SERVICE PROCEDURE

25501
May, 2025

SUBJECT: **SAFETY RECALL**
Brake calipers on certain International® HV™ Series trucks built 7/4/2023 thru 10/21/2024, MV™ Series trucks built 7/3/2019 thru 10/28/2024 and WorkStar® Series trucks built 9/12/2018 thru 11/13/2018 with feature codes 0004JCC (Brake Rear Air Disc 18/24" sq Bk Chambers), 0004XCK (Rear Bendix Spicer ADB22X AB) and 0014UNA (Tandem RS 52" Intl).

CUSTOMER LETTER

Print ready (PDF file) copy of the Customer Letter

DEFECT DESCRIPTION

Within the normal maintenance intervals for air disc brake pad wear, the caliper may contact a suspension spring or axle U-bolt. The contact may hinder caliper movement, causing only the inner pad to deliver braking torque. Under certain braking conditions, this could extend the vehicle's stopping distance, potentially increasing the risk of a crash.

MODELS INVOLVED

This safety recall involves certain International® HV™ Series trucks built 7/4/2023 thru 10/21/2024, MV™ Series trucks built 7/3/2019 thru 10/28/2024 and WorkStar® Series trucks built 9/12/2018 thru 11/13/2018 with feature codes 0004JCC (Brake Rear Air Disc 18/24" sq Bk Chambers), 0004XCK (Rear Bendix Spicer ADB22X AB) and 0014UNA (Tandem RS 52" Intl).

ELIGIBILITY

This procedure applies ONLY to vehicles marked in the International® Service Portal℠ with Safety Recall 25501. Also complete any other open campaigns listed on the Service Portal at this time.

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TOOLS REQUIRED

Description	Tool Number
Air Disc Caliper Wrench	04-617-02
ConMet® Seal Installation Tool	107119

Table 1 Tools Required

PARTS INFORMATION

Part Number	Part Description	Quantity
CR47691XT	Wheel seal	2
3884306C91	Right Anchor Torque Plate	1
3884305C91	Left Anchor Torque Plate	1
FLTAWLG11KK	Renolit® HLT2 white grease or equivalent	As required
3566966C1	Axle flange gasket	2
BXK297277	Brake pad kit	2

Table 2 Parts Information

SERVICE PROCEDURE

WARNING! To prevent personal injury and / or death, or damage to property, park vehicle on hard flat surface, key OFF, set the parking brake, and install wheel chocks to prevent the vehicle from moving in both directions.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent personal injury and / or death, or damage to property, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent personal injury and / or death, or damage to property, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

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WARNING! To prevent personal injury and / or death, or damage to property, under no circumstances should the spring chamber be disassembled. Disassembly will release a powerful spring that may cause severe personal injury or death.

WARNING! To prevent personal injury and / or death, or damage to property, NEVER use an impact wrench to cage a spring or service brake assembly. An impact wrench may over-torque the release tool and cause damage to the pressure plate.

1. Park vehicle on flat surface.

2. Shift transmission to Park or Neutral and set parking brake.

3. Raise and support the vehicle so both of the rear axles are off the ground and the wheel assemblies are accessible.

4. Install wheel chocks to front wheels.

Front-Rear Axle Procedure

5. Using the dash-mounted air control valve, apply air to release the spring brakes (parking brakes).

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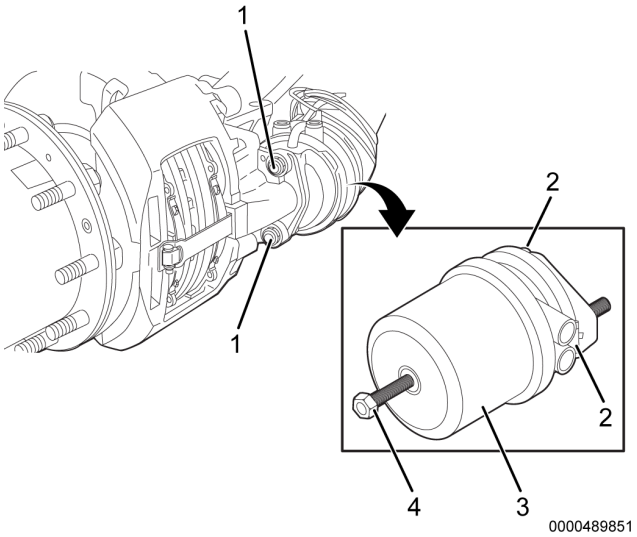

Figure 1. Brake Chamber

1. Mounting bolt (2)
2. Main diaphragm
3. Brake chamber housing
4. Brake chamber cage bolt

6. Back out the brake chamber cage bolt (Figure 1, Item 4), using a maximum torque of 26 lb-ft (35 N·m) to cage the air released spring force on the pushrod.

