



Recall Service Bulletin



**Recall Service Bulletin
RSB23-210-001**

- DATE:** 4/13/2023
- APPLIES TO:** This service bulletin applies to certain 2020 through 2023 model year, Gladiator and Metro Star model emergency response chassis cabs built between July 2020 and January 2023.
- NHTSA/TC Id:** 23V192 / 2023-190
- CONDITION:** Certain Meritor Front non-drive axle Pro-Torq wheel hub keepers were observed to be installed incorrectly.
- CORRECTION:** Inspect Pro-Torq nut installation and adjust per instructions if necessary.
- LABOR ALLOCATION:** 1.0 hour for inspection of both wheel ends
4.0 additional hour for R & R and adjustment of both wheel ends if required.
- CLASSIFICATION:** V3

GENERAL INSTRUCTIONS:

Thoroughly review entire service bulletin before starting work. If there are questions or concerns with steps defined in this service bulletin, contact Spartan Fire, LLC. Customer & Product Support Group.

All applicable industry safety standards must be followed when performing work identified in this procedure.

Contact Meritor Ontrac #866-668-7221 to open a claim and received work authorization before performing any repairs. Reference Program # C23AA.

Service Bulletins are intended for use by Professional Technicians only. They are written to guide Professional Technicians in performing service to vehicles of specific nature in conjunction with industry standards. Professional Technicians should be appropriately trained on industry standards and have the tools and equipment to perform procedures safely and properly.



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TECHNICAL BULLETIN TP-2301

FIELD REPAIR PROCEDURE

PRO-TORQ® NUT KEEPER INSPECTION ON FF, FG, FL AND MFS SERIES FRONT NON-DRIVE STEER AXLES WITH CONVENTIONAL WHEEL ENDS

Hazard Alert Messages

Read and observe all hazard alert messages in this publication.

⚠ DANGER

Indicates imminent danger. Failure to follow this instruction will result in death or serious injury.

⚠ WARNING

Indicates a possibly impending danger. Failure to follow this instruction can result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation or unsafe practice which, if not avoided, could result in injury or damage to components.

How to Obtain Additional Maintenance, Service and Product Information

Refer to [Maintenance Manual MM-2075, Four-Piston Quadraulic Disc Brake Caliper](#), [Maintenance Manual MM-0409 Wheel-End Components](#), [Maintenance Manual MM-0467, EX+™ Air Disc Brake, L and H Models](#) and [Maintenance Manual 23A Bus and Coach Rear Drive Axles](#) for additional information. To obtain these and other Meritor publications, visit [Literature on Demand at meritor.com](#).

Contact the Meritor OnTrac™ Customer Service Center

For additional information and guidance, contact the Meritor OnTrac™ Customer Service Center at 866-668-7221 (US and Canada) between 7:30 AM and 10:00 PM ET Monday through Friday, and between 9:00 AM and 6:00 PM ET on Saturday; 001-800-889-1834 (Mexico); or visit our website: www.meritor.com/warranty.

(16579)
Printed in USA

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Pro-Torq® Nut Keeper Inspection

This technical bulletin provides instructions for inspecting the Pro-Torq® nut on FF, FG, FL and MFS series front non-drive steer axles with conventional wheel ends. Instructions are also provided to adjust the wheel end play and reinstall the components if needed. When the procedures are complete, contact the Meritor OnTrac™ Customer Service Center at 866-668-7221 and provide photos of the work to obtain reimbursement.

Safety Precautions

Before performing the procedures in this publication, read and understand the following safety precautions.

⚠ DANGER

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. NEVER work under a vehicle supported only by jacks. Jacks can slip and fall over. Failure to use safety stands can result in death or serious personal injury and damage to components.

⚠ WARNING

To prevent eye injury, always wear eye protection when performing vehicle maintenance or service.

Pro-Torq® Nut Keeper Inspection Procedure

1. Park the vehicle on a level surface. Block the rear wheels to prevent the vehicle from moving.
2. Raise the vehicle so that the axle to be inspected is off the ground. Support the vehicle with safety stands. Do not use a jack to support the vehicle.
3. Clean the area at the hub-to-hub cover interface using a clean rag.

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- Place a drain pan under the hub. Remove the bolts and hub cover and allow the oil to drain from the hub.
- Take a photo of the keeper and Pro-Torq® nut.

