STEMCO®
A Higher Standard of Performance.™
an EnPro Industries company

PRO-TORQ®
ADVANCED AXLE SPINDLE NUTS

IMPORTANT

Pro-Torq® Installation Procedure for PreSet® or LMS® Hubs:
Pro-Torq® spindle nuts may be used with PreSet® or LMS® hub assemblies. When used with these systems, it is important to follow the hub manufacturers' product specific installation instructions. For PreSet® and LMS® hub assemblies, torque the Pro-Torq® spindle nut to a minimum of 250 ft. lbs. Engage the keeper. If the keeper can not be engaged, advance the spindle nut until it can be engaged. DO NOT BACK OFF THE SPINDLE NUT.

WARNING

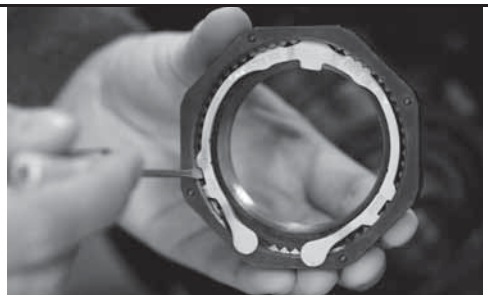
Failure to follow this instruction could cause the wheel to come off and cause bodily injury.The PRO-TORQ® Spindle Nut is sold as an assembly with the keeper in place. DO NOT attempt to place the nut on the spindle or tighten or loosen the nut on the spindle while the keeper is locked inside the nut. Doing so may deform the keeper and allow the nut to unthread during operation. DO NOT bend or manipulate keyway tang in any way. Doing so may cause the tang to break off in service. Failure to back off the nut will cause the bearings to run hot and be damaged.

BEARING ADJUSTMENT

Pro-Torq® Installation Procedure for Hubs with Manually Adjusted Wheel Bearings

STEP 1. Remove The Keeper From The Nut:

Use a screwdriver to carefully pry the keeper arm from the undercut groove on each side until the keeper is released.



STEP 2. Seat the Bearing:

With hub or hub/drum only:
Using a torque wrench:
1 (A) Tighten the nut to 200 ft-lbs.
Spin the wheel at least one full rotation.
(B) Tighten the nut to 200 ft-lbs.
Spin the wheel at least one full rotation.
(C) Tighten the nut to 200 ft-lbs.
2 Back off until loose.

With hub/drum/wheels:
Using a torque wrench:
1 Tighten the nut to 200 ft-lbs while the wheel is rotating.
2 Back the nut off until it is loose.

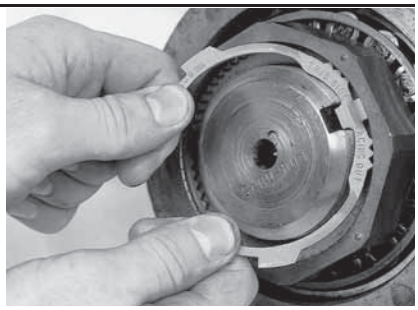
STEP 3. Adjust The Bearing:

With hub or hub/drum only:
Using a torque wrench:
1 (A) Tighten the nut to 100 ft-lbs.
Spin the wheel at least one full rotation.
(B) Tighten the nut to 100 ft-lbs.
Spin the wheel at least one full rotation.
(C) Tighten the nut to 100 ft-lbs.
2 Back the nut off one raised face mark (according to chart).

With hub/drum/wheels:
Using a torque wrench:
1 Tighten the nut to 100 ft-lbs while the wheel is rotating.
2 Back the nut off one raised face mark (according to chart).