NOTE: On vehicles equipped with a driver-controlled differential lock, before air pressure is lost, the differential lock must be manually caged prior to removing the axle shaft. Failure to do so may make reinstallation of the axle shaft extremely difficult, time consuming, and potentially expensive.

7. Drain the air system.

8. Remove wheel and tire assemblies from both rear axles.

NOTE: Save parts for reinstallation.

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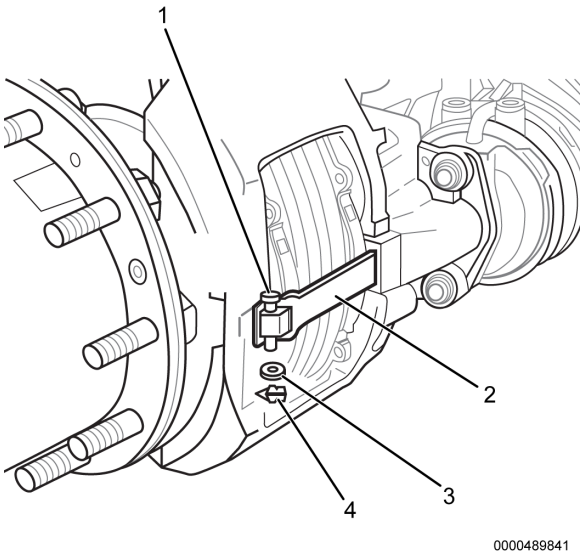

Figure 2. Caliper Hardware

1. Pin
2. Pad retainer bar
3. Washer
4. Spring clip

9. Remove the spring clip (Figure 2, Item 4) and washer (Figure 2, Item 3). While pressing against the pad retainer bar (Figure 2, Item 2), remove the pin (Figure 2, Item 1).

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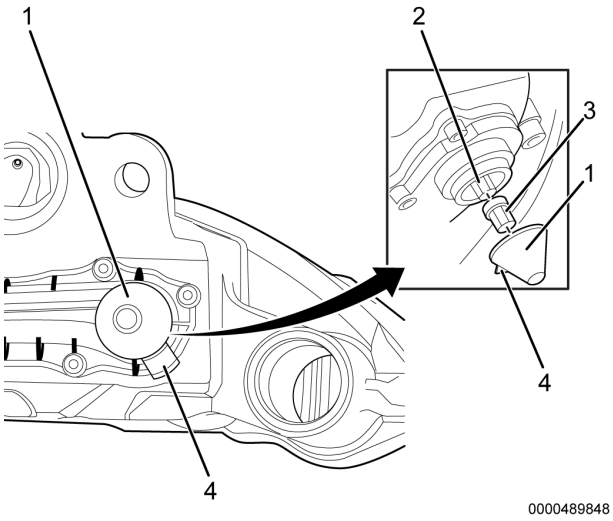

Figure 3. Brake Caliper Adjuster Cap

1. Adjuster cap
2. Adjuster
3. Shear adapter
4. Tab

10. With the spring brake released (or caged), remove the adjuster cap (Figure 3, Item 1) using the tab (Figure 3, Item 4), taking care not to move the shear adapter (Figure 3, Item 3).

11. Using a 10 mm, six-point box wrench, turn the adjuster counterclockwise until sufficient space exists to remove the brake pads. A clicking noise occurs each time the adjuster turns.

12. Move the caliper fully inward and remove the inboard pad, then move the caliper fully outward and remove the outboard pad.

