DAIMLER

Daimler Trucks North America

Nasser Zamani
Manager
Compliance and Regulatory Affairs

July 10, 2008

Dan Smith
Associate Administrator for Vehicle Safety
National Highway Traffic Safety Administration
1200 New Jersey Avenue S.E.
Washington D.C. 20590

Re: Defect Information Report – Supplemental Report No. 3
07V-403, FL-513, Front Axle Steering Stops

Mr. Smith

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

(c)(3) **Total number of vehicles potentially affected: 334 in phase one**

(c) (8)(ii) **Communications sent to dealers:** Phase one posted July 2, 2008. Expanded notification expected September 5, 2008.
Communications sent to owners: Phase one mailed July 8, 2008. Expanded notification expected September 5, 2008.

(c) (10) **Copies of Communications sent to owners and dealers are attached.**

Please contact me if you have any questions.

Sincerely yours,

Nasser Zamani

Nasser Zamani

Cc: Michael Mason, CAL-OSHA
Enclosure
Certified Mail# 7004 2890 0004 1202 2106

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Daimler Trucks
North America LLC

Recall Campaign

July 2008
FL513AB
NHTSA #07V-403

Subject: Rack and Pinion Steering – Steering Stops

Models Affected: Specific Freightliner Cascadia, Century Class S/T, and Columbia vehicles manufactured November 1, 2004, through September 26, 2007, with rack and pinion steering. (Note: One Freightliner Classic XL vehicle and one Freightliner Coronado vehicle are also involved in this recall.)

General Information

Daimler Trucks North America LLC, on behalf of its Freightliner Trucks Division, has decided that a defect that relates to motor vehicle safety exists on the vehicles mentioned above.

There are approximately 500 vehicles involved in this campaign.

The ball and socket assembly at the inner end of the driver's side tie rod may be damaged in a sharp turn. Excessive tie rod angles may loosen the tie rod in the ball socket or damage the threaded tie rod socket attachment to the steering rack. The threaded end of the ball and socket assembly may fracture and separate, making the vehicle more difficult to control at higher speeds and resulting in a possible vehicle crash.

The front axle steering stops will be changed to prevent interference with the tie rod ball and socket assembly and steering components will be replaced.

NOTE: FL513 is being released in phases – FL513AB will be released first, with later groups of vehicles to follow. Perform the recall when ServicePro shows it is open for the specific vehicle. Because of the close relationship to recall FL512, if there is any question regarding the work needed, please contact the Warranty Campaigns Department by submitting an inquiry through AccessFreightliner.com / Support / Submit an Inquiry for assistance.

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

Replacement parts are now available and can be obtained by ordering as shown below from your facing Parts Distribution Center.

If our records show your dealership has ordered any vehicles involved in campaign number FL513AB, a list of the customers and vehicle identification numbers will be available on AccessFreightliner.com. Please refer to this list when ordering parts for this recall.

Table 1 - Replacement Parts for FL513AB

IMPORTANT: Please use stop bolt kit 25-**FL512**-000 as shown in **Table 1** below. However, please do not use the completion sticker in this kit. Use a blank sticker and write in recall FL513.

Stop Bolt Kit for All Vehicles

Campaign Number	Kit Number	Part Description	Part Number	Qty. per Kit	Suggested Wholesale*
FL513AB (Install the appropriate bolts from this kit on all vehicles, if not already installed as part of FL512.)	25-FL512-000	Stop Bolt, Long, Red Color Coding	ABP P6803300077	2 ea	$131.71 U.S. $131.71 CAN
		Stop Bolt, Medium, Yellow Color Coding	ABP P6803300177	2 ea	
		Stop Bolt, Short, Blue Color Coding	ABP P6803300277	2 ea	
		Completion Sticker	WAR260	1 ea	

* Please charge all Direct Warranty Customers the above-listed price for the kit, as they are authorized to perform their own Recalls.

