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Title: ProStar Brake Assembly Conversion - Stamped Spider Brake Assembly to Cast Spider Brake Assembly

Applies To: ProStar,

DESCRIPTION

Certain ProStar® models may experience cracking at the weld in the stamped S-cam tube bracket. This document provides the procedure to convert a stamped spider brake assembly to a cast spider brake assembly.

TOOLS REQUIRED

There are no special tools required for this procedure.

PARTS INFORMATION

Part #	Description	Qty.
CR35058	Seal, Axle Scotseal Plus XL Front	2
CR453869	Kit, Grease Seal Set	2
3938834C1	Bolt, Hex 3/4-16UNF-2.25 Low	14
3903995C1	Washer, Hardened Special, 3/4" Zn6A	14
9412368	Nut, Lock 3/4" UNF	14
3730492C93	Brake, Group FRT LT, 16.5x5Q, Meritor	1
3730493C93	Brake, Group FRT RT, 16.5x5Q, Meritor	1
2024772C1	Clip, Spring Type	2
2024771C1	Clip, Spring Type	2

WARNING:

Park vehicle on a hard, flat surface, turn the engine off, set the parking brake, and block the wheels to prevent the vehicle from moving in either direction. Failure to do so may result in property damage, personal injury, and/or death.

WARNING:

If the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over, potentially resulting in property damage, personal injury, and/or death.

WARNING:

Always wear safe eye protection when performing vehicle maintenance. Failure to do so may result in personal injury and/or death.

SERVICE PROCEDURE

1. Bring vehicle into shop and park on flat surface.

2. Shift transmission to Park or Neutral, set parking brake, and install wheel chocks.

3. Using a jack, raise truck and install jack stands under steer axle. Remove jack

4. Remove hub cap, wheel, and drum following service procedures in Wheels, Rims, and Tires Service Manual.

5. Drain oil into a suitable container

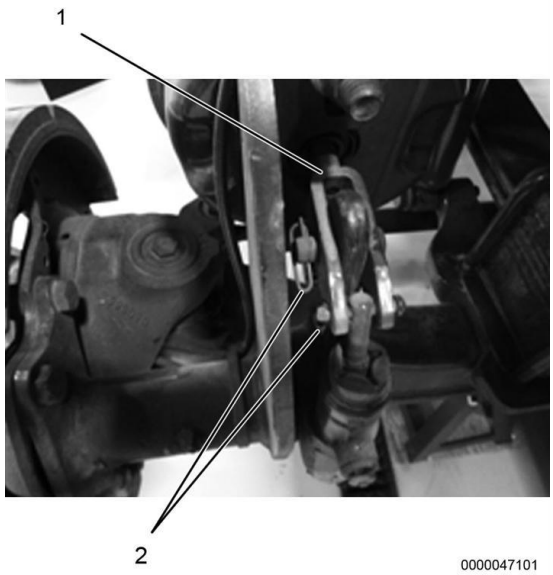

Figure 1. Brake Chamber Assembly.
1. Brake chamber
2. Nut and washer (2)
3. Clevis pin and clip (2)
4. Winged bracket

6. Remove two clevis pins and clips (Figure 1, Item 3) from yoke of brake chamber (Figure 1, Item 1) shaft. Discard clips.

7. Remove two nuts and washers (Figure 1, Item 2) and brake chamber (Figure 1, Item 1) from winged bracket (Figure 1, Item 4). Set brake chamber aside.

8. Remove hub following service procedure in appropriate ConMet service manual (refer to http://www.conmet.com).

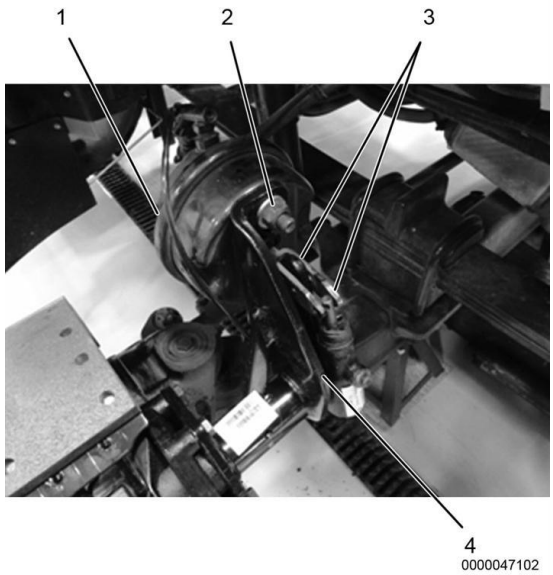

Figure 2. Stamped Brake Assembly.
1. Bolt, nut, and washer (7)
2. Stamped brake assembly

9. Remove seven bolts, nuts, and washers (Figure 2, Item 1), and stamped brake assembly (Figure 2, Item 2) from axle flange. Discard bolts, nuts, and washers.