13. Repeat the pad removal procedure for the other end of the axle.

14. Disconnect the air hose(s) to the brake chamber.

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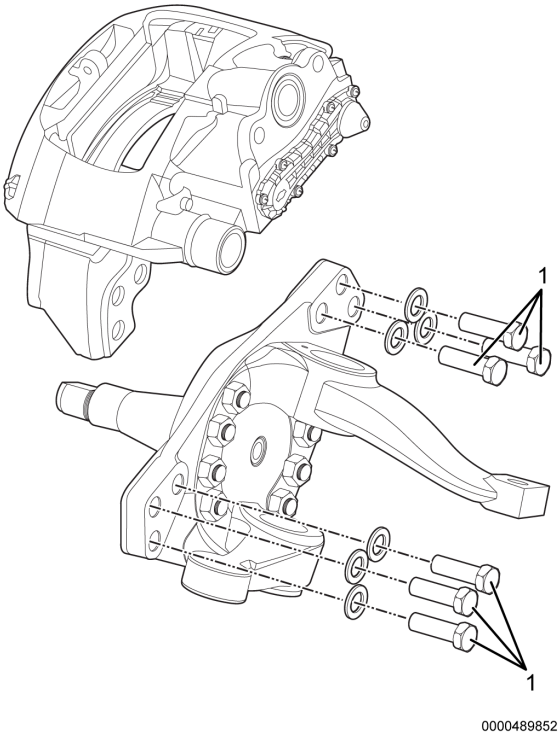

Figure 4. Brake Caliper Mounting Bolts
1. Caliper mounting bolt (6)

15. Supporting the air disc brake with a brake caliper hanger or wire, remove the six caliper mounting bolts (Figure 4, Item 1), and keep for reuse.

16. Swap the calipers from left to right but do not install until the anchor plate is installed.

17. Remove the axle shafts by removing the cap screws and washers, or stud nuts and washers from the flanges of both axle shafts.

18. Loosen the tapered dowels in the flanges of both axle shafts by holding a 1 1/2 inch diameter brass drift or hammer against axle shaft center and hitting it with a five to six pound hammer.

19. Remove the tapered dowels and both axle shafts from the axle assembly.

20. Discard the axle flange gasket.

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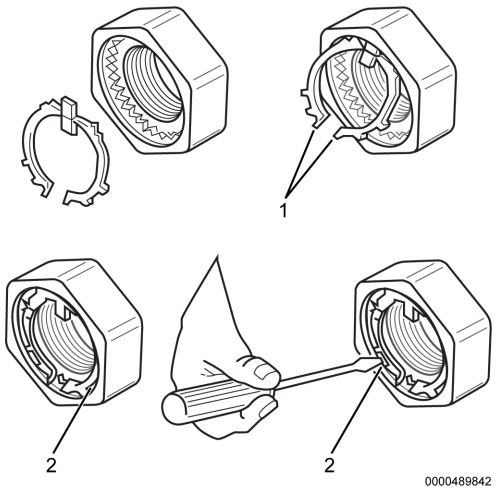

Figure 5. Single Pro-Torq® Nut with Keeper Ring

1. Keeper ring
2. Pro-Torq® nut

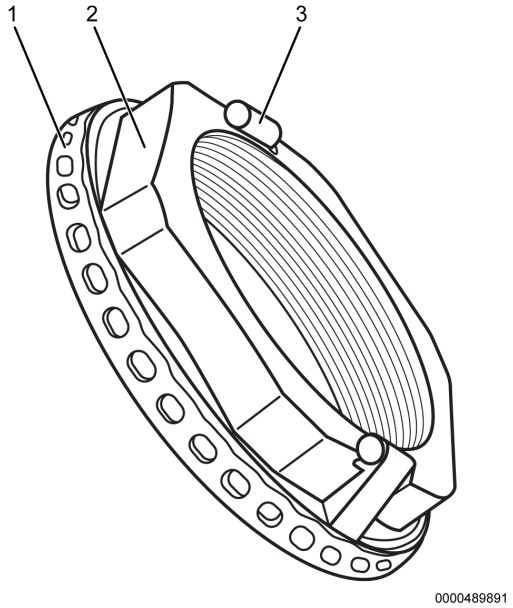

Figure 6. Axilok Nut with Integral Lock

1. Retainer cage
2. Nut body
3. Locking clip

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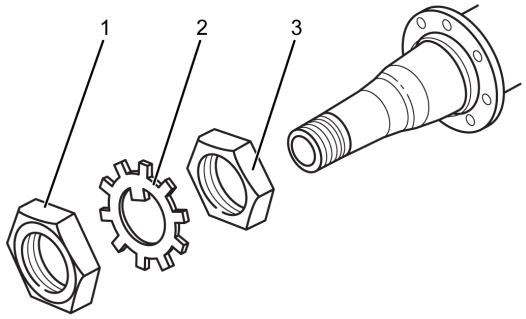