Table 1

Table 2 - Replacement Parts for FL513AB

Rack and Pinion Gears and Tie-Rod Arms

Campaign Number	Part Description	Part Number	Qty.	Suggested Wholesale*
FL513A (Install on all FL513A vehicles.)	Gear-Strg, R&P, LZS5, MWB (Install on all vehicles.)	14-16442-001	1 ea	$1,145.30 U.S. $1,145.30 CAN
	Nut Castle M27 X1.5, Class 4	MBT N000979027000	2 ea	$4.81 U.S. $4.81 CAN
	Bolt-Pinch,Strg U-Joint, M10x1.25	14-15639-000	1 ea	$3.62 U.S. $3.62 CAN
	Nut-Hex,Prevailing Torque, M10x1.25	14-15640-000	1 ea	$.84 U.S. $.84 CAN
	Cotter Pin, 1-3/4x3/16	23-00800-607	2 ea	$.06 U.S. $.11 CAN
	Connector-3/4 to M16x1.5	23-13324-108	1 ea	$17.43 U.S. $19.16 CAN
	Connector-7/8 to M18x1.5	23-13324-110	1 ea	$16.28 U.S. $21.61 CAN
	Screw-Hex Flange, M18x1.5110	MBT N910105018030	4 ea	$8.02 U.S. $8.02 CAN
	Nut-Hex, Flange, M18x1.5, Class 10	MBT N913023018002	4 ea	$3.02 U.S. $3.02 CAN
FL513A (Install only when a vehicle fails the tie-rod arm inspection.)	RHS MWB AAC R&P Tie-Rod arm	ABP P6803380506	1 ea	$80.15 U.S. $69.45 CAN
	LHS MWB AAC R&P Tie-Rod arm	ABP P6803380905	1 ea	$80.15 U.S. $69.45 CAN
	Flange Head Screw, M20x1.5x90-10.9	ABP P910105020026	4 ea	$19.36 U.S. Canadian Price Not Available
	Loctite 277	A6809890271	1 ea	Pricing Not Available

Table 2, continues on the next page

Campaign Number	Part Description	Part Number	Qty.	Suggested Wholesale*
FL513B (Install on all FL513B vehicles.)	Gear-Strg, R&P, LZS5, SWB	14-16442-000	1 ea	$1,145.30 U.S. $1,145.30 CAN
	Bolt-Pinch,Strg U-Joint, M10x1.25	14-15639-000	1 ea	$3.62 U.S. $3.62 CAN
	Nut-Hex,Prevailing Torque, M10x1.25	14-15640-000	1 ea	$.84 U.S. $.84 CAN
	Cotter Pin, 1-3/4x3/16	23-00800-607	2 ea	$.06 U.S. $.11 CAN
	Connector-3/4 to M16x1.5	23-13324-108	1 ea	$17.43 U.S. $19.16 CAN
	Connector-7/8 to M18x1.5	23-13324-110	1 ea	$16.28 U.S. $21.61 CAN
	Screw-Hex Flange, M18x1.5110	MBT N910105018030	4 ea	$8.02 U.S. $8.02 CAN
	Nut-Hex, Flange, M18x1.5, Class 10	MBT N913023018002	4 ea	$3.02 U.S. $3.02 CAN
FL513B (Install only when a vehicle fails the tie-rod arm inspection.)	RHS SWB AAC R&P Tie-Rod arm	ABP P6803380406	1 ea	$92.18 U.S. $72.60 CAN
	LHS SWB AAC R&P Tie-Rod arm	ABP P6803380805	1 ea	$92.18 U.S. $72.60 CAN
	Flange Head Screw, M20x1.5x90-10.9	ABP P910105020026	4 ea	$19.36 U.S. Canadian Price Not Available
	Loctite 277	A6809890271	1 ea	Pricing Not Available

* Please charge all Direct Warranty Customers the above-listed price for the kit, as they are authorized to perform their own Recalls.

Table 2, continued from the previous page

Removed Parts

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

Labor Allowance

Table 3 - Labor Allowance

Campaign Number	Procedure	Time Allowed (hours)	SRT Code	Damage Code
FL513AB	Inspect, replace rack and pinion gear and steering stop bolts and set wheel cut	5.6	996-0760B	000-Modifiedx
	Inspect, replace rack and pinion gear	3.3	996-0760C	000-Modifiedx
	Inspect, replace rack and pinion gear, tie rod arms, and steering stop bolts and set wheel cut	4.9	996-0760A	000-Modifiedx
	Inspect, no further work needed (completed under FL512)	0.2	996-0760D	000-Inspected

Table 3

July 2008
FL513AB
NHTSA #07V-403

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 (e.g. **FL513A, FL513B, etc.**).
- In the Primary Failed Part Number field, enter **25-FL513-000**.
- In the Parts field, enter the appropriate kit number or part numbers as shown in the Replacement Parts Tables. In addition, appropriate power steering fluid may be claimed as a miscellaneous part.
- In the Labor field, first enter the appropriate SRT from the Labor Allowance Table. For administrative time, enter SRT 939-0010A for 0.3 hours.