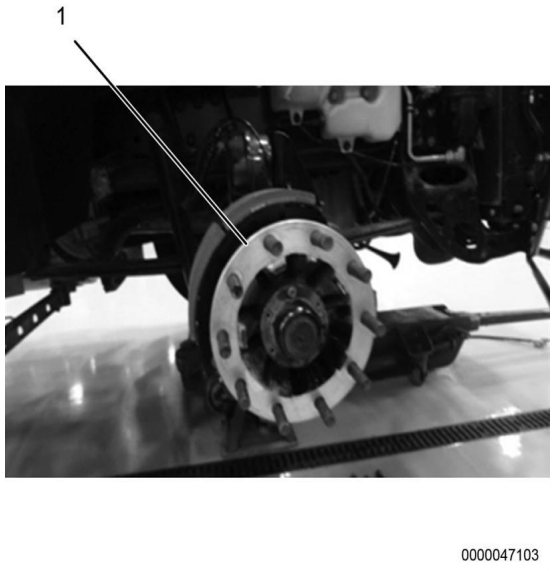

Figure 3. Axle Mount Flange.
1. Axle mount flange

10. Clean rust and debris from axle mount flange (Figure 3, Item 1).

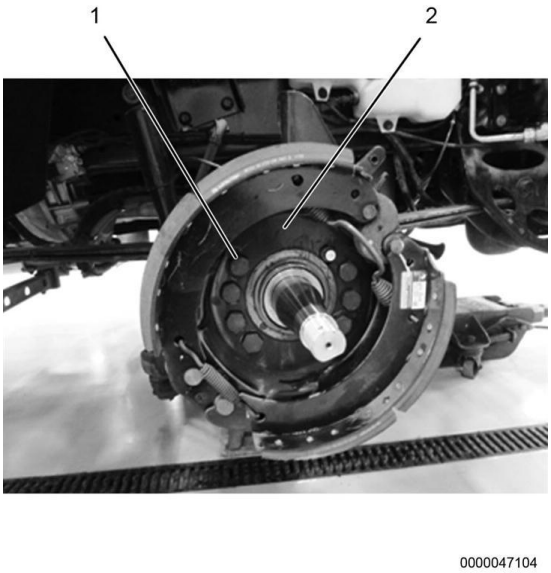

Figure 4. Cast Brake Assembly.
1. Bolt, nut, and washer (7)
2. Cast brake assembly

11. Install cast brake assembly (Figure 4, Item 2) on axle flange with seven bolts, nuts, and washers (Figure 4, Item 1). Torque bolts to 275-300 lb-ft (372-407 N·m).

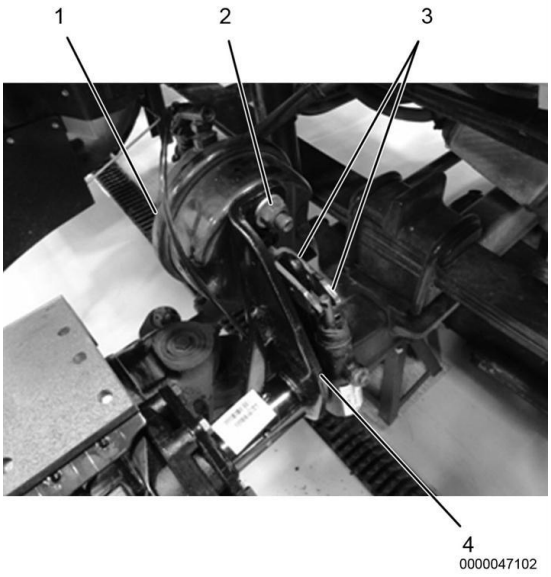

Figure 5. Brake Chamber Assembly.
1. Brake chamber
2. Nut and washer (2)
3. Clevis pin and clip (2)
4. Winged bracket

12. Install brake chamber (Figure 5, Item 1) on winged bracket (Figure 5, Item 4) with two nuts and washers (Figure 5, Item 2). Torque nuts to 70-100 lb-ft (95-136 N·m).