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Figure 7. Double Nut with Bend Type Lock Washer

1. Outer nut
2. Lock washer
3. Inner nut

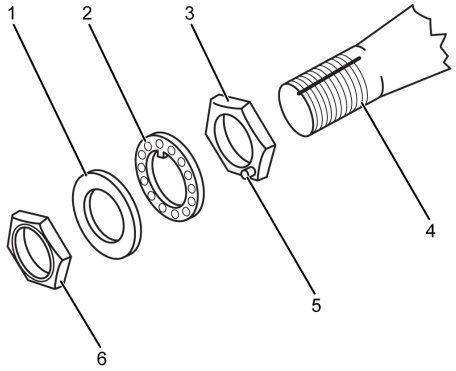

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Figure 8. Double Nut with Dowel Pin and Bending Washer

1. Bending washer
2. Spindle washer
3. Inner nut
4. Axle shaft
5. Dowel pin
6. Outer nut

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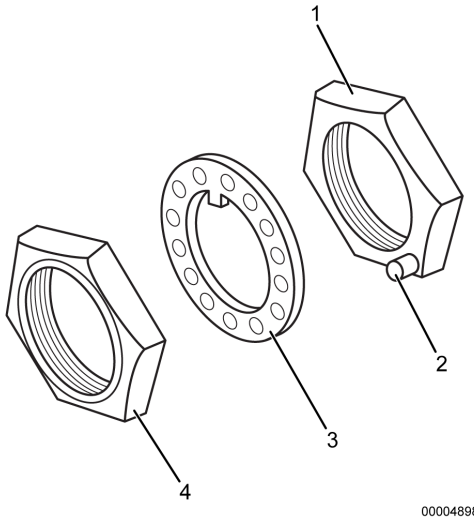

Figure 9. Double Nut with Dowel Pin and Spindle Washer

1. Inner nut
2. Dowel pin
3. Spindle washer
4. Outer nut

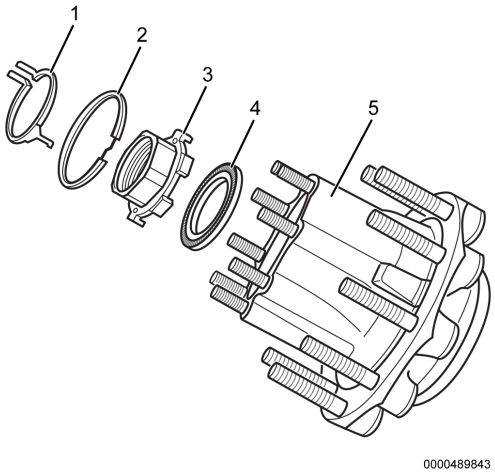

Figure 10. PreSet® Plus Hub Locking System

1. Outer snap ring
2. Outer bearing cup
3. Integrated nut
4. Inner bearing cup
5. Hub housing

21. Remove the hub and identify your axle hub locknut type (Figures 5, 6, 7, 8, 9, 10) as this will determine the hub adjustment process for reassembly.

22. Inspect the brake rotors for large cracks or signs of heat damage and replace the brake rotors if required.

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23. Remove the ABS sensor and retainer clip from the anchor plate assembly.

