

# ***SERVICE PROCEDURE***

12530R1  
SEPTEMBER 2013

**SUBJECT: SAFETY RECALL**  
**Brake S-Cam tube bracket assembly on certain ProStar<sup>®</sup> models built 1 August 2011 thru 10 July 2012 and TranStar<sup>®</sup> models built 1 August 2011 thru 27 March 2012 with feature code 0504501, 0504504, or 04EWM**

## **DEFECT DESCRIPTION**

The brake S-Cam tube bracket assemblies on steer axles may exhibit fractures between the wing bracket and the steel tube when mounted to stamped spiders. These fractures may cause an inoperative brake on the affected wheel end, resulting in an unexpected pull condition during braking application or an unexpected increase in stopping distance, which may contribute to a vehicle crash.

## **MODELS INVOLVED**

This Safety Recall involves certain ProStar<sup>®</sup> models built 01 August 2011 thru 10 July 2012 and TranStar<sup>®</sup> models built 01 August 2011 thru 27 March 2012 with feature code 0504501, 0504504, or 04EWM.

## **PARTS INFORMATION**

**NOTE: You will need one of 8900238R91 and either 8900239R91 or 8900240R91 depending on the axle type in the vehicle you are working on. Order 2511003C1 ONLY if the unit you are working on is equipped with dust shields.**

| <b>Part Number</b> | <b>Part Description</b>           | <b>Quantity</b> |
|--------------------|-----------------------------------|-----------------|
| 8900238R91         | S-Cam Kit, Meritor Parts          | 1               |
| 8900239R91         | Kit, Dana / Meritor Axle Hardware | 1               |

|                       |                                 |   |
|-----------------------|---------------------------------|---|
| 8900240R91            | Kit, Hendrickson S-Cam Hardware | 1 |
| 2511003C1 If Equipped | Assy Shield, Dust               | 1 |

**8900238R91 contains the following parts:**

| Part Number | Part Description            | Quantity |
|-------------|-----------------------------|----------|
| 2612374C91  | Left Cast Spider            | 1        |
| 2612375C91  | Right Cast Spider           | 1        |
| 2510308C91  | Left Brake Chamber Bracket  | 1        |
| 2510307C91  | Right Brake Chamber Bracket | 1        |
| 2601674C1   | Screw Cap                   | 8        |
| 2024772C1   | Clip, Spring                | 2        |
| 2024771C1   | Clip, Spring                | 2        |
| 2258Y1273   | Spring, Return              | 2        |
| 2258H1230   | Spring, Retainer            | 4        |
| 1205G761    | O-ring, Spider              | 2        |

**8900239R91 contains the following parts:**

| Part Number | Part Description | Quantity |
|-------------|------------------|----------|
| CR453869-8  | Hub Cap Gasket   | 2        |
| CR35058     | Wheel Seal       | 2        |
| 3938834C1   | Bolt, Hex        | 14       |
| 3903995C1   | Washer, Special  | 14       |
| 9412368     | Nut, Hex         | 14       |

**8900240R91 contains the following parts:**

| Part Number | Part Description | Quantity |
|-------------|------------------|----------|
| CR453869-8  | Hub Cap Gasket   | 2        |
| CR35058     | Wheel Seal       | 2        |
| 3903995C1   | Washer, Special  | 14       |
| 9412368     | Nut, Hex         | 8        |
| 3926017C1   | Bolt             | 6        |
| 3918161C2   | Bolt             | 8        |

## **SERVICE PROCEDURE**

**WARNING!** PARK VEHICLE ON HARD FLAT SURFACE, TURN THE ENGINE OFF, SET THE PARKING BRAKE AND BLOCK THE WHEELS TO PREVENT THE VEHICLE FROM MOVING IN BOTH DIRECTIONS. 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.

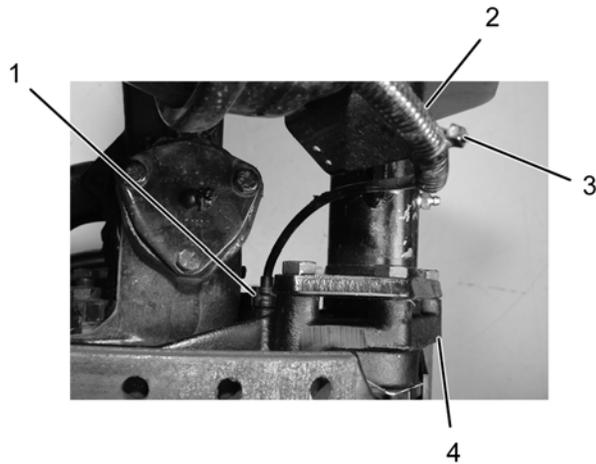
**WARNING!** ALLOW COMPONENTS IN ENGINE COMPARTMENT TO COOL BEFORE SERVICING ENGINE OR VEHICLE. FAILURE TO DO SO MAY RESULT IN PROPERTY DAMAGE, PERSONAL INJURY, AND / OR DEATH.

