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DEFECT INVESTIGATION

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Government Technical Affairs

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April 21, 2006

Dan Smith
Associate Administrator for Vehicle Safety
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

**Re: Defect Information Report – supplemental information
(FL-460), NHTSA no. 05V-467,
Meritor spindle on Meritor and AAC rear axle housings**

Mr. Smith:

In accordance with Part 573 of Title 49 of the Code of Federal Regulations, Freightliner LLC herewith submits supplemental defect information and copies of documents to be distributed to dealers and purchasers.

Please contact me if you have any questions.

Sincerely yours,

Timothy Blubaugh

Cc: Michael Mason, CAL-OSHA
DOSH, Legal Unit
10th Floor
455 Golden Gate Avenue
San Francisco, CA 94102

Enclosure

Certified Mail Article Number: 7003 2260 0001 3403 4438

Section 573.6 Defect Information Report
FL-460, Meritor spindle on Meritor and AAC rear axle housings;
NHTSA no. 05V-467
Supplement No.: 03

April 21, 2006

(c) (1) Manufacturer: FREIGHTLINER LLC
P.O. BOX 3849
Portland, Oregon 97208
(503) 745-5219

(c) (3) Total number of vehicles potentially affected: (Revise to read) 1,106

(c) (9) Communications sent to dealers: posted March 18, 2006
Communications sent to owners: mailed April 11, 2006

Recall Campaign

March 2006
FL460A
NHTSA #05V-467

Subject: ArvinMeritor Rear Axle Spindles

Models Affected: Specific Freightliner Argosy, Business Class M2, Century S/T, Classic, Columbia, Coronado, and FLD vehicles; Sterling A/L-Line, Acterra, and Condor vehicles; and Freightliner Custom Chassis FS65 and B2 (Thomas Built Buses C2) school bus chassis and XC motorhome chassis built between May 20, 2005, and October 27, 2005, with ArvinMeritor or AAC rear axle spindles.

General Information

Freightliner LLC, on behalf of its Freightliner Trucks Division and its wholly owned subsidiaries, Sterling Trucks Incorporated and Freightliner Custom Chassis Corporation, has decided that a defect which relates to motor vehicle safety exists on the vehicles mentioned above.

There are approximately 1,300 vehicles involved in this campaign.

Certain rear axle housings on ArvinMeritor and Axle Alliance Company (AAC) axles were manufactured with spindles that were overheated during the heat treatment process. Incorrectly heat treated spindles could fracture, resulting in a possible vehicle crash without prior warning.

The rear spindles will be inspected, and the axle housing will be replaced on vehicles with incorrectly heat treated spindles. The need for replacement is very low; approximately 29 housings are expected to require replacement.

Additional Repairs

Dealers must complete all outstanding recall and field service campaigns prior to the sale or delivery of a vehicle. A Dealer will be liable for any progressive damage that results from its failure to complete campaigns before sale or delivery of a vehicle.

Owners may be liable for any progressive damage that results from its failure to complete campaigns within a reasonable time after receiving notification.

Work Instructions

Please refer to the attached work instructions. Prior to performing the campaign, check the vehicle for a completion sticker (Form WAR260).

Replacement Parts

IMPORTANT: There are no replacements kits for this recall. When a housing requires replacement based on inspection, determine the correct housing by using PartsPro. Expedited shipping may be included on the recall claim when necessary.

If our records show your dealership has ordered any vehicles involved in campaign number FL460A, a list of the customers and vehicle identification numbers will be available on AccessFreightliner.com.

Removed Parts

Please follow Warranty Failed Parts Tracking shipping instructions for the disposition of all removed parts.

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Labor Allowance

Table 1 - Labor Allowance

NOTE: Vehicles may have one or two rear axles. For inspection-only claims, enter SRT 996-0665A once per spindle inspected. For replacement claims, enter 996-0665B once per housing replaced (the inspection time is included in this SRT). For claims that include both inspection and replacement, claim 996-0665B once for the axle with the housing being replaced and 996-0665A twice for the wheel ends on the axle that does not require replacement. **The need for replacement is very low; approximately 29 housings are expected to require replacement.**

Campaign Number	Procedure	Time Allowed (hours)	SRT Code	Damage Code
FL460A	Inspect rear axle spindle - one side of an axle (claim twice per axle)	0.4	996-0665A	000-Inspected
FL460A	Inspect spindles and remove/replace rear axle housing - one axle (claim once per axle housing replaced)	10.7	996-0665B	000-Modifiedx

Table 1

IMPORTANT: When the recall has been completed, locate the base completion label in the appropriate location on the vehicle, and attach the red completion sticker provided in the recall kit (Form WAR260). If the vehicle does not have a base completion label, clean a spot on the appropriate location of the vehicle and first attach the base completion label (Form WAR259). If a recall kit is not required or there is no completion sticker in the kit, write the recall number on a blank sticker and attach it to the base completion label.