⚠ DANGER

Always ensure the keeper is correctly installed in the Pro-Torq® nut. If the keeper is not correctly installed or missing, the nut can loosen or come off the hub, resulting in loss of vehicle control. Death or serious personal injury can occur.

- Inspect the orange keeper and check for proper seating. Refer to Figure 2 and Figure 3.

If the keeper teeth are correctly installed and the keeper is seated in the groove as shown in Figure 1: Proceed to Wheel Bearing Adjustment and Pro-Torq® Keeper Installation Procedure, Step 16.

If the keeper teeth are out of position or the keeper is not properly seated in the groove as shown in Figure 2: Proceed to Wheel Bearing Adjustment and Pro-Torq® Keeper Installation Procedure, Step 1.

Wheel Bearing Adjustment and Pro-Torq® Keeper Installation Procedure

⚠ DANGER

ASBESTOS AND NON-ASBESTOS FIBERS - Some brake linings contain asbestos fibers, a cancer and lung disease hazard. Some brake linings contain non-asbestos fibers, whose long-term effects to health are unknown. Use caution when handling both asbestos and non-asbestos materials. Refer to Section 2 for asbestos and non-asbestos safety information and recommended work practices.

- Remove the wheel and tire assembly per the OEM recommended instructions.
- Remove the disc brake pads. If the wheel end is equipped with drum brakes, it is not necessary to remove the drums at this time.
 - For EX+™ Air Disc Brakes, L and H Models, refer to MM-0467, section 5, page 23.
 - For Four-Piston Quadraulic Disc Brake Calipers, refer to MM-2075, section 3, page 6.

⚠ CAUTION

Always ensure the wheel end play is within specification. Failure to do so can result in premature bearing wear or damage.

- Measure the wheel end play. Attach a dial indicator to the hub and place the pointer of the dial indicator on the spindle. Without rotating the rotor, push inward and ZERO the indicator, then pull outward on the rotor and record the reading. Refer to MM 23A, section 5, page 44, Step 10 A through D only. Allowable end play is 0.001-0.005" (0.0254-0.127 mm). Figure 1.

If the end play measurement is within 0.001-0.005" (0.0254-0.127 mm) specification: Proceed to Step 14.

If the end play measurement is not within specification (less than 0.001" [0.0254] or more than 0.005" [0.127 mm]): Proceed to Step 4.

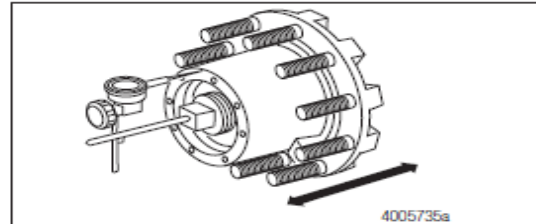


Figure 1

- Remove the brake caliper or brake drum from the spindle.
 - For EX+™ Air Disc Brake, L and H Models, refer to MM-0467, section 6, page 30.
 - For Four-Piston Quadraulic Disc Brake Calipers, refer to MM-2075, section 3, page 7.
 - For drum brakes, refer to the manufacturer's recommended instructions.
- Remove the keeper from the Pro-Torq® nut. Use a screwdriver in the keeper arm slots (see Figure 2) to carefully pry the keeper arm from the undercut groove on each side until the keeper is released. Discard the keeper.
- Remove the Pro-Torq® nut and hub assembly from the spindle.
- Check for metal debris and wear on components. Replace any worn components.
- Clean the spindle to remove any lubricant, corrosion prevention coating, foreign material, or surface rust that may be present. Be sure to clean the full length of the seal journal.

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9. Lubricate the bearing journals on the spindle or the inside diameter of the bearing cones with Grade 2 grease or the lubricant that will be used in the wheel end. Do not coat the seal journal on the spindle.
10. Lubricate the inside diameter of the seal with the same lubricant that will be used in the wheel end.
11. Mount the hub assembly onto the axle spindle with a smooth, firm motion while holding the outer bearing in place. Use care to maintain alignment between the bearing cones, spacer, and spindle and to avoid seal damage.
12. Seat the bearing as follows:
 - a. Install the Pro-Torq® nut on the spindle. Tighten the nut to 200 lb-ft (271 Nm) while rotating the hub.
 - b. Back the nut off one full turn.
13. Adjust the wheel bearing as follows:
 - a. Tighten the Pro-Torq® nut to 100 lb-ft (135.6 Nm) while rotating the hub.
 - b. Back the nut off one raised face mark (1/4 turn).
14. Install the new keeper (Meritor 1227S1709/Stemco 4504865) using the following steps.
 - a. Insert the new keeper in the undercut groove of the nut.
 - b. Engage the mating teeth.
 - c. Compress and insert the keeper arms, one at a time, into the undercut groove with the screwdriver in the keeper arm slots. Figure 2.