IMPORTANT: ServicePro® 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.

Please note that the National Traffic and Motor Vehicle Safety Act, as amended (Title 49, United States Code, Chapter 301), 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. Any lessor is required to send a copy of the recall notification to the lessee within 10 days. Any subsequent stage manufacturer is required to forward this notice to its distributors and retail outlets within five working days.

Copy of Letter to Owner

Subject: Rack and Pinion Steering – Steering Stops

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.

Daimler Trucks North America LLC, on behalf of its Freightliner Trucks Division, has decided that a defect which relates to motor vehicle safety exists on specific Freightliner Cascadia, Century Class S/T, and Columbia vehicles manufactured November 1, 2004, through September 26, 2007, with rack and pinion steering. (Note: One Freightliner Classic XL vehicle and one Freightliner Coronado vehicle are also involved in this recall.)

The ball and socket assembly at the inner end of the driver's side tie rod may be damaged in a sharp turn. Excessive tie rod angles may loosen the tie rod in the ball socket or damage the threaded tie rod socket attachment to the steering rack. The threaded end of the ball and socket assembly may fracture and separate, making the vehicle more difficult to control at higher speeds and resulting in a possible vehicle crash.

The front axle steering stops will be changed to prevent interference with the tie rod ball and socket assembly, and steering components will be replaced.

Parts are now available for authorized dealers to order. Contact your authorized dealer to arrange to have the recall performed and to ensure that parts are available at the dealership. 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 **FL513AB**. Once parts are received at the dealership, the recall will take approximately three to six hours, depending on the work needed, 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 **FL513AB**.

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, Federal law requires that you forward this notice to the lessee within 10 days. If you are a subsequent stage manufacturer, Federal law requires that you forward this notice to your distributors and retail outlets within five working days.

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,1200 New Jersey Avenue, SE., Washington, DC 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

July 2008
FL513AB
NHTSA #07V-403

Work Instructions

Subject: Rack and Pinion Steering – Steering Stops

Models Affected: Specific Freightliner Cascadia, Century Class S/T, and Columbia vehicles manufactured November 1, 2004, through September 26, 2007, with rack and pinion steering. (Note: One Freightliner Classic XL vehicle and one Freightliner Coronado vehicle are also involved in this recall.)

NOTE: FL513 is being released in phases – FL513AB will be released first, with later groups of vehicles to follow. Perform the recall when ServicePro shows it is open for the specific vehicle. Use stop bolt kit 25-**FL512**-000 as shown in **Table 1** above. However, please do not use the completion sticker in this kit. Use a blank sticker and write in recall number FL513. **Because of the close relationship to recall FL512, if there is any question regarding the work needed, please contact the Warranty Campaigns Department by submitting an inquiry through AccessFreightliner.com / Support / Submit an Inquiry for assistance.**

Rack and Pinion and Steering Stop Bolt Replacement

1. Check the base label (Form WAR259) for a completion sticker for FL513 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 FL513 is present, nothing further needs to be done. If no sticker is present, go to the next step.
2. Check the base label for a completion sticker for **FL512** and check ServicePro to see whether the vehicle has a claim for **FL512**.

   If a vehicle has no record of FL512 being completed (no claim and no completion sticker), new stop bolts are needed, the wheel cut must be set, the tie rod arms must be inspected and replaced if needed, and the rack and pinion gear will be replaced. Go to the next step.

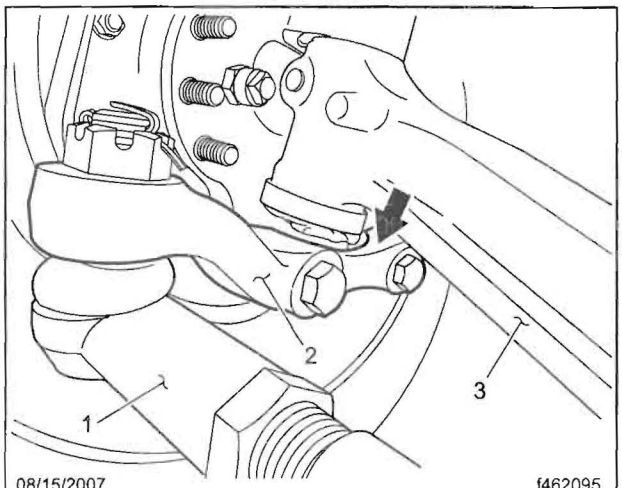
   If the vehicle has a claim and/or a completion sticker for FL512, only the rack and pinion gear will be replaced. Go to the next step.
3. Shut down the engine, set the parking brake, and chock the rear tires.
4. Raise the hood.
5. If the vehicle has no record of FL512 being completed (no claim or completion sticker), check the part numbers of the tie-rod arms to determine if they are installed correctly, as follows. If FL512 has been completed, *go to Step 6, "If the tie-rod arms are correct, remove and discard the cotter pins . . . ."*