Claims for Credit

You will be reimbursed for your parts, labor, and handling by submitting your claim through the Warranty system within 30 days of completing this campaign. Please reference the following information in QuickClaim®:

- Claim type is **Recall**.
- In the FTL Authorization field, enter the campaign number and appropriate condition code (**FL460A**).
- In the Primary Failed Part Number field, enter **25-FL460-000**.
- **IMPORTANT: There are no replacements kits for this recall. When a housing requires replacement based on inspection, determine the correct housing by using PartsPro. Expedited shipping may be included on the recall claim when necessary.**
- In the Labor field, first enter the appropriate SRT from the Labor Allowance Table. For administrative time, enter SRT 939-0010A for 0.4 hours for RVs or 0.3 hours for all other vehicles. See the note above Labor Allowance Table regarding entering SRTs.

NOTE: ServicePro®/Service Advisor® must be viewed prior to performing the recall to ensure the vehicle is involved and the campaign has not been previously completed. Also, check for a completion sticker prior to beginning work.

Contact the Warranty Campaigns Department at (800) 547-0712, from 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday, Web inquiry at AccessFreightliner.com / Support / Submit an Inquiry, or the Customer Assistance Center at (800) 385-4357, after normal business hours, if you have any questions or need additional information.

To return excess kit inventory related to this campaign, U.S. dealers must submit a Parts Authorization Return (PAR) to the Memphis PDC. Canadian dealers must submit a PAR to their facing PDC. All kits must be in resalable condition. PAR requests must include the original purchase invoice number.

The letter notifying vehicle owners is included for your reference.

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Please note that the National Traffic and Motor Vehicle Safety Act, as amended (49 USC), requires the owner's vehicle(s) be corrected within a reasonable time after parts are available to you. The Act states that failure to repair a vehicle within 60 days after tender for repair shall be prima facie evidence of an unreasonable time. However, circumstances of a particular situation may reduce the 60 day period. Failure to repair a vehicle within a reasonable time can result in either the obligation to (a) replace the vehicle with an identical or reasonably equivalent vehicle, without charge, or (b) refund the purchase price in full, less a reasonable allowance for depreciation. The Act further prohibits dealers from selling a vehicle unless all outstanding recalls are performed. Also, any lessor is required to send a copy of the recall notification to the lessee.

Finally, the Act states that a remedy need not be provided without charge if the vehicle was bought by the first purchaser more than ten (10) calendar years before notice is given.

Recall Campaign



March 2006
FL460A
NHTSA #05V-467

Copy of Letter to Owner Subject: ArvinMeritor Rear Axle Spindles

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. This notice is also sent in accordance with the Canadian Motor Vehicles Safety Act.

Freightliner LLC, on behalf of its Freightliner Trucks Division and its wholly owned subsidiary, Freightliner Custom Chassis Corporation, has decided that a defect which relates to motor vehicle safety exists on specific Freightliner Argosy, Business Class M2, Century S/T, Classic, Columbia, Coronado, and FLD vehicles; Sterling A/L-Line, Acterra, and Condor vehicles; and Freightliner Custom Chassis FS65 and B2 (Thomas Built Buses C2) school bus chassis and XC motorhome chassis built between May 20, 2005, and October 27, 2005, with ArvinMeritor or AAC rear axle spindles.

Certain rear axle housings on ArvinMeritor and Axle Alliance Company axles were manufactured with spindles that were overheated during the heat treatment process. Incorrectly heat treated spindles could fracture, resulting in a possible vehicle crash without prior warning.

The rear spindles will be inspected, and the axle housing will be replaced on vehicles with incorrectly heat treated spindles.

Contact your authorized dealer to arrange to have your vehicle(s) inspected. To locate a dealer, search online at www.FreightlinerTrucks.com or contact the Warranty Campaigns Department for assistance.

When you contact your dealer, refer to campaign number **FL460A**. The recall will take up to approximately an hour and a half for the inspection and up to an additional ten hours if the axle housing requires replacement and will be performed at no charge to you.

IMPORTANT: When the recall has been completed, please ensure that a label has been affixed to your vehicle referencing **FL460A**.

If you do not own the vehicle that corresponds to the identification number(s) which appears on the Recall Notification, please return the notification to the Warranty Campaigns Department with any information you can furnish that will assist us in locating the present owner. If you have leased this vehicle, please make sure this notification is immediately forwarded to the lessee. If you have paid to have this recall condition corrected prior to this notice, you may be eligible to receive reimbursement. Please see the reverse side of this notice for details.

If you are not able to have the defect remedied without charge and within a reasonable time, which is not longer than 60 days after you tender the vehicle for repair, please contact the Warranty Campaigns Department at (800) 547-0712, 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday, e-mail address WarrantyCampaigns@freightliner.com, or the Customer Assistance Center at (800) FTL-HELP or (800) STL-HELP, after normal business hours. You may also wish to submit a complaint to the Administrator, National Highway Traffic Safety Administration, 400 7th Street S.W., Washington, D.C. 20590; or call the Vehicle Safety Hotline at (888) 327-4236 (TTY: 800-424-9153); or to <http://www.safercar.gov>. If your vehicle is involved in the Canadian portion, you may wish to notify Transport Canada, ASFAD, Place de Ville Tower C, 330 Sparks Street, Ottawa, ON K1A 0N5, or phone (800) 333-0510.

We regret any inconvenience this action may cause but feel certain you understand our interest in motor vehicle safety.

