coverage even further. The Doctor Preload tool and Temper-Loc nuts are eligible for the Meritor Wheel-End Extended Warranty on both trucks and trailers, which offers increased warranty coverage when complementary Meritor wheel-end products are purchased and installed together. See the coverage overview or visit MeritorPartsWarranty.com for full coverage details.





Trailer Wheel-End Extended Warranty.

Product	Aftermarket Warranty	Purchase/install these four products together and receive 3-year/300,000-mile coverage.	
		3-Year/300,000-Mile Wheel End Warranty ¹	5-Year/Unlimited Mileage Wheel End Warranty ¹
Meritor Hub Caps ²	1 Year	✓	✓
Temper-Loc Spindle Nuts	3 Years ³	✓	✓
Meritor Premium Wheel Seals	2 Years or 300,000 Miles ³	✓	✓
Meritor PlatinumShield™ III Lined Brake Shoes	3 Years or 300,000 Miles ⁴	✓	✓
Doctor Preload	1 Year		✓ Temper-Loc Nuts must be installed utilizing the Doctor Preload tool to qualify for unlimited mileage warranty.
Meritor Bearing Sets	1 Year		
Timken® Bearing Sets	1 Year		
Meritor Standard Wheel Seals	1 Year or 150,000 Miles ³		

¹ As part of proper wheel-end maintenance, Meritor recommends the installation of new brake drums and brake hardware.

² Includes Meritor Tire Inflation System (MTIS™) Dual Dynamics Hub Caps.

³ From date of installation.

⁴ Against rust-jacking only.

Truck/Trailer Wheel-End Extended Warranty.

Product	Aftermarket Warranty	Purchase/install these three products together and receive 3-year/300,000-mile coverage.	
		3-Year/300,000-Mile Wheel End Warranty ¹	5-Year/Unlimited Mileage Wheel End Warranty ¹
Temper-Loc Spindle Nuts	3 Years ³	✓	✓
Meritor Premium Wheel Seals	2 Years or 300,000 Miles ³	✓	✓
Meritor PlatinumShield III Lined Brake Shoes	3 Years or 300,000 Miles ⁴	✓	✓
Doctor Preload	1 Year		✓ Temper-Loc Nuts must be installed utilizing the Doctor Preload tool to qualify for unlimited mileage warranty.
Meritor Bearing Sets	1 Year		
Timken Bearing Sets	1 Year		
Meritor Standard Wheel Seals	1 Year or 150,000 Miles ³		

¹ As part of proper wheel-end maintenance, Meritor recommends the installation of new brake drums and brake hardware.

² Includes Meritor Tire Inflation System Dual Dynamics Hub Caps.

³ From date of installation.

⁴ Against rust-jacking only.

Customer Support You Deserve.

Our highly trained Customer Care team is your source for complete support. Call us at 888-725-9355 (or 800-387-3889 in Canada). Or visit MeritorPartsXpress.com – our industry-leading online catalog, ordering and tracking system – with real-time access to complete parts information resources.



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