24. Remove the anchor torque plate assembly, keeping the nuts, bolts, and washers for reuse.

25. Position and install a new anchor torque plate for the right (3884306C91) and left (3884305C91) sides.

26. Using hardware retained during disassembly, install 10 anchor plate bolts.

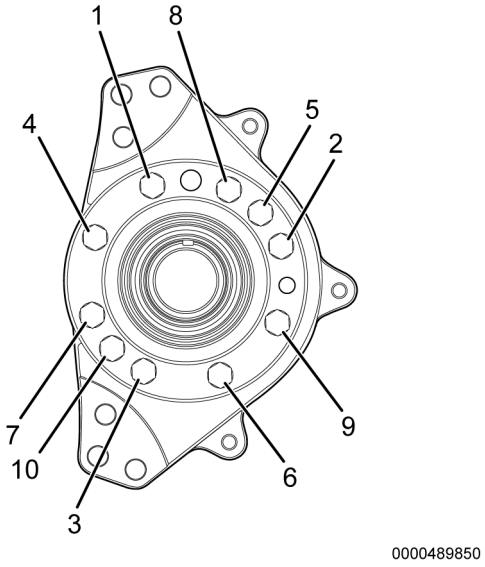

Figure 11. Brake Caliper Torque Sequence

27. Using a torque wrench, tighten the anchor plate bolts following the Brake Caliper Torque Sequence (Figure 11) to 175–190 lb-ft (240–260 N·m).

28. Reinstall the ABS sensor and retaining clip.

29. Secure the wire routing.

30. Replace the hub wheel seal and use a clean applicator to lightly lubricate the seal bore of the hub.

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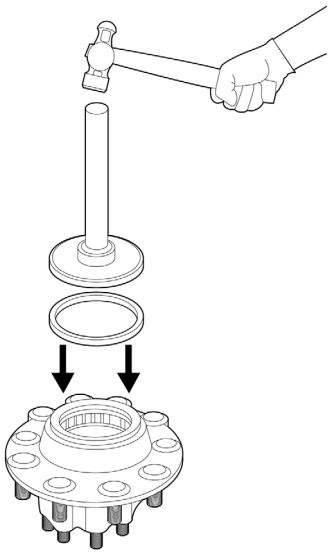

Figure 12. ConMet® Seal Installation Tool 107119

31. Position the seal into the hub bore and use a ConMet® seal installation tool 107119 (Figure 12) or flat plate and a small mallet to install the seal.

32. When installing the ConMet® seal, tap the adapter plate side of the installation tool or flat plate around the outer edge to position the seal, driving the wheel seal into place.

33. Lubricate the spindle.

34. Fill the cavity with appropriate oil.

35. Slide the hub firmly onto the spindle.

CAUTION! To prevent damage to property, do not back off the spindle nut. Advance as necessary to engage any locking device. If nut advancement is required for lock system engagement, the max torque shown below shall not be exceeded.

36. Torque the rear axle spindle nut according to the type of nut identified in Step 21.
    a. For a Pro-Torq® nut, install the Pro-Torq® nut and tighten to 300 + / - 25 lb-ft (405 N·m). Install the Pro-Torq® keeper. Visual inspection is required to ensure the keeper is fully engaged in the keeper slot. If the keeper cannot be inserted due to misalignment, advance the nut enough to install the keeper.

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b. For an Axilok nut, install the Axilok nut and tighten to 300 + / - 25 lb-ft (405 N·m). Visual inspection is required to ensure both locking clip tabs are engaged. If the tabs are not engaged, advance the nut until the tabs protrude through the slots in the adjustment ring.

c. For the PreSet® Plus hub setup with the locking snap ring, torque the spindle nut to 500 + / - 25 lb-ft (680 N·m) while rotating the hub. Visually examine to verify that one of the three holes in the spindle nut is lined up with one of the holes in the inner flat washer. Install the tab of the red snap ring through both holes in the aligned nut and washer. Spread and push the locking snap ring over the spindle nut and into the grooves of the spindle nut.

CAUTION! To prevent damage to property, do not damage or permanently bend the snap ring.

d. For double nut with bending type locking washer, install spindle inner nut and tighten to 300 + / - 25 lb-ft (405 N·m) while rotating the hub. Install locking spindle washer. Install outer spindle nut. Tighten outer spindle nut to 260 + / - 15 lb-ft (350 N·m). Secure outer nut by bending the retainer washer over one flat hex on the outer spindle nut. (For thread size up to and including 3.250 inch.)

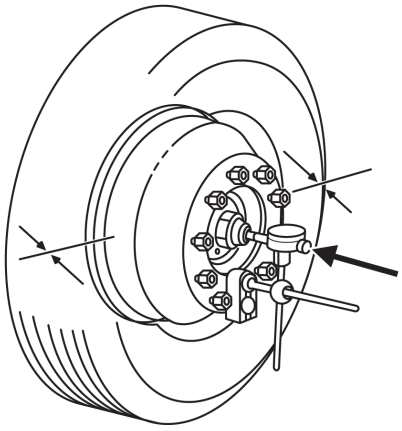

Figure 13. Hub and Drum / Rotor End Play

37. Check hub and drum / rotor end play with respect to the axle spindle (Figure 13). For manual adjustment systems, ensure that the end play is within the .001 to .005 inch specification.