WARRANTY CAMPAIGNS DEPARTMENT

Enclosure

Work Instructions

Subject: ArvinMeritor Rear Axle Spindles

Models Affected: Specific Freightliner Argosy, Business Class M2, Century S/T, Classic, Columbia, Coronado, and FLD vehicles; Sterling A/L-Line, Acterra, and Condor vehicles; and Freightliner Custom Chassis FS65 and B2 (Thomas Built Buses C2) school bus chassis and XC motorhome chassis built between May 20, 2005, and October 27, 2005, with Meritor or AAC rear axle housings.

Rear Spindle Date Code Inspection Procedure

IMPORTANT. There are no replacements kits for this recall. When a housing requires replacement based on inspection, determine the correct housing by using PartsPro. Expedited shipping may be included on the recall claim when necessary. **The need for replacement is very low; approximately 29 housings are expected to require replacement.**

1. Park the vehicle on a level surface. Shut down the engine, set the parking brake, and chock the tires.
2. Check the base label (Form WAR259) for a completion sticker for FL460 (Form WAR260) indicating this work has been done. The base label is usually located on the passenger-side door about 12 inches (30 cm) below the door latch.

If a sticker for FL460 is present, nothing further needs to be done. Remove the chocks from the tires.

If no sticker is present, go to the next step.

NOTE: It is not necessary to raise the vehicle or to remove the tires in order to check the axle-spindle date codes.

3. At one side of one rear axle, put a suitable basin under the driveshaft flange to catch any oil.
4. For Freightliner axles equipped with a driver-controlled differential lock, you must engage the lock at the dash control before removing the left-side axle driveshaft.

On Meritor axles equipped with a driver-controlled differential lock, you must cage the lock before removing the left-side axle driveshaft. See **Fig. 1**.

- 4.1 Drain the air tanks.
 - 4.2 Remove the manual-engaging capscrew from the storage hole in the carrier casting, next to the cylinder.
 - 4.3 Disconnect the air line and remove the fitting from the cylinder.
 - 4.4 Install the manual-engaging capscrew into the threaded hole in the center of the cylinder cover (where the air line fitting was). Turn the capscrew clockwise until the head of the capscrew is about 1/4 inch (6 mm) from the surface of the cylinder cover. Do not turn the capscrew any further.
5. Remove the drive-axle stud nuts.

WARNING

When tapping the center portion of a Meritor axle driveshaft, do not strike the circular driving lugs. To do so could cause pieces of a lug to break off, which could cause serious personal injury.

6. Using a hammer and a brass drift, sharply tap the center portion of the driveshaft flange, between the circular driving lugs (Meritor axles). See **Fig. 2**. The driveshaft (and the tapered dowels, if so equipped) will usually spring slightly outward after the seal has broken.

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7. Remove the axle driveshaft.
8. Check the surface of the axle spindle for the Julian date code. See **Fig. 3**.

The Julian date code consists of an alpha designator followed by four digits (e.g., *B1234*). If the date code is *B5129*, or *B5130*, replace the axle housing. Go to "Replacing the Axle Housing."

If the Julian date code on the spindle is *B5131*, check the secondary number next to the date code. If that number starts with an "S," replace the axle housing. If the secondary number starts with a "B," or any letter but "S," the axle spindle is all right.

If the Julian date code is not one of the three listed above, check the axle spindle on the opposite side of the axle, using the procedure above. There may be different axle spindles on the same axle housing.

9. Repeat the procedure, checking all the remaining rear-axle spindles on the vehicle. If any are found to have the affected Julian date codes, replace the axle housing. Go to "Replacing the Axle Housing."
10. If the axle housing does not need replacement, install the axle driveshafts, using new gaskets. Install the tapered dowels, if applicable.

For Meritor axles: Install the stud nuts and tighten them in the sequence shown in **Fig. 4**. See **Table 2** or **Table 3** for torque values.

For AAC axles: Install the stud nuts and tighten them in the sequence shown in **Fig. 4**, and to the following torque values:

- *Equipped with tapered dowels:* 130 to 140 lbf-ft (175 to 190 N-m)
- *Without tapered dowels:* 150 to 170 lbf-ft (203 to 230 N-m)

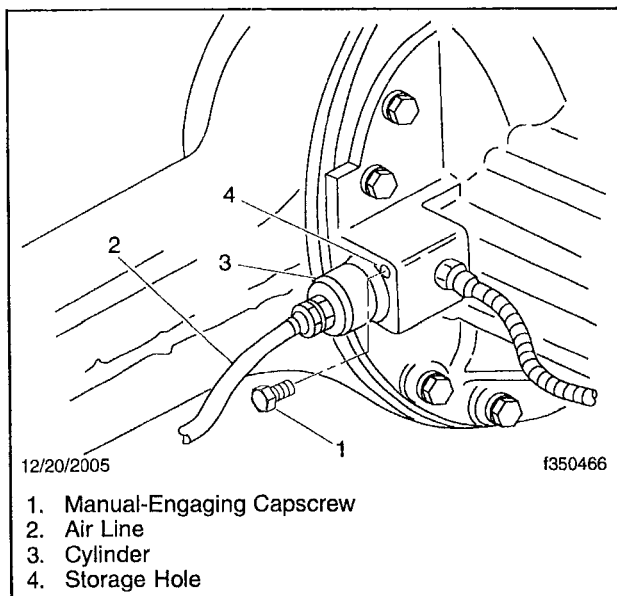


Fig. 1, Caging the Driver-Controlled Differential Lock (Meritor axles)

