

FOR USE WITH DOCTOR PRELOAD TOOLS FOR STEER AXLES: FF & FE Spindles



TEMPER AXLE PRODUCTS CORPORATION  
ALL PRODUCTS PROUDLY MADE IN USA  
[WWW.DOCTORPRELOAD.COM](http://WWW.DOCTORPRELOAD.COM)

NOTE: DOCTOR PRELOAD IS INTENDED FOR USE ONLY WITH CONVENTIONAL HUBS. REMOVE ALL BEARING SPACERS FROM PRE-ADJUSTED HUB ASSEMBLIES BEFORE ADJUSTING WITH DOCTOR PRELOAD. DO **NOT** ATTEMPT TO ADJUST A UNITIZED HUB ASSEMBLY USING THE DOCTOR PRELOAD SYSTEM.

**USE DOCTOR PRELOAD ONLY WITH TEMPER-LOC® SPINDLE NUTS.**

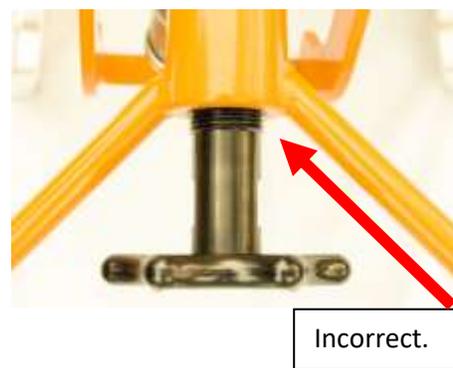
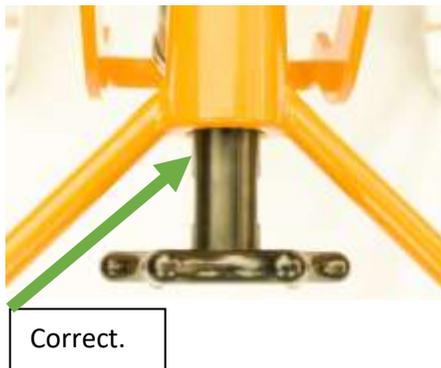
### Inspect Components Before Starting Bearing Adjustment:

Inspect all wheel end components. Repair any damage to the spindle threads so that the Temper-Loc spindle nut is able to thread completely onto the spindle.

### Prepare the Wheel End for Bearing Adjustment:

Always be sure the hub is fully seated before adjusting with Doctor Preload. Thread the correct size Temper-Loc nut onto the spindle. Using a bar and socket, tighten the Temper-Loc nut to drive the hub **solidly** against the axle. Loosen the nut one half turn. Finally, hand-tighten the nut until it first touches the face of the outer bearing.

- 1) **ATTACH DOCTOR PRELOAD:** Adjust the yellow T-handle so that it is “loosened” to the point that it completely covers the threads on the shaft of the Spindle Adapter shaft, as shown below.