   5.1 Turn the steering wheel one turn to the right. This will expose the top surface of the left tie-rod arm, where the raised part number is located. See **Fig. 1**.

   5.2 Looking down from the left side of the vehicle, check and record the raised part number of the left tie-rod arm.

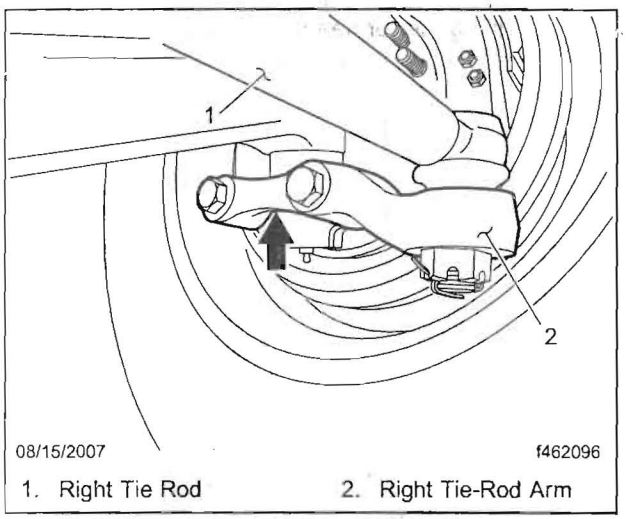
   5.3 From underneath the right side of the vehicle, check and record the raised part number on the lower surface (facing the ground) of the right tie-rod arm. See **Fig. 2**.

   5.4 If the part number of the left tie-rod arm ends in "L" (e.g., A680xxxxxxxxL or AACxxxxL), and the part number of the right tie-rod arm ends in "R" (e.g., A680xxxxxxxxR or AACxxxxR), then the arms are installed correctly. *Go to Step 6, "If the tie-rod arms are correct, remove and discard the cotter pins . . . ."*



1. Left Tie Rod
2. Left Tie-Rod Arm
3. Axle Beam

Fig. 1, Part Number Location, Left Tie-Rod Arm



1. Right Tie Rod
2. Right Tie-Rod Arm

Fig. 2, Part Number Location, Right Tie-Rod Arm

5.5 If the part number of the left tie-rod arm does not end in "L" (e.g., A680xxxxxxxxL or AACxxxxL), and the part number of the right tie-rod arm does not end in "R" (e.g., A680xxxxxxxxR or AACxxxxR), then the arms are not installed correctly, and must be replaced. *Go to Step 7, "If the tie-rod arms are not correct, replace them . . . ."*

⚠ CAUTION

Do not use a method that requires you to heat or otherwise deform the tie-rod arms while releasing the ball studs from the tapered fit. This could weaken the tie-rod arms.

6. If the tie-rod arms are correct, remove and discard the cotter pins and castle nuts from the outer tie-rod ends, then separate the ball studs from the tie-rod arms. *Go to Step 8, "Mark and disconnect rhe hydraulic lines . . ."*

7. If the tie-rod arms are not correct, replace them as follows.

   7.1 Remove and discard the fasteners that hold the tie-rod arms to the steering knuckles. Leave the tie-rod arms attached to the steering gear; removing the arms is unnecessary because the gear will be replaced later in the procedure. See **Fig. 3** and **Fig. 4.**

   IMPORTANT: Make sure that the new tie-rod arms are installed on the correct side. Each side is different; the raised number on each arm will end in an "L" or an "R," which refers to left (driver's) side or right (passenger's) side of the vehicle.

   7.2 Using a solvent, clean the female threads on the steering knuckles, removing all dirt, oil, and other foreign material. Let the solvent dry completely.