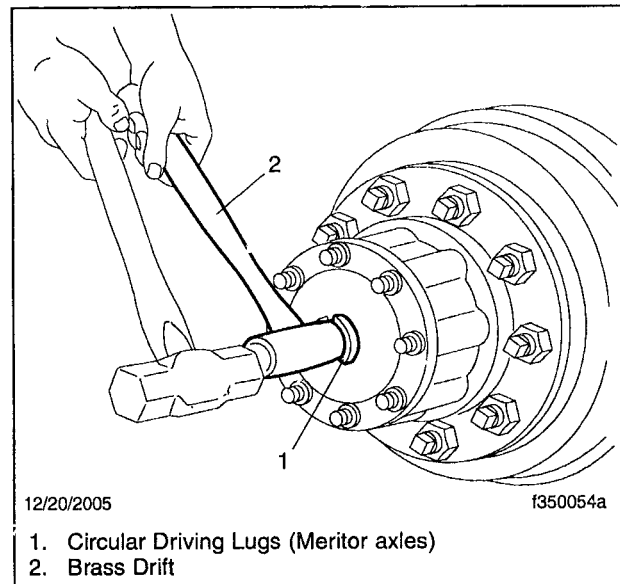


Fig. 2, Striking the Center of the Axle Driveshaft

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Stud-Nut Torque Values, Without Tapered Dowels; Meritor Axles		
Thread Size	Torque: lbf·ft (N·m)	
	Plain Nut	Locknut
5/8-18	150 to 230 (203 to 312)	130 to 190 (176 to 258)
3/4-16	310 to 400 (420 to 542)	270 to 350 (366 to 475)

Table 2, Stud-Nut Torque Values, Without Tapered Dowels; Meritor Axles

Stud-Nut Torque Values, Equipped with Tapered Dowels; Meritor Axles		
Thread Size	Torque: lbf·ft (N·m)	
	Plain Nut	Locknut
7/16-20	50 to 75 (68 to 102)	40 to 65 (54 to 88)
1/2-20	75 to 115 (102 to 156)	65 to 100 (88 to 136)
9/16-18	110 to 165 (150 to 224)	100 to 145 (136 to 197)
5/8-18	150 to 230 (204 to 312)	130 to 190 (176 to 258)

Table 3, Stud-Nut Torque Values, Equipped With Tapered Dowels; Meritor Axles

11. For AAC axles, release the differential lock at the dash, if applicable.

For Meritor axles, uncage the driver-controlled differential lock, if applicable. See Fig. 1.

11.1 Remove the manual-engaging capscrew from the cylinder on the differential lock, and install it in the storage hole.

11.2 Install the air-line fitting in the end of the cylinder, then connect the air line.

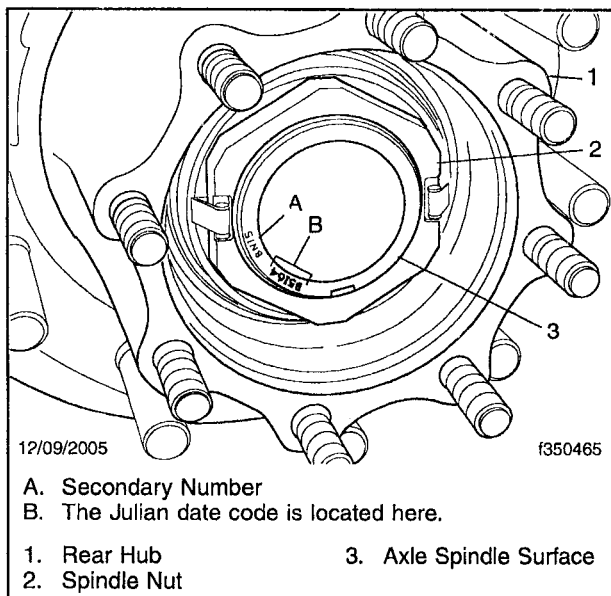


Fig. 3, Julian Date Code and Secondary Number Locations

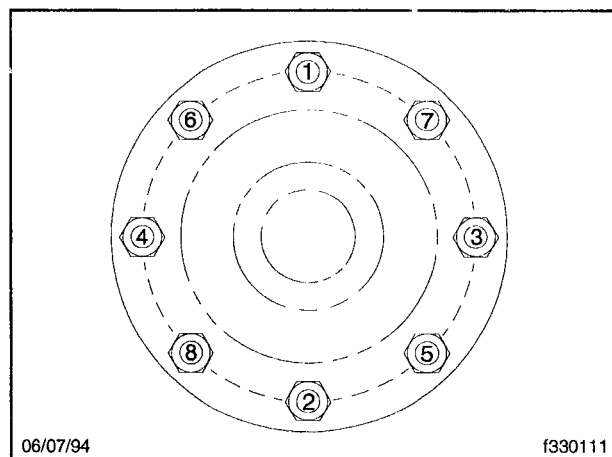


Fig. 4, Tightening Sequence for Drive-Axle Stud Nuts

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12. Check the oil level in the axle housing and add approved oil as needed. See **Table 4** for approved rear axle oils.