13. Install two clevis pins and clips (Figure 5, Item 3) into yoke on brake chamber (Figure 5, Item 1) shaft.

14. Remove and discard wheel seal.

15. Install new wheel seal.

WARNING:

Failure to fill the hub with the correct amount of lubricant can cause premature failure of the PreSet® hub assembly, which may result in property damage, personal injury, or death.

16. Vehicle may be equipped with PreSet® or PreSet Plus® hub assembly. If equipped with PreSet® hub, proceed to Step 16a. If equipped with PreSet Plus®, proceed to Step 16b.

a. If equipped, install PreSet® hub as follows:

i. Clean spindle and remove any lubricant, corrosion prevention coating, foreign material, or surface rust that may be present.

ii. Lubricate bearing journals on spindle, or inside diameter of bearing cones, with Grade 2 grease or lubricant that will be used in wheel end.

iii. Lubricate inside diameter of seal with same lubricant used in wheel end.

iv. Hold bearing spacer and outer bearing cone in place while installing hub assembly onto spindle.

v. Using a smooth, firm motion, place hub onto spindle. Verify alignment between spindle, bearing cones, and bearing spacer.

CAUTION :

Make sure to maintain alignment between spindle, bearing cones, and bearing spacer to prevent damage to seal or ABS tone ring.

vi. Torque spindle nut to following values:

1. If one-piece spindle nut is equipped, torque to 300 lb-ft (407 N·m) while rotating hub. Do not back off spindle nut.

2. If double jamnut system is equipped, torque inner spindle nut to 300 lb-ft (407 N·m) while rotating hub. Do not back off spindle nut. Install outer spindle nut and torque to 200 lb-ft (271 N·m).

3. Install hub cap with new gasket. Torque hub cap bolts to 12-18 lb-ft (16-24 N·m).

CAUTION :

Make sure to engage any locking device.

WARNING:

Failure to fill the hub with the correct amount of lubricant can cause premature failure of the PreSet® hub assembly, which may result in property damage, personal injury, or death.

b. If equipped, install PreSet Plus® hub as follows:

i. Clean spindle and remove any lubricant, corrosion prevention coating, foreign material, or surface rust that may be present.

ii. Lubricate bearing journals on spindle, or inside diameter of bearing cones, with Grade 2 grease or lubricant that will be used in wheel end.

iii. Lubricate inside diameter of seal with lubricant that will be used in wheel end.

iv. Remove red locking snap ring from spindle nut.

v. Make sure bearing spacer is in proper alignment.

vi. Align key or flat on washer with keyway or flat on spindle as hub is placed onto spindle.

vii. Using a smooth, firm motion, place hub onto spindle.

viii. When threads on nut engage threads on spindle, rotate nut clockwise to fully engage threads.

ix. Torque spindle nut to 300 lb-ft (407 N·m) while rotating hub. Do not back off spindle nut.

x. Visually examine three holes on face of spindle. One hole will line up with holes in inner washer.

xi. Install tab of red locking snap ring through hole in nut and washer that are aligned.

CAUTION :

Do not bend locking ring permanently. If locking ring is damaged or bent, replace with new.

xii. Spread locking ring, push over spindle nut, and into machined grooves in spindle nut.

xiii. Install hub cap with new gasket. Torque hub cap bolts to 12-18 lb-ft (16-24 N·m).

17. Install wheel and drum following service procedures in Wheels, Rims, and Tires Service Manual.

18. Adjust slack adjuster following Meritor slack adjustment procedure (refer to http://www.meritor.com).

19. Repeat Steps 4 through 18 on opposite side.

20. Raise vehicle with jack and remove jackstands, then lower vehicle.

21. Remove wheel chocks.

22. Burnish brakes and perform test drive as follows:

a. While driving vehicle at 20 mph (32 km/h), apply brakes to reduce speed at approximately 10 ft (3.05m) per second, to 5 mph (8 km/h). Repeat this operation 10 times at regular intervals of 500 ft (150 m) or 0.1 mi (0.16 km) without stopping vehicle.

b. After 10 brake applications, make one complete stop from 20 mph (32 km/h) to 0 mph (0 km/h).

c. Check drum temperatures immediately after burnishing. Drums that are cooler (approximately 50°F [10°C] side-to-side or 100°F [38°C] front-to-rear) than others indicate a possible lack of braking effort on those wheels.

i. If brake imbalance is observed in Step 22c, create an iKNow case file or call Navistar Technical Support at 800-336-4500.

d. Allow brakes to cool to ambient temperature. Readjust all brakes manually.