**WARNING!** KEEP FLAMES OR SPARKS AWAY FROM VEHICLE AND DO NOT SMOKE WHILE SERVICING THE VEHICLE'S BATTERIES. BATTERIES EXPEL EXPLOSIVE GASES. FAILURE TO DO SO MAY RESULT IN PROPERTY DAMAGE, PERSONAL INJURY, AND / OR DEATH.

**WARNING!** REMOVE THE GROUND CABLE FROM THE NEGATIVE TERMINAL OF THE BATTERY BOX BEFORE DISCONNECTING ANY ELECTRICAL COMPONENTS. ALWAYS CONNECT THE GROUND CABLE LAST. FAILURE TO DO SO MAY RESULT IN PROPERTY DAMAGE, PERSONAL INJURY, AND / OR DEATH.

1. Bring vehicle into shop and park on flat surface.
2. Shift transmission to park or neutral and set parking brakes.
3. Install wheel chocks.
4. Unlatch and open hood.
5. Using jack, raise truck and install jack stands under steer axle. Remove jack.

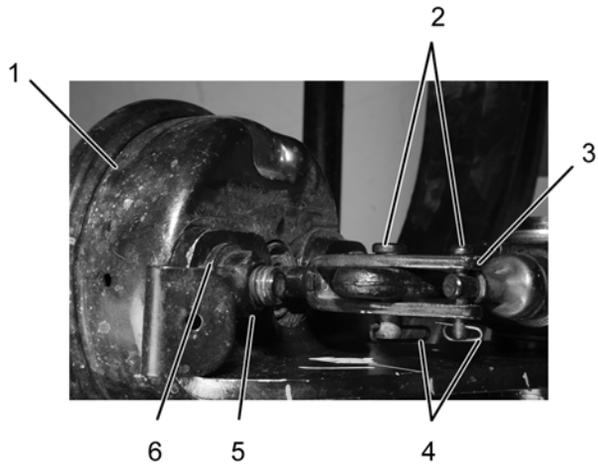
6. Remove hub cap, wheel, and drum following service procedures in Wheels, Rims, and Tires Service Manual.



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**Figure 1. Wheel Speed Sensor.**

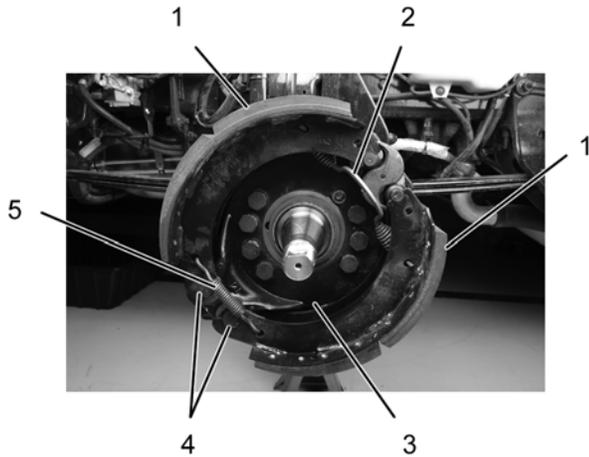
1. Wheel speed sensor
  2. ABS harness
  3. Tie strap
  4. Brake spider
7. Cut and remove tie strap (Figure 1, Item 3) from ABS harness (Figure 1, Item 2).
  8. Remove wheel speed sensor (Figure 1, Item 1) from front brake spider (Figure 1, Item 4).



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**Figure 2. Brake Chamber.**

1. Brake chamber
  2. Clevis pin (2)
  3. Winged bracket
  4. Clip (2)
  5. Nut (2)
  6. Washer (2)
9. Remove two clips (Figure 2, Item 4) and clevis pins (Figure 2, Item 2) from yoke of brake chamber (Figure 2, Item 1) shaft. Discard clips.
  10. Remove two nuts (Figure 2, Item 5), washers (Figure 2, Item 6), and brake chamber (Figure 2, Item 1) from winged bracket (Figure 2, Item 3).
  11. Remove hub following service procedure in appropriate ConMet service manual (refer to <http://www.conmet.com>).