Approved Rear Axle Oil Type and Capacity		
Oil Type	Capacity: quarts (liters)	
	Hubs Full	Hubs Dry
80W-90 Gear Oil	10.6 (10.0)	12.2 (11.5)
75W-90 Synthetic Gear Oil		

Table 4, Approved Rear Axle Oil Type and Capacity

13. Clean a spot on the base label (Form WAR259). The base label is usually located on the passenger-side door about 12 inches (30 cm) below the door latch. Write the recall number, FL460, on a blank red completion sticker (Form WAR260) and attach it to the base label.
14. Remove the chocks from the tires.

Axle Housing Replacement Procedure

IMPORTANT: The rear axle housing must be replaced even if only one axle spindle is suspect. It is expected that approximately 29 housings will require a replacement.

1. Put the transmission in neutral.
2. Using a suitable jack, raise the vehicle enough to take the weight off the axles, but not enough to raise the tires off the ground.
3. At both ends of the axle, loosen all the wheel nuts.
4. Using a suitable jack, continue to raise the vehicle evenly until there is room to fit a stand underneath the axle housing.

WARNING

Never work around or under a vehicle that is supported only by a jack. Always support the vehicle with safety stands. Jacks can slip, allowing the vehicle to fall, which could result in serious injury or death.

5. Support the vehicle with safety stands.
6. Remove the tire and wheel assemblies.
7. Drain the oil from the differential housing. Install the drain plug.
8. Disconnect the driveshaft(s) from the differential carrier. For instructions, see **Group 41** of the applicable vehicle workshop manual. Using suitable straps, support the end of a disconnected driveshaft by attaching it to the frame rail.
9. Release the parking brakes.
10. Cage the parking brake springs to prevent the parking brakes from engaging. For instructions, see **Group 42** of the applicable vehicle workshop manual.
11. If not already done, drain the air system.
12. If necessary, back off the slack adjusters, then remove the brake drums.

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13. Remove the hubs from the axle spindles. For instructions, see **Group 35** of the applicable vehicle workshop manual.
14. Remove the brake shoes. For instructions, see **Group 42** of the applicable vehicle workshop manual.
15. If applicable, disconnect the leveling valve rod(s) from the suspension.
16. At the frame rail or crossmember, disconnect the wiring for the ABS sensors. Remove any tie straps that hold the wires to the frame rails.
17. Disconnect the air lines from the rear brake air chambers.
18. Remove the rear brake air chambers and the slack adjusters from the axle housing. For instructions, see **Group 42** of the applicable vehicle workshop manual.
19. Remove the brake spiders from the axle flanges.
 - 19.1 If so equipped, remove the ABS sensors and wiring.
 - 19.2 Remove the fasteners that hold the brake spiders to the axle flanges. Remove the spiders from the axle.
20. If applicable, disconnect the differential-lock air line from the cylinder on the differential carrier.
21. If applicable, disconnect the wiring from the differential-lock sensor.
22. Using a suitable jack, support the axle housing.
23. If applicable, remove the hexnuts that hold the bottom of each suspension air bag to its suspension bracket.
24. Remove the suspension components that attach the axle to the vehicle. If applicable, remove the U-bolt nuts from the U-bolts. Discard the U-bolt nuts and U-bolts.
25. Lower the axle enough to clear the suspension components.
26. Remove the axle from the vehicle.
27. Place the axle on a secure axle stand.

WARNING

The differential carrier is heavy. Do not try to remove it without a suitable support. To do so could result in the carrier failing, which could cause serious personal injury and component damage. Support the carrier with a suitable jack and chain it to the jack, or use a hoist if the axle has been removed from the vehicle.

28. Remove the carrier capscrews that hold the differential carrier to the axle housing. See **Fig. 5**.
29. With the differential carrier securely supported, remove it from the axle housing.
30. If equipped with suspension torque rods and a Meritor axle, remove the old torque-rod brackets from the old axle housing, and weld them in place on the new axle housing.

If equipped with suspension torque rods and a Freightliner axle, obtain *new* torque-rod brackets and weld them in place on the new axle housing.

IMPORTANT: The old torque rod brackets cannot be reused on Freightliner axles.

31. Apply a thin bead of sealant all the way around the differential mating surface of the new axle housing, and around each bolt hole.

For Meritor axles, use Loctite® 5699 silicone sealant.

For AAC axles, use Loctite 5900 sealant.