CAUTION! To prevent damage to property, all caliper mounting bolt torquing procedures must use the torque wrench and Air Disc Caliper Wrench 04-617-02 at a 90-degree orientation. Failure to comply may result in an inaccurate final torque.

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NOTE: Torque wrench and Air Disc Caliper Wrench 04-617-02 should be positioned at a 90-degree orientation for all disc brake caliper bolt tightening procedures.

- **If the air disc caliper wrench is greater than 90 degrees in relation to torque wrench, the torque wrench applies more torque than specified.**

- **If the air disc caliper wrench is less than 90 degrees in relation to torque wrench, the torque wrench applies less torque than specified.**

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Figure 14. Caliper Mounting Bolt Torque Pattern

38. Using the hardware retained at disassembly, mount the caliper to the anchor plate, pre-torquing to 20–60 lb-ft (27–81 N·m) with a final torque of 350–400 lb-ft (475–540 N·m). Follow the Caliper Mounting Bolt Torque Pattern (Figure 14).

39. Install the brake pads, set up the caliper, and clean the surfaces that will come in contact with the brake pad.

40. To reinstall wear indicators (if used): Insert the wear sensors into position in the brake pads. Route the sensor cable through the cable protection plate channel and secure the plate with the mounting hardware retained at disassembly.

41. Pull the caliper fully outward and install the outboard pad. Move the caliper fully inward and install the inboard pad.

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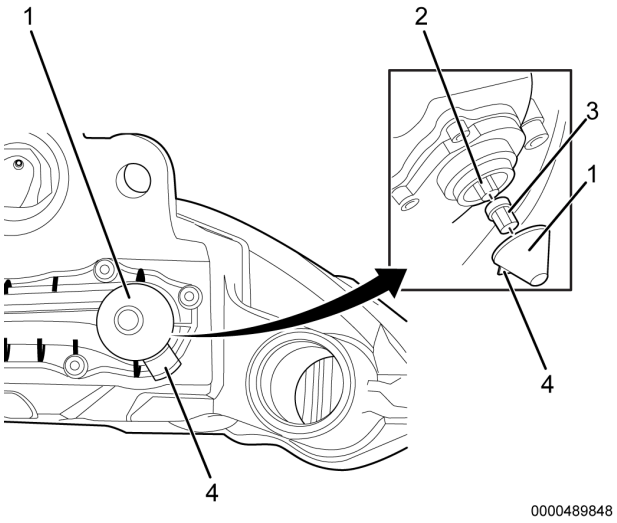

Figure 15. Brake Caliper Adjuster Cap

1. Adjuster cap
2. Adjuster
3. Shear adapter
4. Tab

NOTE: Do not use an open-ended wrench as this may damage the adapter.

42. Using a 10 mm, six-point box-end wrench, turn the shear adapter (Figure 15, Item 3) clockwise until the pads contact the rotor.

43. Using the same tool, turn the shear adapter (Figure 15, Item 3) counterclockwise and listen for the sound of three clicks as the mechanism backs-off (increases) the running clearance.

44. Lightly grease the adjuster cap with Renolit® HLT2 white grease or equivalent, then install the cap.

45. Push the pad retainer bar into the groove of the caliper.

46. Press down on the pad retainer bar, and insert the pad retainer pin with the pin pointing downwards, where possible.

47. Install the washer and then the spring clip.

48. Reinstall the air lines and axle shafts.

49. Place gaskets on wheel hub studs.

50. Push the right-side axle shaft into the wheel end and housing until the shaft stops against the differential shift collar.

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51. Push the axle shaft farther into the housing until the shaft stops against the differential side gear.

52. Push down on the axle shaft flange and rotate the shaft until the splines of the shaft and side gear are engaged.

53. Push the axle shaft completely into the housing until the axle shaft flange and gasket are flush against the wheel hub.