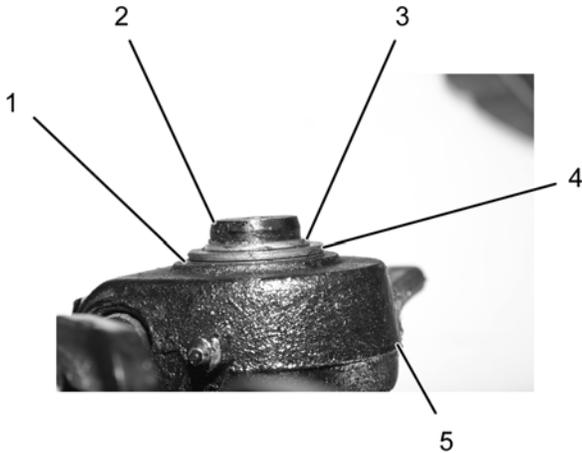


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**Figure 3. Brake Shoes.**

1. Brake shoe (2)
2. Return spring
3. Brake spider
4. Anchor pin (2)
5. Keeper spring (2)

12. Remove two keeper springs (Figure 3, Item 5), return spring (Figure 3, Item 2), two brake shoes (Figure 3, Item 1), and anchor pins (Figure 3, Item 4) from brake spider (Figure 3, Item 3). Discard return spring and two keeper springs.

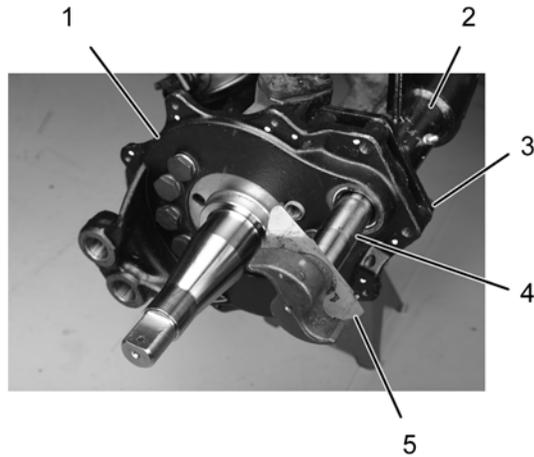


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**Figure 4. Camshaft Attaching Hardware.**

1. Spacer (as equipped)
2. Camshaft
3. Snap ring
4. Thrust washer
5. Slack adjuster

13. Remove snap ring (Figure 4, Item 3), thrust washer (Figure 4, Item 4), and spacer (as equipped) (Figure 4, Item 1) from camshaft (Figure 4, Item 2). Discard snap ring.
14. Clean and inspect thrust washers and spacer for possible use in installation.
15. Remove slack adjuster (Figure 4, Item 5) from camshaft (Figure 4, Item 2).

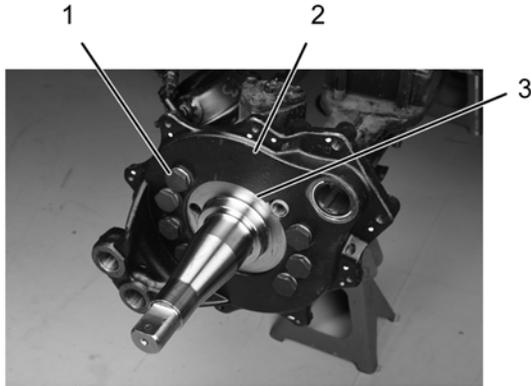


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**Figure 5. Front Brake Camshaft.**

1. Brake spider
2. Air chamber and brake camshaft support bracket
3. Bolt (4)
4. Camshaft
5. Cam head washer

16. Remove front brake camshaft (Figure 5, Item 4) and cam head washer (Figure 5, Item 5) from brake spider (Figure 5, Item 1) and air chamber and brake camshaft support bracket (Figure 5, Item 2). Discard cam head washer.
17. Remove four bolts (Figure 5, Item 3) and air chamber and brake camshaft support bracket (Figure 5, Item 2). Discard air chamber and brake camshaft support bracket.



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**Figure 6. Brake Spider.**

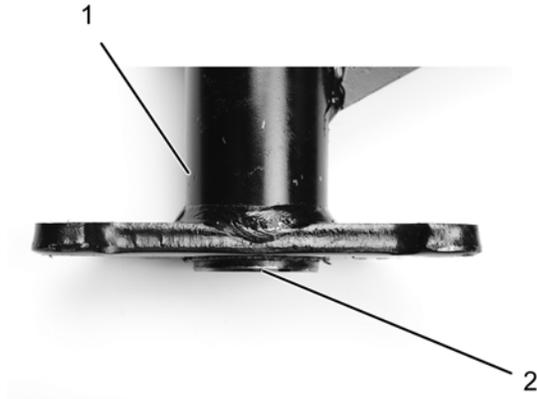
1. Bolt, washer, and nut (7)
2. Brake spider
3. Front axle spindle

18. Remove seven bolts, nuts, washers (Figure 6, Item 1), and brake spider (Figure 6, Item 2) from front axle spindle (Figure 6, Item 3). Discard bolts, nuts, washers, and brake spider.