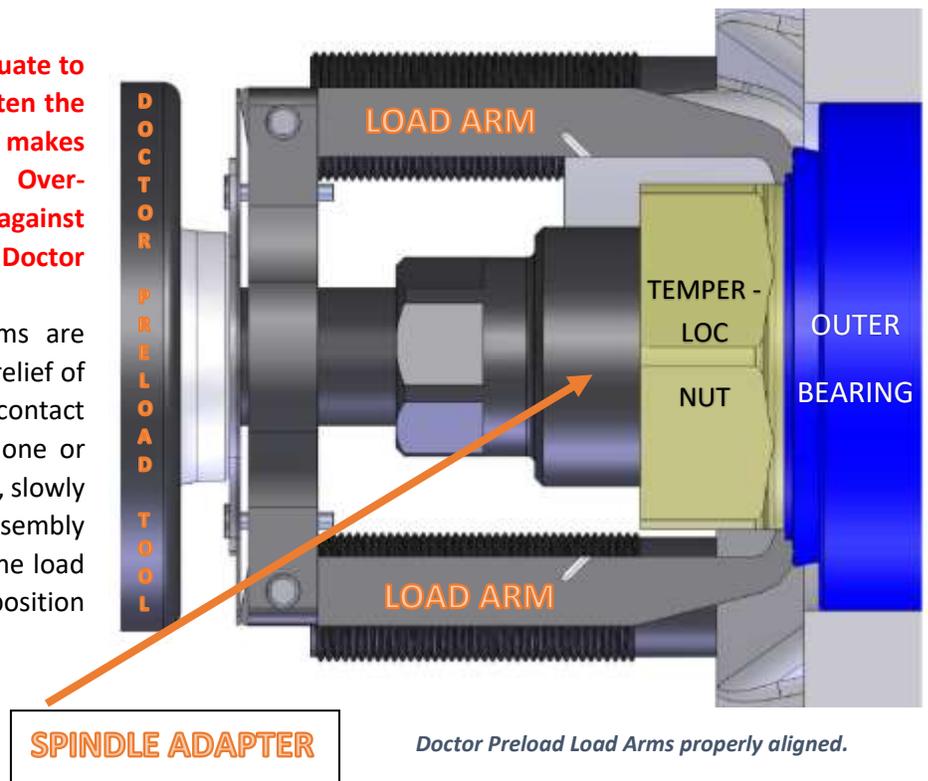


- 2) **ATTACH DOCTOR PRELOAD:** Using a sweeping motion, guide the spring-loaded load arms around the nut. Carefully engage the spindle adapter thread on the spindle until the O-ring in the spindle adapter bottoms out against the spindle face.

**NOTE: A two-thread turn is adequate to engage the adapter. Do not tighten the star-handle once the O-ring makes contact with the spindle. Over-tightening the spindle adapter against the spindle can damage the Doctor Preload Tool.**

Check to be sure the load arms are properly located in the backface relief of the Temper-Loc nut and making contact with the outer bearing cone. If one or both are skewed out of alignment, slowly push and pull the load arm assembly along the shaft until the tips of the load arms spring into their proper position behind the Temper-Loc nut.

See diagram at right.



- 3) **SEAT THE BEARING ROLLERS:** Tighten the T-handle, **SLOWLY** turning it clockwise.

**Caution: Do NOT over-tighten the T-handle such that the needle pointer exceeds the maximum value shown on the gage. Allow the needle pointer to catch up as you slowly tighten the yellow T-handle.**

Turn the yellow T-handle to load the bearings until the needle pointer on the Doctor Preload gage reaches the green 'Roll-in Zone.' Spin the hub at least 3 full turns in any one direction to seat the bearing rollers. The load may drop slightly when rolling in the bearings – this is normal. If the needle pointer drops out of the "Roll-in Zone", tighten the T-handle until it returns to the "Roll-in Zone" and spin the hub again. Repeat until the needle pointer stays in the "Roll-in Zone." **Do not spin the hub again after this step.** If this occurs, remove Doctor Preload and start over by fully seating the hub as described in "Prepare the Wheel End for Bearing Adjustment" above.



**Do not hand-tighten the Temper-Loc nut against the bearing while the needle pointer is in the green "Roll-In Zone".**

- 4) **SET THE BEARINGS:** Loosen the T-handle, turning it counterclockwise slowly until the needle pointer reaches the 500 lbs force hash mark. Do not go past the set point; if the set point is overshoot, go back to Step 2 and repeat in order to seat the bearing rollers.
- 5) **LOCK IN THE BEARING SETTING:** Rotate the Temper-Loc nut clockwise until the backface makes contact with the bearing face. Adjust slightly until dots on the frontface of the nut align with one or both of the yellow hash marks on the Load Arms.
- 6) **REMOVE DOCTOR PRELOAD FROM THE SPINDLE:** Completely loosen the T-handle by turning it counterclockwise until the load shown on the gage drops to zero and the threads on the shaft are completely covered. Hold the gage-guard

handle to support the weight of the tool, and then loosen the star-handle, turning it counterclockwise. When the tool is unattached from the spindle, gently pull straight back and the load arms will slide back around the nut.

- 7) **INSTALL THE RETAINER RING:** First install the EasyView® center tab of the retainer ring in the Temper-Loc nut, aligning the key flat with the spindle flat (FF Style) or engaging the key in the keyway (FE Style) at the same time. See below. Push in on each end finger tab, one at a time, to fit each tab into the nut groove.



*Retainer Tab entering groove (FF Style).*



*Retainer Tab secured in groove (FF Style).*

**ALWAYS INSPECT THE FINAL ASSEMBLY.** Ensure that there is a yellow retainer ring inserted in the nut. CHECK THAT ALL THREE EasyView TABS AND THE LOCKING TEETH OF THE KEY ARE FULLY SEATED IN THE NUT FOR A SAFE INSTALLATION. The EasyView notches of all three tabs must be completely hidden in the groove of the nut. Failure to inspect the installation thoroughly could result in component failure and bodily injury.



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