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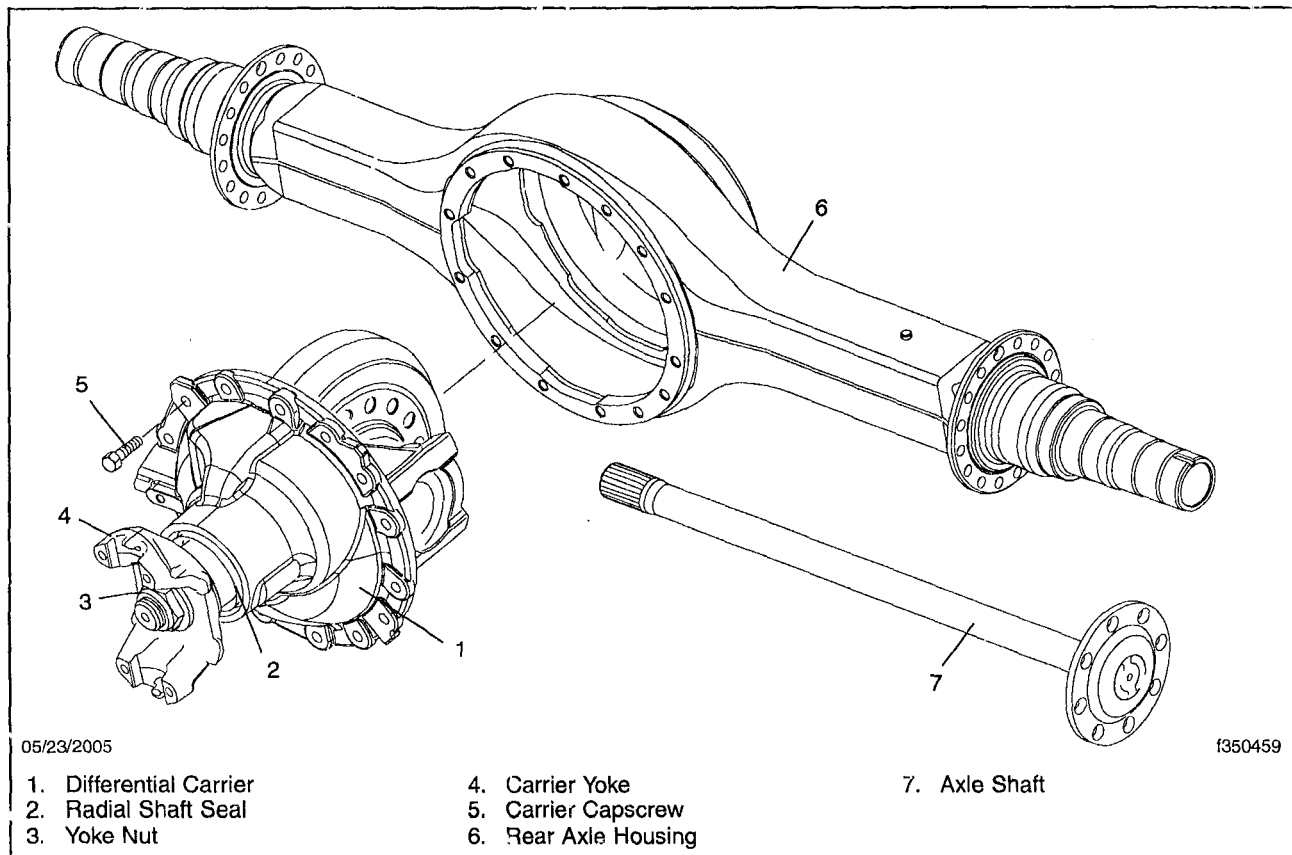


Fig. 5, Rear Axle Components (typical)

NOTE: Alignment dowels will make it much easier to install the carrier in the axle housing. Make them as follows:

For Meritor axles, saw off the heads of two 4-inch-long 1/2-13, or 5/8-11 hexbolts, as applicable.

For AAC axles, saw off the heads of two M16 x 1.5 x 100 mm bolts.

32. Install the alignment dowels 180 degrees apart at the 3 o'clock and 9 o'clock positions on the axle housing flange.

CAUTION

Make sure the differential carrier is centered and straight on the axle housing before you install the mounting capscrews. Attempting to install the carrier when it is not centered or straight may cause damage to the carrier.

33. Using a hoist, install the differential carrier into the axle housing. Use the alignment dowels to center the carrier on the axle housing.

IMPORTANT: The end caps on the Freightliner differential carrier (see **Fig. 6**) fit tightly into the axle housing. Make sure the carrier is installed so the end caps fit into the corresponding slots in the axle housing. Be very careful not to cock the carrier. For the last 3/4 inch (19 mm) or so of travel, walk the carrier slowly into the housing.

34. Install the carrier capscrews.

For AAC axles: Install the carrier capscrews finger-tight. Make sure the carrier capscrews turn easily in the axle housing.

In a star pattern, gradually tighten the M16 carrier capscrews 200 lbf-ft (270 N·m).

For Meritor axles: Apply a 1/8-inch (3-mm) bead of Loctite 242 thread-locking compound around the capscrew threads, about 1/4-inch (6 mm) from the end. Then apply one 1/8-inch (3-mm) bead of the compound longitudinally from the end of the capscrew to the head.

Install the carrier capscrews finger-tight. Make sure they turn easily in the axle housing. In a star pattern, gradually tighten them as follows:

- 1/2–13 capscrews: 140 lbf-ft (190 N·m)
- 5/8–11 capscrews: 225 lbf-ft (306 N·m)

35. Position the axle underneath the vehicle.

36. Install the suspension components that attach the axle to the vehicle.

NOTE: U-bolts and U-bolt nuts cannot be reused.