19. Clean front axle spindle (Figure 6, Item 3) with a clean shop towel.

20. Install new brake spider (Figure 6, Item 2) on front axle spindle (Figure 6, Item 3) with seven new washers, bolts, and nuts (Figure 6, Item 1).

21. Using torque wrench, torque seven bolts (Figure 6, Item 1) to 275 - 300 lb-ft (373 - 407 N•m).

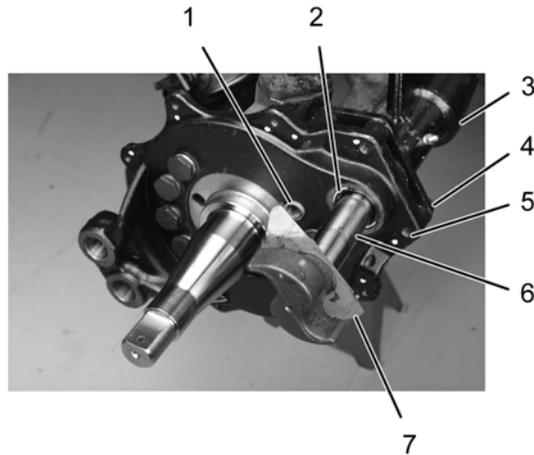


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**Figure 7. Air Chamber and Brake Camshaft Support Bracket O-ring.**

1. Air chamber and camshaft support bracket
2. O-ring

22. Install new O-ring (Figure 7, Item 2) onto pilot end of new air chamber and brake camshaft support bracket (Figure 7, Item 1).

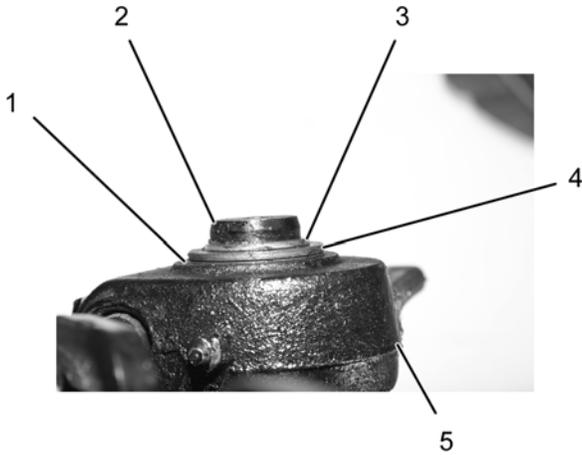


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**Figure 8. Brake Camshaft Installation.**

1. Brake spider bushing
2. Air chamber and camshaft support bracket bushing
3. Air chamber and brake camshaft support bracket
4. Bolt (4)
5. Brake spider
6. Camshaft
7. Cam head washer

23. Position new air chamber and brake camshaft support bracket (Figure 8, Item 3) onto brake spider (Figure 8, Item 5) with four bolts (Figure 8, Item 4).
24. Using torque wrench, torque four bolts (Figure 8, Item 4) (in a cross pattern) to 90 - 120 lb-ft (122 - 163 N•m).
25. Lubricate brake spider bushing (Figure 8, Item 1) and seals with grease.
26. Lubricate air chamber and camshaft support bracket bushing (Figure 8, Item 2) and seals with grease.
27. Install new cam head washer (Figure 8, Item 7) and camshaft (Figure 8, Item 6) into air chamber and brake camshaft support bracket (Figure 8, Item 3).

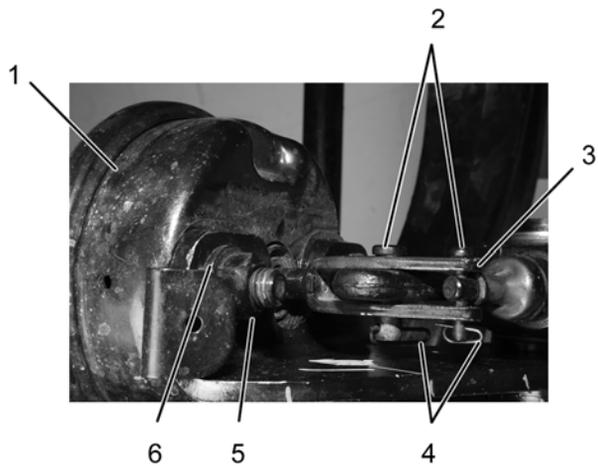


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**Figure 9. Camshaft Attaching Hardware.**

1. Spacer (as necessary)
2. Camshaft
3. Snap ring
4. Thrust washer
5. Slack adjuster

28. Install slack adjuster (Figure 9, Item 5) onto camshaft (Figure 9, Item 2), with spacers (as necessary) (Figure 9, Item 1), new thrust washer (Figure 9, Item 4), and new snap ring (Figure 9, Item 3).