   7.3 Apply Loctite 277 to the threads of the new M20 flanged hexbolts and install the tie-rod arms. Tighten the flanged hexbolts 424 to 534 lbf·ft (575 to 724 N·m).

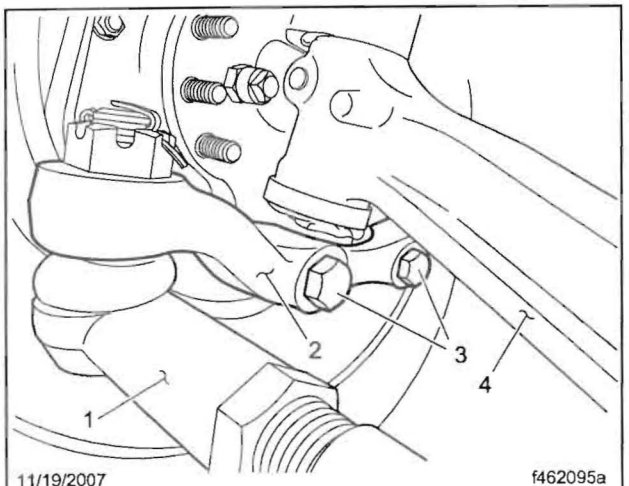
8. Mark and disconnect the hydraulic lines from the rack and pinion assembly, then drain the fluid from the system into a suitable container.

9. Plug the hydraulic lines to keep out dirt.

10. Remove and discard the lower pinch bolt and nut from the steering intermediate shaft.

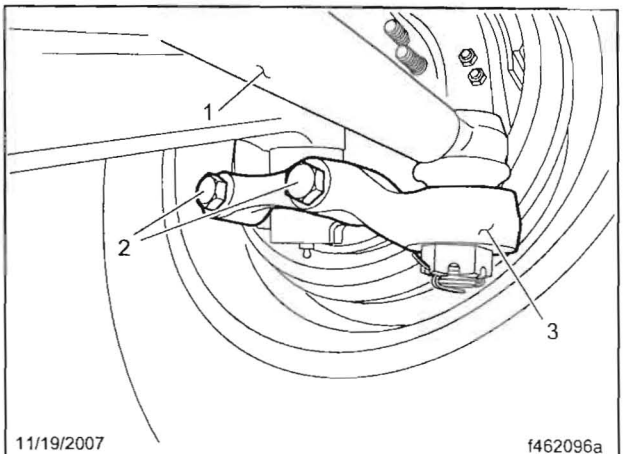
⚠ WARNING

On vehicles equipped with an SRS air bag, do not rotate the upper steering column while the intermediate shaft is removed or disconnected. This can cause the clockspring in the steering wheel hub to become off center, which could result in the air bag failing to operate during a crash.



1. Left Tie Rod
2. Left Tie-Rod Arm
3. Tie-Rod Arm Fasteners
4. Axle Beam

Fig. 3, Left Side of Vehicle



1. Right Tie Rod
2. Tie-Rod Arm Fasteners
3. Right Tie-Rod Arm

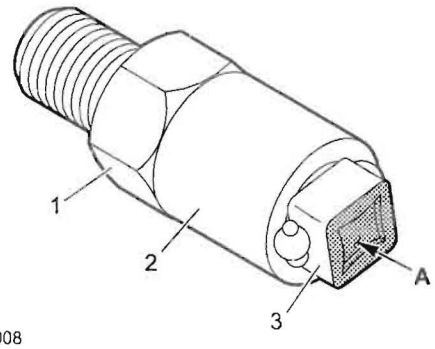
Fig. 4, Right Side of Vehicle

11. Remove and discard the fasteners that hold the rack-and-pinion assembly to the axle-mounted brackets, then remove the assembly from the vehicle.
12. Using new fasteners, install the new rack-and-pinion assembly. Tighten the fasteners 202 to 256 lbf·ft (274 to 347 N·m).
13. Attach the tie rods to the tie-rod arms. Tighten the new castle nuts 240 lbf·ft (325 N·m), then install and lock a new cotter pin in each of the ball studs and nuts. If needed, continue tightening each nut until a slot on the nut aligns with the cotter-pin hole in the ball stud. Do not back off the nut to align it with the cotter pin hole.
14. Raise the vehicle and place it on turn plates.
15. If FL512 has been completed on the vehicle (a claim, a completion sticker, or both), installing new stop bolts not needed; skip those steps below, and go to *Step 19, "Check the wheel cut . . . ."*
16. Remove the existing axle-stop bolts from the steering knuckles.
17. If not already done, hand-tighten the jam nut against the welded spacer on each stop bolt. See **Fig. 5**.
18. Install the new axle-stop bolts with the red-marked bolt heads.
19. Check the wheel cut. With the wheels turned all the way to the right and left, the wheel cut should not be less than 44 degrees, and not more than 46 degrees.