FINAL BACKOFF Part Numbers	Backoff
Trailer Axle Nut 447-4723, 447-4724, 449-4973	1/8 turn
Trailer Axle Nut 447-4743	1/4 turn
Steering Spindle Nut 448-4836, 448-4838, 448-4839, 448-4863, 448-4864, 448-4865	1/4 turn
Steering Spindle Nut 448-4837, 448-4840	1/3 turn
Drive Axle Nut 449-4904, 449-4973, 449-4974, 449-4975	1/8 turn

STEP 4. Install the Keeper:



Orange side facing out

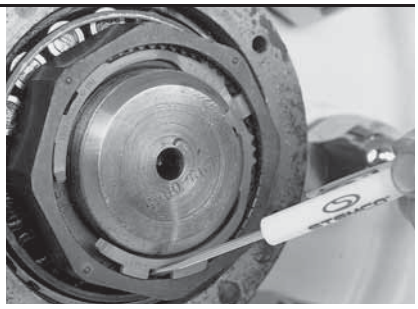
1. **Insert the keeper tab into the undercut groove of the nut and engage the keyway tang in the axle keyway. Insert keeper tab with the orange side facing out.**
2. **Engage the mating teeth.**
3. **Compress and insert the keeper arms, one at a time, into the undercut groove with a screwdriver.**

For Steering Spindle Nut
448-4836, 448-4839, 448-4840, 448-4863, 448-4864, and 448-4865

1. **Align the flat of the keeper with the milled flat on the spindle and insert the keeper tab into the undercut groove of the nut. Insert keeper tab with the orange side facing out.**
2. **Engage the mating teeth.**
3. **Compress and insert the keeper arms, one at a time, into the undercut groove with a screwdriver.**

NOTE Recommended practice is to replace the keeper each time the Pro-Torq nut assembly is removed for maintenance purposes.

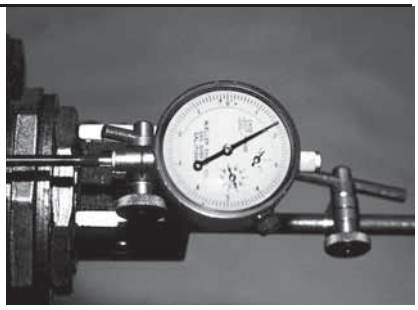
STEP 5. Inspect the Installation:



Failure to follow this instruction could cause the wheel to come off and cause bodily injury. Make sure that the keeper tab and keeper arms are fully seated into the undercut groove. Inspect keyway tang to insure it does not contact the bottom of the keyway If contact exists, immediately notify your PRO-TORQ® representative.

This procedure will consistently produce a bearing setting of .001˝ to .003˝ end play.

STEP 6. Acceptable End Play:



The dial indicator should be attached to the hub or brake drum with its magnetic base. Adjust the dial indicator so that its plunger is against the end of the spindle with its line of action approximately parallel to the axis of the spindle. Grasp the wheel or hub assembly at the 3 o'clock and 9 o'clock positions. Push and pull the wheel-end assembly in and out while oscillating the wheel approximately 45 degrees. Stop oscillating the hub so that the dial indicator tip is in the same position as it was before oscillation began. Read the bearing end-play as the total indicator movement.

***Acceptable end-play is .001"- .005".** *For single nut self-locking systems, consult manufacturers' specifications. STEMCO assumes no responsibility for other manufacturers' bearing warranty.*

FAQS - COMMON CAUSES AND SOLUTIONS

Q. Is there a problem with the keeper hitting the bottom of the keyway or the flat of the spindle?

A. **If contact exists, contact STEMCO Customer Service @ 1-800-527-8492.**

Q. Is a washer required between the Pro-Torq® Nut and the outer bearing?

A. **The bearing contact surface is hardened, therefore a washer is not required. One exception is a Ford 12,000# SIFCO steer axle.**

Q. What if the teeth in the Pro-Torq® Nut do not match-up with the keeper after the final adjustment?

A. **By very slightly loosening the nut, the teeth will engage the keeper.**

Q. Why does my keeper have paddles?

A. **A design improvement to help install the keeper correctly every time. More specific bearing adjustment procedures with standard adjustment nuts are addressed beginning on Page 48.**