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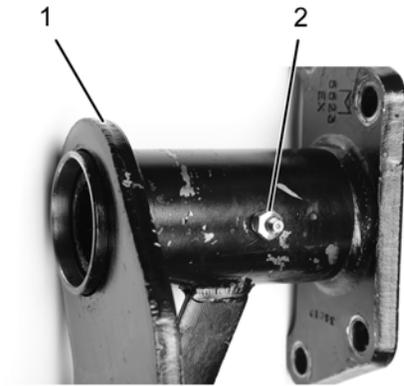
**Figure 10. Brake Chamber.**

1. Brake chamber
2. Clevis pin (2)
3. Winged bracket
4. Clip (2)
5. Nut (2)
6. Washer (2)

29. Install brake chamber (Figure 10, Item 1) onto winged bracket (Figure 10, Item 3) with two washers (Figure 10, Item 6) and nuts (Figure 10, Item 5).

30. Using torque wrench, torque two nuts (Figure 10, Item 5) to 130 - 150 lb-ft (176 - 203 N•m).

31. Install two clevis pins (Figure 10, Item 2) and new clips (Figure 10, Item 4) into yoke of brake chamber (Figure 10, Item 1) shaft.



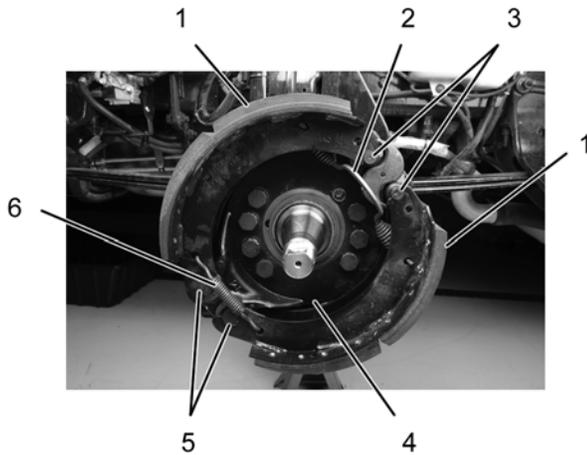
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**Figure 11. Air Chamber and Brake Camshaft Support Bracket Fitting.**

1. Air chamber and brake camshaft support bracket
2. Grease fitting

32. Install grease fitting (Figure 11, Item 2) into air chamber and brake camshaft support bracket (Figure 11, Item 1).

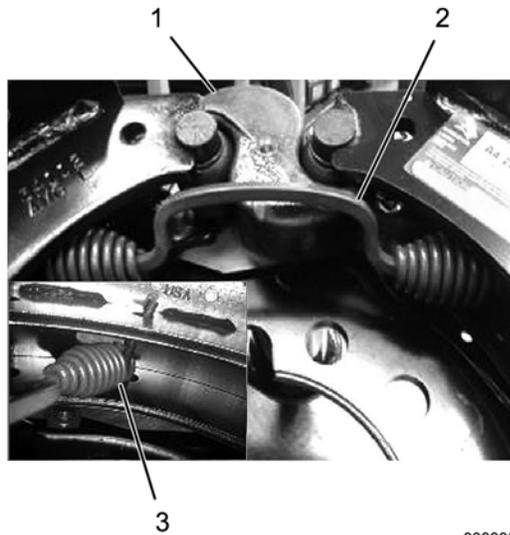
33. Lubricate grease fitting (Figure 11, Item 2).