36.1 On vehicles with conventional suspensions, install the upper U-bolt brackets, new U-bolts, lower U-bolt brackets, and new U-bolt nuts.

On vehicles with air suspensions, in addition to the U-bolts, install the hexnuts that attach the air springs to the leaf springs. Tighten them 55 lbf-ft (75 N·m).

On vehicles without U-bolts, install the walking beams.

36.2 If applicable, tighten the new U-bolt nuts in a diagonal pattern. For torque values, see **Table 5**.

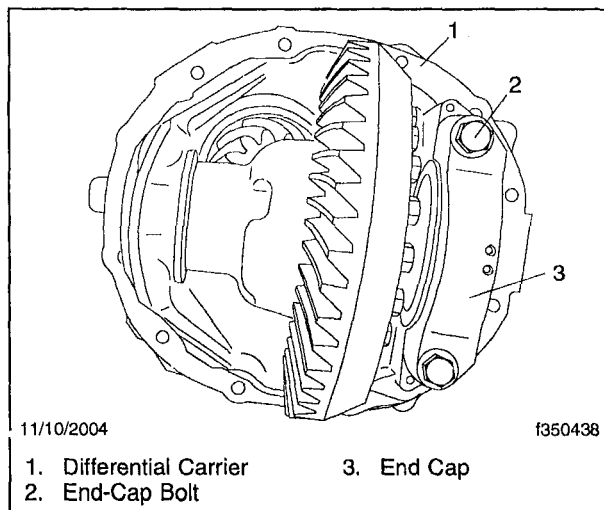


Fig. 6, Carrier End-Caps, Freightliner Axle

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Torque Values for U-Bolt High Nuts			
Description	Size	IFI Grade	Torque: lbf·ft (N·m)
Axle U-Bolt High Nuts (Tighten in a diagonal pattern.)	7/8-14	C	Stage 1: Hand tighten Stage 2: 60 (81) Stage 3: 200 (271) Stage 4: 420-500 (571-680)
	1-14	C	Stage 1: Hand tighten Stage 2: 60 (81) Stage 3: 200 (271) Stage 4: 520-600 (707-816)

Table F, Torque Values for U-Bolt High Nuts

37. If applicable, connect the suspension torque rods to the brackets on the axle housing. For instructions, see **Group 32** of the applicable vehicle workshop manual.
38. Connect the driveshaft to the differential carrier yoke. If applicable, connect the interaxle driveshaft to the carrier yoke. For instructions, see **Group 41** of the applicable vehicle workshop manual.
39. Install the brake spiders on the axle flanges. For instructions, see **Group 42** of the applicable vehicle workshop manual.
40. If applicable, install the ABS sensors and connect the wiring at the frame rail. Secure the wiring with tie straps as needed.
41. Install the brake air chambers and slack adjusters on the axle housing brackets. For instructions, see **Group 42** of the applicable vehicle workshop manual.
42. Connect the air lines to the brake air chambers.
43. Install the brake shoes. For instructions, see **Group 42** of the applicable vehicle workshop manual.
44. If applicable, connect the differential-lock air line to the cylinder on the differential carrier.
45. If applicable, connect the wiring to the differential lock sensor located on the differential carrier.
46. Fill each hub with approved axle oil until you can see a little amount of oil trickling out of the back of the hub. Use about 0.8 quart (0.75 liter). Install the hubs on the axle spindles, and adjust the wheel bearings. For instructions, see **Group 35** of the applicable vehicle workshop manual.

NOTE: For approved axle oils, see **Table 4**.

47. Using new gaskets, install the axle driveshafts. Install the tapered dowels, if applicable.

For Meritor axles: Install the stud nuts and tighten them in the sequence shown in **Fig. 4**. For torque values, see **Table 2** or **Table 3**.

For AAC axles: Install the stud nuts and tighten them in the sequence shown in **Fig. 4**, and to the following torque values:

- *Equipped with tapered dowels:* 130 to 140 lbf·ft (175 to 190 N·m)
- *Without tapered dowels:* 150 to 170 lbf·ft (203 to 230 N·m)

48. Install the brake drums on the hubs.
49. Install the wheels and tires. For instructions, see **Group 40** of the applicable vehicle workshop manual.
50. Adjust the brakes. For instructions, see **Group 42** of the applicable vehicle workshop manual.
51. Uncage the parking brake springs.

52. For Meritor axles, uncage the differential lock, if applicable.

For AAC axles, release the differential lock at the dash, if applicable.

53. Using approved axle oil, fill the axle housing to the bottom of the fill hole, or until filled to capacity.

54. If the hubs are dry, raise one side of the vehicle about 4 inches (10 cm) to let the oil flow into the hub on the opposite side, then raise the other side in the same manner.

 CAUTION

Make sure the hubs are filled. Driving with the hubs dry will cause bearing damage.

55. Raise the vehicle, remove the safety stands, then lower the vehicle.

56. If applicable, connect the suspension leveling valve(s). Start the engine, build the air pressure, and make sure the suspension air bags inflate correctly. Make sure the ride height is correct. For instructions, see **Group 32** of the applicable vehicle workshop manual.