    If needed, use the yellow-marked stop bolts to increase the wheel cut by 2 degrees, or the blue-marked stop bolts to increase the wheel cut by 4 degrees. Every 2 mm (0.79 inch) of stop-bolt spacing equals 2 degrees of wheel cut.

NOTE: Because the stop-bolt lengths are in 2 mm (0.79 inch) increments, you may ultimately have to use different lengths for the left and right sides to achieve wheel cuts in the acceptable range. The wheel cuts do not have to be exactly the same on both sides of the vehicle, just within the acceptable range.

20. Install the adapter fittings in the steering gear and tighten 30 to 35 lbf·ft (40.5 to 47.5 N·m).
21. Attach the lines to the plumbing adapters on the steering gear, while ensuring that the lines do not touch the axle or each other once installed. Snug the connection with a wrench to ensure the fittings are seated,



1. Jam Nut
2. Welded Spacer
3. Stop Bolt (square-head)

A. Surface marked with color: red is long, yellow is medium, and blue is short.

Fig. 5, New Axle-Stop Bolt

which is equivalent to approximately 2 lbf·ft (2.7 N·m) Then, using a backup wrench to keep the adapers from turning, tighten the return and supply hoses by 1 flat of the tube nut (60 degrees); see **Fig. 6**.

22. Center the rack and pinion gear.

    22.1 Turn the rack to the right until it stops, then mark the input shaft housing and input shaft seal cover.

    22.2 Turn the rack to the left, and using the marks, count the input shaft revolutions until it stops.

    22.3 Turn the rack to the right for half the total revolutions, then align the pointers on the input shaft seal cover and the input shaft housing. See **Fig. 7**.

23. Install the I-shaft, then install a new lower pinch bolt and nut in the lower U-joint of the I-shaft. Tighten the nut 30 to 35 lbf·ft (41 to 47 N·m).

24. Fill the power steering reservoir with Dexron III or Conoco Phillips Super ATF.

25. With the front wheels off the ground or on turn plates, bleed the steering system as follows.

    25.1 With the engine off, turn the wheel fully left and right five times to bleed the air from the rack.

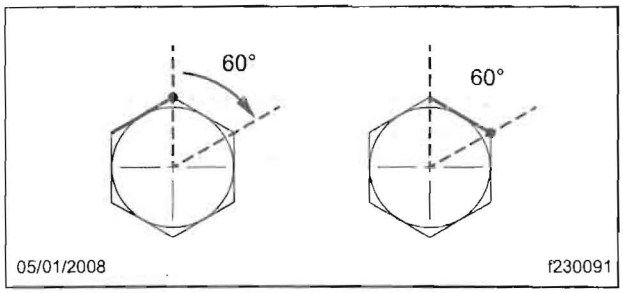
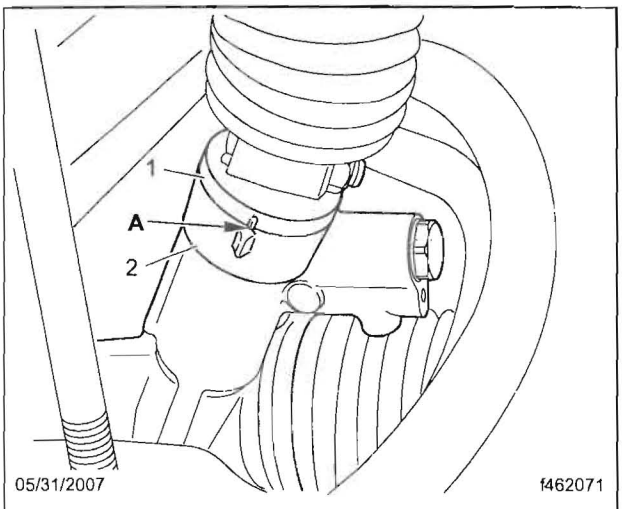


Fig. 6, Turning the fitting one flat (60 degrees).