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**Figure 12. Brake Shoes.**

1. Brake shoe (2)
2. Return spring
3. Roller with retainer (2)
4. Brake spider
5. Anchor pin (2)
6. Keeper spring (2)



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**Figure 13. Return Springs.**

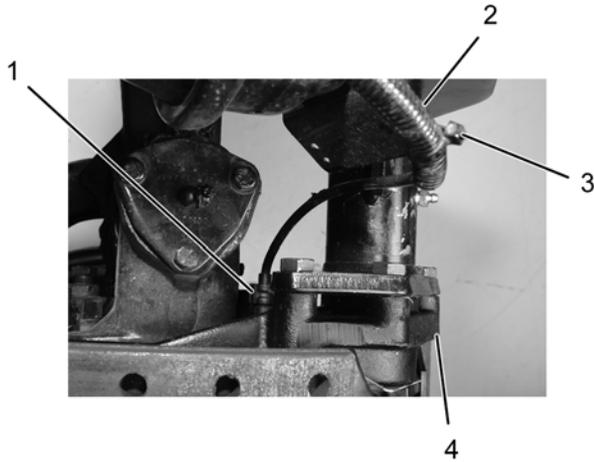
1. Cam head
2. Center bar spring
3. Hook

34. Install two anchor pins (Figure 12, Item 5) into brake spider (Figure 12, Item 4).

**CAUTION: Return spring hooks must be installed toward brake shoe rollers and center bar spring touching cam head. Failure to do so may result in property damage.**

35. Install brake shoes (Figure 12, Item 1), new return spring (Figure 12, Item 2), with hooks (Figure 13, Item 3) toward brake shoe rollers and center bar spring (Figure 13, Item 2) touching cam head (Figure 13, Item 1), and two new keeper springs (Figure 12, Item 6) onto brake spider (Figure 12, Item 4).

36. Install two rollers with retainers (Figure 12, Item 3) on brake shoes (Figure 12, Item 1).



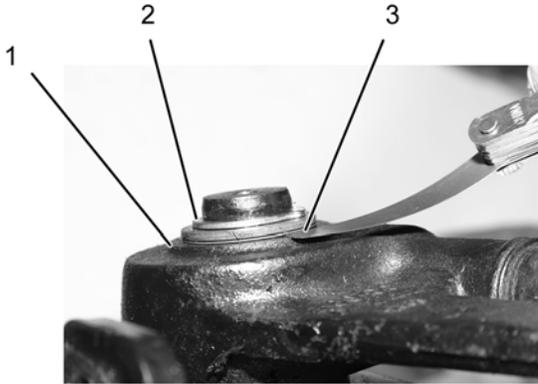
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**Figure 14. Wheel Speed Sensor.**

1. Wheel speed sensor
2. ABS harness
3. Tie strap
4. Brake spider

37. Install wheel speed sensor (Figure 14, Item 1) into front brake spider (Figure 14, Item 4).

38. Install new tie strap (Figure 14, Item 3) onto ABS harness (Figure 14, Item 2).



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**Figure 15. Axial End Play.**

1. Slack adjuster
2. Snap ring
3. Axial end play

**NOTE: If shims need to be added to obtain correct axial endplay, use removed shims provided they are not damaged.**

39. Verify axial end play (Figure 15, Item 3) on slack adjuster (Figure 15, Item 1) is 0.005 - 0.010 in (0.127 - 0.254 mm). If axial end play is not 0.005 - 0.010 in (0.127 - 0.254 mm), remove snap ring (Figure 15, Item 2) and add or remove appropriate number of shims and / or spacers until correct end play is obtained.
40. Remove and discard wheel seal.
41. Inspect wheel bearing cup for damage. If damaged, replace wheel bearing cup.
42. Inspect wheel bearing cone for damage. If damaged, replace wheel bearing cone.
43. Install new wheel seal.

**WARNING: Fill hub with correct amount of lubricant to prevent premature failure of the PreSet<sup>®</sup> hub assembly, which may result in property damage, personal injury, and / or death.**

44. Vehicle may be equipped with PreSet<sup>®</sup> or PreSet<sup>®</sup> Plus<sup>™</sup> hub assembly.

- If equipped with PreSet<sup>®</sup> hub, proceed to Step 44a.
- If equipped with PreSet<sup>®</sup> Plus<sup>™</sup> hub, proceed to Step 44i.
- If not equipped with PreSet<sup>®</sup> or PreSet<sup>®</sup> Plus<sup>™</sup> hub assembly, refer to [Axle Jamb Nut Installation Procedure in Service Manual Section Hubs, Bearings, and Seals \(Non-Drive Axles\) s02002s.](#)
  - a. Clean spindle and remove any lubricant, corrosion prevention coating, foreign material, or surface rust that may be present.
  - b. Lubricate bearing journals on spindle, or inside diameter of bearing cones, with Grade 2 grease or lubricant that will be used in wheel end.
  - c. Lubricate inside diameter of seal with same lubricant used in wheel end.
  - d. Hold bearing spacer and outer bearing cone in place while installing hub assembly onto spindle.
  - e. 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. Failure to do so may result in damage to equipment.**

**NOTE: Make sure to engage any locking device.**

- f. If equipped with one-piece spindle nut, using torque wrench, torque spindle nut to 300 lb-ft (407 N•m). Do not back off spindle nut.
- g. If equipped with double jamnut, using torque wrench, 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 using torque wrench, torque outer spindle nut to 200 lb-ft (271 N•m).
- h. Install hub cap with new gasket. Using torque wrench, torque hub cap bolts to 12 - 18 lb-ft (16 - 24 N•m).