57. Check the oil level in the axle housing. The level should be up to the bottom of the fill hole. Add approved axle oil, if needed.

58. Set the parking brake.

59. Go to "Rear Axle Alignment Checking."

Rear Axle Alignment Check Procedure

IMPORTANT: After replacing the rear axle housing, it is necessary to check the rear axle alignment.

1. Drive the vehicle back and forth to settle the suspension, and park it on a level surface.
2. If not already done, place the transmission in neutral. Release the parking brakes.

 CAUTION

Do not use scribe lines for marking on frame rails. Scribe lines, which cut or scratch the metal, can develop into starting points for structural damage to the frame.

3. Select a point on the frame rail forward of the rear axle. Using a pencil or soapstone, mark two other points, exactly 4 inches (102 mm) forward and to the rear of the original point. Make sure that all three marks are aligned and of equal distance from the outside edge of the frame rail.

Using a trammel bar, place one trammel pointer on the forwardmost point, and make an arc with a pencil or soapstone on the opposite frame rail. Then place the trammel pointer on the rearmost point and make an arc on the opposite frame rail, intersecting the first arc. See **Fig. 7**. The point where the two arcs intersect and the original (or middle) point on the opposite frame rail have matching locations.

4. Line up a straightedge with the two matching points. Check that the straightedge extends out about the same distance on each side of the frame rail. Using C-clamps, clamp the straightedge to the frame. See **Fig. 8**. The straightedge must line up exactly with the points.
5. Measuring from the outside edge of each frame rail, mark the straightedge on both sides of the frame. Reference "A" (see **Fig. 8**) must be of equal distance from the frame and as far from the frame rail as the tires are at their farthest point from the frame.

IMPORTANT: The distance between the mark on the straightedge and the frame rail must be equal on both sides of the vehicle.

Recall Campaign

March 2006
FL460A
NHTSA #05V-467

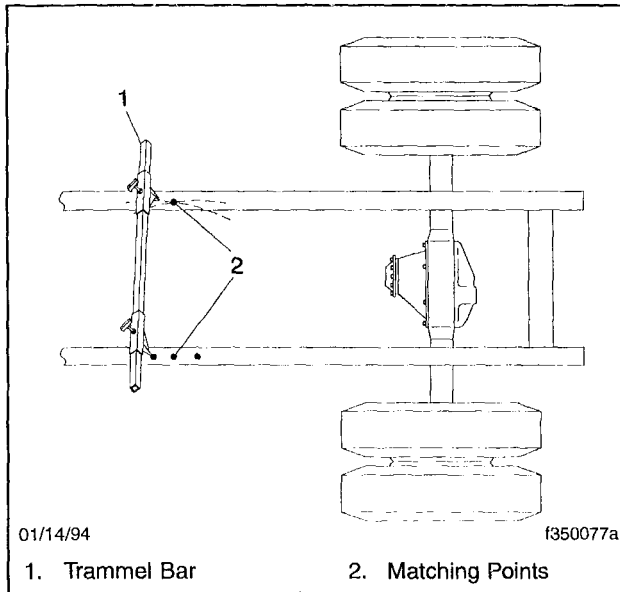


Fig. 7, Marking an Arc With the Trammel Bar

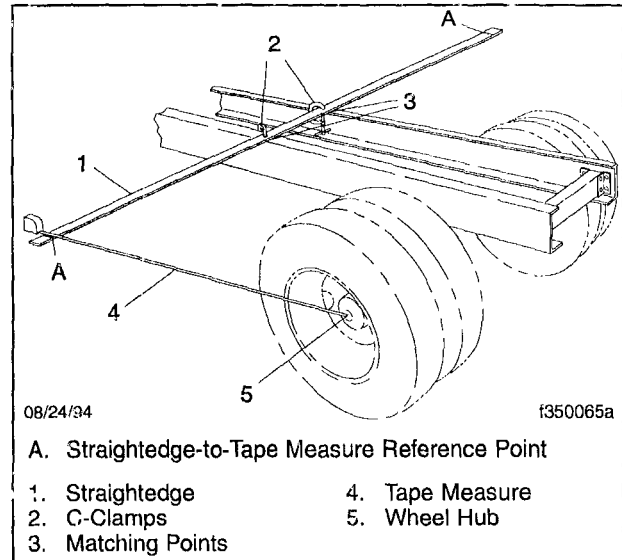


Fig. 8, Straightedge to Wheel Hub Measurement

6. On each side of the vehicle, measure the distance from the mark on the straightedge to the center of the wheel hub. See **Fig. 8**.

The difference between these measurements should be 1/4 inch (6 mm) or less.

If the difference is more than 1/4 inch (6 mm), adjust the axle alignment. For instructions, refer to **Group 32** of the applicable vehicle workshop manual, or to the suspension manufacturer's service literature.

If the difference is 1/4 inch (6 mm) or less, go to the next step.

7. Clean a spot on the base label (Form WAR259). The base label is usually located on the passenger-side door about 12 inches (30 cm) below the door latch. Write the recall number, FL460, on a blank red completion sticker (Form WAR260) and attach it to the base label.
8. Remove the chocks from the tires.