54. Install the left-side axle shaft and gasket into the wheel end.

55. Torque the axle shaft bolts to 145–175 lb-ft (195–240 N·m).

Rear-Rear Axle Procedure

56. Disconnect the air lines to the rear-rear axle calipers.

57. Referring to Step 9 above, remove the brake pads.

58. Referring to Step 15 above, remove the six caliper mounting bolts and keep for reuse.

59. Swap the calipers from the left to the right side.

60. Referring to Step 38 above, using the hardware retained during disassembly, mount the caliper to the anchor plate, torquing to 350–400 lb-ft (475–540 N·m) via the Caliper Mounting Bolt Torque Pattern (Figure 14).

61. Referring to Step 39 above, install pads and set up caliper per instructions.

62. Reinstall the air lines.

63. Remove the cage bolts.

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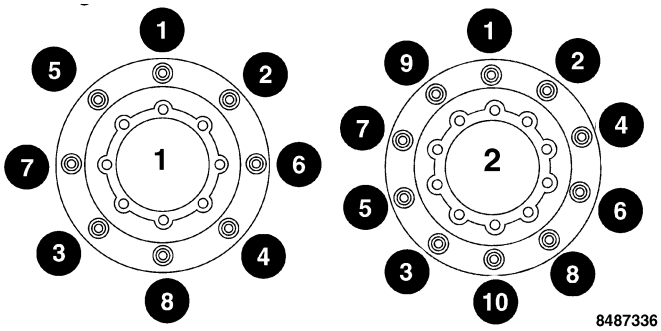

Figure 16. Flange Stud Mounts
1. Flange stud mount – 8 stud
2. Flange stud mount – 10 stud

64. Install rear wheels and, using torque wrench, tighten lug nuts (Figure 16, Items 1 or 2) to 450−500 lb-ft (610−678 N·m).

65. Remove jack stands.

END OF SERVICE PROCEDURE

LABOR INFORMATION

Operation Number	Description	Time
A40-25501-1	Swap brake calipers from side to side	5.0 hr

Table 3 Labor Information

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.

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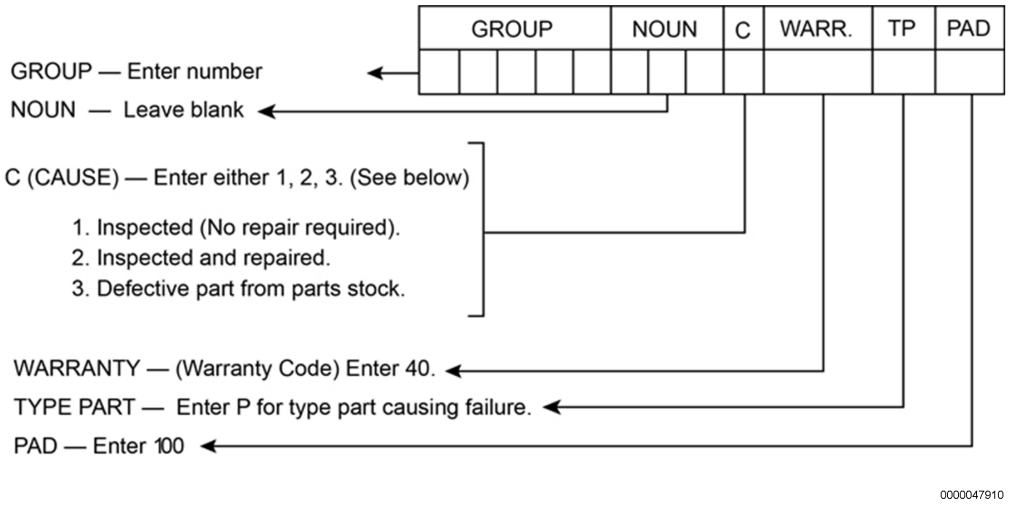
ADMINISTRATIVE / DEALER RESPONSIBILITIES

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 25501.

Section 7 of the Warranty Policy and Procedures Manual contains further information related to the submission and processing of AFC / Recall claims.

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 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.

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Dealers should proceed immediately to make necessary corrections to units in inventory. Federal law prohibits a dealer from delivering under a sale or lease, a new motor vehicle or any new or used item of motor vehicle equipment (including a tire) covered by the notification of a recall until the defect or noncompliance is remedied.

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 with 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 corrections 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 with 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.

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EXPORT

Export Distributors should proceed immediately to make necessary corrections 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.

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