- i. Clean spindle and remove any lubricant, corrosion prevention coating, foreign material, or surface rust that may be present.
- j. Lubricate bearing journals on spindle, or inside diameter of bearing cones, with Grade 2 grease or lubricant that will be used in wheel end.
- k. Lubricate inside diameter of seal with same lubricant used in wheel end.
- l. Remove red locking snap ring from spindle nut.
- m. Make sure bearing spacer is in proper alignment.
- n. Align key or flat washer with any keyway or flat on spindle as hub is placed onto spindle.
- o. Using a smooth, firm motion, place hub onto spindle.
- p. When threads on nut engage threads on spindle, rotate nut clockwise to fully engage threads.
- q. Using torque wrench, torque spindle nut to 300 lb-ft (407 N•m). Do not back off spindle nut.
- r. Visually examine three holes on face of spindle. One hole will line up with holes in inner washer.
- s. Install tab of red locking snap ring through holes in nut and washer that are aligned.

**CAUTION: Do not bend locking ring permanently. If locking ring is damaged or bent, replace locking ring. Failure to do so may result in damage to equipment.**

- t. Spread locking ring and push over spindle nut and into machined grooves in spindle nut.
- u. Install hub cap with new gasket. Using torque wrench, torque hub cap bolts to 12 - 18 lb-ft (16 - 24 N•m).

45. Install drum, wheel, and hub cap following service procedures in [Wheels, Rims, and Tires Service Manual](#).

46. Reset initial brake adjustment by performing the following:

- a. Check BSAP.

- b. Adjust slack adjuster to clevis. Do not pull clevis to slack adjuster.
  - c. Adjust slack adjuster until resistance is felt and drum is difficult to turn, then back off 1/2 turn.
  - d. Measure free stroke. Should be 1/2 in – 5/8 in max and close to equal side to side per axle.
47. Repeat Steps 6 - 46 on opposite front wheel.
48. Raise truck with jack and remove jackstands, then lower vehicle.
49. Remove wheel chocks.
50. Start engine and while driving vehicle at 20 mph (32 km/h), apply brakes to reduce speed at approximately 10 ft (3.05 m) 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 truck.
51. After 10 brake applications, make one complete stop from 20 mph - 0 mph (32 km/h - 0 km/h).
52. 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.
53. If brake imbalance is observed in Step 52, create an iKNow case file or call Navistar Technical Support at 800-336-4500.
54. Allow brakes to cool to ambient temperature. Readjust all brakes manually.

## **END OF SERVICE PROCEDURE**

## LABOR INFORMATION

| Operation Number | Description  | Time      |
|------------------|--|-----------|
| A40-12530-1      | Replace brake spider and S-cam tube bracket (both sides) | 2.6 hours |

## CAMPAIGN IDENTIFICATION LABEL

Each vehicle corrected in accordance with this campaign must be marked with a CTS-1075 Campaign Identification Label.

Complete the label and attach on a clean surface next to the vehicle identification number (VIN) plate.



The image shows a black rectangular label template with white text. At the top and bottom, it says "DO NOT REMOVE". In the center, there is a white rounded rectangle containing the word "INTERNATIONAL" in bold. Below that, there are fields for "Campaign No.", "VIN", "Eng.#", "COMPLETED", and "Service Location Code #".