NOTE: DO NOT BACK OFF THE NUT TO ENGAGE. If the keeper mating teeth are not engaged, then slowly tighten the nut until they engage.

15. Take a photo of the keeper and Pro-Torq® nut installed.
16. Measure the end play to ensure it is within specification. Refer to Step 3 of this procedure.
17. Install new gaskets for the hub cover.
18. Install the hub cover and bolts and tighten to 12-18 lb-ft (16.27-24.4 Nm).
19. Reinstall the brake caliper or brake drum.
 - For EX+™ Air Disc Brake, L and H Models, refer to MM-0467, section 6 page 31. Tighten the M20 caliper bolts to 350-450 lb-ft (474-610 Nm).
 - For Four-Piston Quadraulic Disc Brake Caliper, refer to MM-2075, section 5 page 12. Tighten the M14 caliper bolts to 140-170 lb-ft (189.8-230 Nm).
 - For drum brakes. Re-install the drum per the manufacturer's recommended instructions.
20. Remove the oil fill plug on the cover and fill the hub with specified oil. Once filled to the proper level, reinstall the oil fill plug and tighten to specification.

NOTE: Oil is slow to drain through the outer wheel bearing. When filling the hubs with oil, it is best to check the oil level several times as they slowly drain through the bearing into the hub cavity.
21. Re-install the wheel and tire assembly. Refer to the OEM for correct instructions and specifications.
22. Contact the Meritor OnTrac™ Customer Service Center at 866-668-7221 and provide photos of the work to obtain reimbursement.

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Correct vs Incorrect Keeper Position

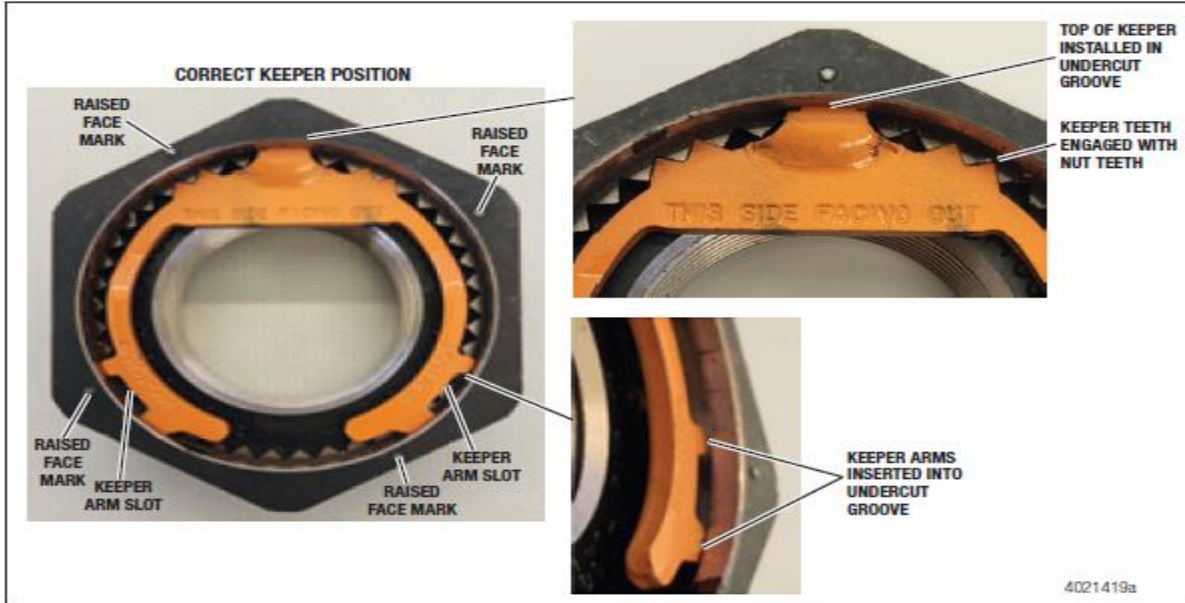


Figure 2



Figure 3



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Printed in USA

TP-2301
 Issued 03-23
 (165-79)

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