A. Align the pointers.

1. Input Shaft Seal Cover
2. Input Shaft Housing

Fig. 7, Aligning the Timing Pointers

25.2 Lower the vehicle onto turn plates, if not already done.

25.3 Fill the reservoir with fluid, then start the engine.

25.4 With the engine running, turn the steering wheel fully left and right several times, without contacting the steering stops.

25.5 If the steering system needs continued bleeding, repeat the previous substep after the fluid in the reservoir has had time to release any air.

26. Align the front wheels using a computerized alignment tool.

NOTE: If you do not have access to this type of tool, the alignment procedure must be done by a facility that does.

26.1 When the alignment process requires that the steering wheel be pointed straight ahead, align the steering rack on-center pointers instead, see **Fig. 7**.

IMPORTANT: Do not center the steering wheel; it must be centered at the end of the procedure.

26.2 Loosen the jam nut on the left tie-rod end and the U-clamp on the right tie-rod end.

26.3 Adjust each tie rod to obtain the total specified toe-in dimension. The total toe-in is to be between 0 and 1/8 inch (3.18 mm), and the target is 1/16 inch (1.58 mm). Tighten the jam nut 285 to 305 lbf·ft (386 to 413 N·m), and the U-clamp 30 to 36 lbf·ft (41 to 48 N·m) to secure the tie rods.

26.4 Check the clearance of the front wheels. With the tires on turnplates, and the wheels turned all the way to the right and left, there must be at least 1/2-inch (13-mm) clearance between the wheels and stationary components, and at least 3/4-inch (19-mm) clearance between the wheels/tires and moving components. If this is not the case, back out the stop bolts and adjust the jam nuts to limit the turning angles and to prevent possible contact with components.

26.5 Tighten the stop-bolt jam nuts 80 to 120 lbf·ft (108 to 163 N·m).

26.6 Verify that the wheel cut does not exceed 46 degrees. Adjust the wheel cut, if needed.

26.7 Return the wheels to the straight-ahead position.

27. Make sure that the steering wheel is within 10 degrees of center as shown in **Fig. 8**. If it is not, remove and center the steering wheel, as follows.

IMPORTANT: All the spline/pinch bolt connections between the steering gear and the steering wheel fit in only one position. Clocking the splined connections after alignment is not possible.

27.1 If the vehicle has an air bag, deactivate and remove the air bag according to the instructions in the applicable vehicle workshop manual. If the vehicle does not have an air bag, remove the horn button by prying it out around the edges.

IMPORTANT: The steering wheel does not have threaded wheel-puller holes. The tapered fit between the steering wheel and the column is designed to be removed by hand.

27.2 Loosen the steering wheel nut and back it off, but leave it on the shaft until the wheel has been released from the tapered fit.

27.3 Remove the wheel from the tapered fit by striking it from below, at the rim/spoke intersections, with both hands.

27.4 Center the steering wheel.

27.5 Install a new steering wheel nut and tighten it 33 to 41 lbf·ft (45 to 55 N·m).

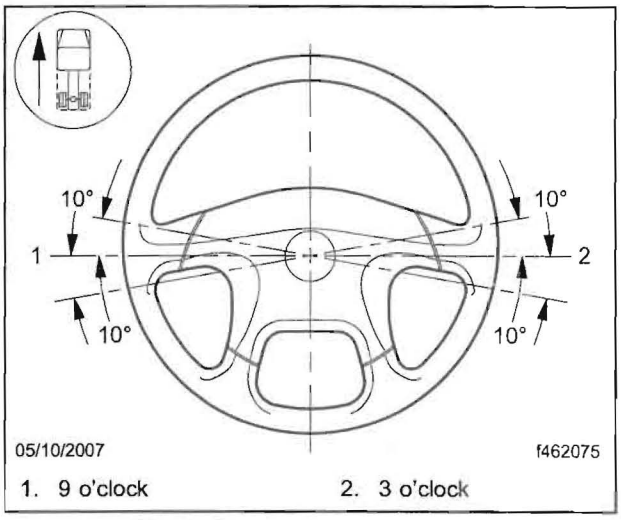


Fig. 8, Steering Wheel Centered

27.6 If the vehicle has an air bag, install and reactivate the air bag according to the instructions in the applicable workshop manual. If the vehicle does not have an air bag, install the horn button.

28. Remove the turn plates and alignment equipment.

29. Clean a spot on the base label (Form WAR259), and attach a completion sticker for Recall FL513 (Form WAR260).