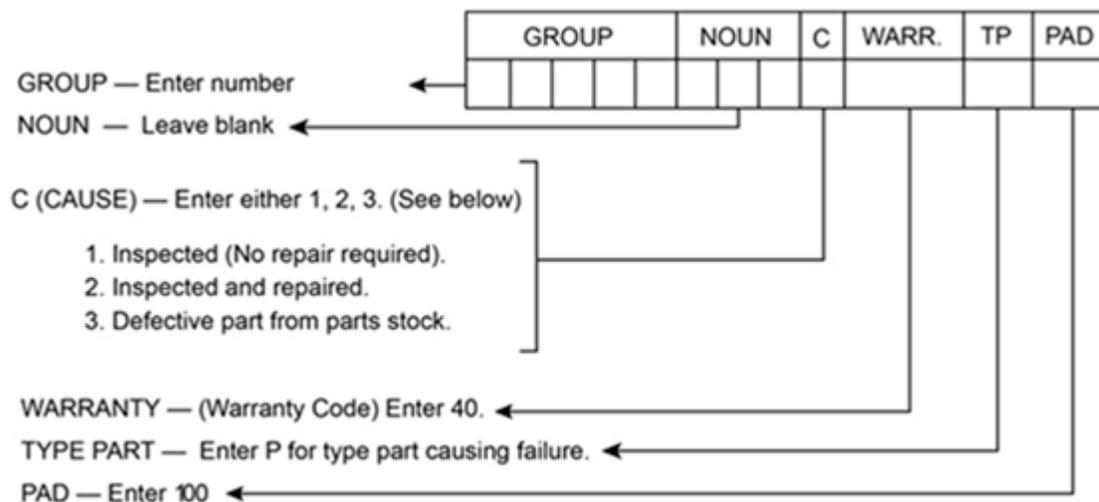
## ADMINISTRATIVE/DEALER RESPONSIBILITIES

### WARRANTY CLAIMS

Warranty claim expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Safety Recall 12530R1.

It is important that the coding be completed properly to assist in processing the warranty claim. Complete instructions will be found in the Warranty Policy Manual, Section 7.1.8.

As with all claim submissions, items acquired locally must be submitted in the "Other Charges" tab. The cost of any bulk items (such as a bag of cable tie straps, roll of wire, barrel of oil, or a tube of silicone) should be prorated for the cost of the individual pieces / amount used during each repair.



### UNITED STATES AND POSSESSIONS

The National Traffic and Motor Vehicle Safety Act, as amended, provides that each vehicle that is subject to a vehicle recall campaign must be adequately repaired within a reasonable time after the owner has tendered it for repair. A failure to adequately repair within 60 days after a tender of a vehicle is prima facie evidence of failure to repair within a reasonable time. If the condition is not adequately repaired within 60 days, the owner may be entitled to replacement with an identical or reasonable equivalent vehicle at no charge, or to a refund of the purchase price less a reasonable allowance for depreciation.

Dealers must correct all vehicles subject to this campaign at no charge to the owner, regardless of mileage, age of vehicle, or ownership, from this time forward.

Dealers should proceed immediately to make necessary correction to units in inventory. All inventory vehicles subject to this recall campaign must be corrected prior to sale, transfer or delivery. If vehicles have been sold or transferred and you are in receipt of Customer Notification Letters and Authorization for Recall Service cards for those vehicles, the transfer location or customer must be notified immediately from your dealer location.

Dealers must make every effort to promptly schedule an appointment with each owner to repair his or her vehicle as soon as possible. However, consistent with the customer notification, dealers are expected to complete the repairs on the mutually agreed upon service date.

Dealers involved in the recall process will be furnished a listing of owner names and addresses to enable them to follow up with owners and have the vehicles corrected. Use of this listing must be limited to this campaign because the list may contain information obtained from state motor vehicle registration records, and the use of such motor vehicle registration data for purposes other than this campaign is a violation of law in several states.

## **CANADA**

Dealers must correct all vehicles subject to this campaign at no charge to the owner, regardless of mileage, age of vehicle, or ownership, from this time forward.

Dealers should proceed immediately to make necessary correction to units in inventory. All inventory vehicles subject to this recall campaign must be corrected prior to sale, transfer or delivery. If vehicles have been sold or transferred and you are in receipt of Customer Notification Letters and Authorization for Recall Service cards for those vehicles, the transfer location or customer must be notified immediately from your dealer location.

Dealers must make every effort to promptly schedule an appointment with each owner to repair his or her vehicle as soon as possible. However, consistent with the customer notification, dealers are expected to complete the repairs on the mutually agreed upon service date.

Dealers involved in the recall process will be furnished a listing of owner names and addresses to enable them to follow up with owners and have the vehicles corrected. Use of this listing must be limited to this campaign because the list may contain information obtained from state motor vehicle registration records, and the use of such motor vehicle registration data for purposes other than this campaign is a violation of law in several states.

## **EXPORT**

Export Distributors should proceed immediately to make necessary correction to units in inventory. All inventory vehicles subject to this recall campaign must be corrected prior to sale, transfer or delivery. If vehicles have been sold or transferred and you are in receipt of Customer Notification Letters and Authorization for Recall Service cards for those vehicles, the transfer location or customer must be notified immediately from your distributor location.

Export Distributors are to submit warranty claims in the usual manner making reference to this recall number.

Export Distributors are expected to provide full cooperation and follow-up with respect to this important subject matter. If you have any questions or need further assistance, please contact the Regional Service Manager at your regional office.

## **NAVISTAR, INC**