

FLA COE
FLB COE
> FLD Conventional
> Business Class
FLC 112 Conventional

> Century Class Conventional
> Argosy COE
Cargo
> Columbia

> Condor
> Coronado
> Business Class M2
> Cascadia

Freightliner Service Bulletin

Description of Revision: *This bulletin replaces the version dated February 2007. Cascadia was added to the vehicle list, and the VMRS information was updated.*

General Information

On some vehicles equipped with Freightliner tandem axles, chronic oil leaks have been encountered at the input seal on the forward-rear differential carrier. This is due to either incorrect seal installation or incomplete sealing of the threaded ring.

If oil is leaking around the threaded ring at the input shaft of the forward-rear differential carrier, replace the threaded ring and the input shaft seal, following the instructions below.

Parts Required

Parts are available through the PDCs.

The threaded ring kit in [Table 1](#) contains one each of the following:

- input-shaft seal;
- yoke washer;
- yoke nut;
- threaded ring;
- locking plate;
- capscrew, M8 x 1.25 x 12;
- tube of Loctite® 577.

Part Number	Description	Qty.
ABP P6093500043KZ	Threaded Ring Kit	1
Kent-Moore J-8092	Universal Handle	1
Kent-Moore J-47369	Input Seal Installer	1

Table 1, Parts Required

Procedure

1. Apply the parking brakes, shut down the engine, and chock the tires.
2. Disconnect the main driveshaft from the forward differential carrier. For instructions, refer to **Group 41** in the applicable vehicle service/workshop manual. Using suitable straps, secure the driveshaft to the frame rail.
3. Remove the yoke nut and washer from the input shaft of the forward differential carrier, then remove the yoke.
4. Remove and discard the capscrew and the locking plate from the bearing cage on the front of the differential carrier. See [Fig. 1](#).
5. Remove the threaded ring to expose the bearing cavity. See [Fig. 2](#).
6. Using a suitable solvent such as brake cleaner, clean the surface of the bearing cavity. See [Fig. 2](#). Dry the surface, making sure no cleaning solvent remains.

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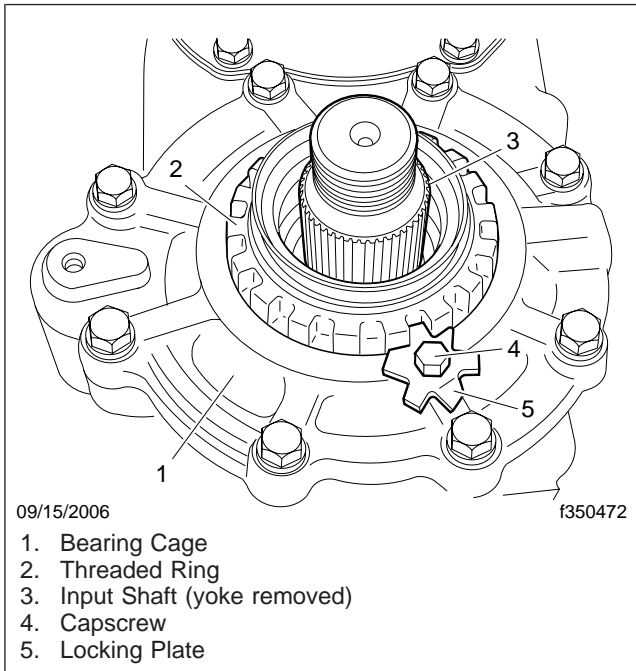


Fig. 1, Forward-Rear Axle Differential Housing

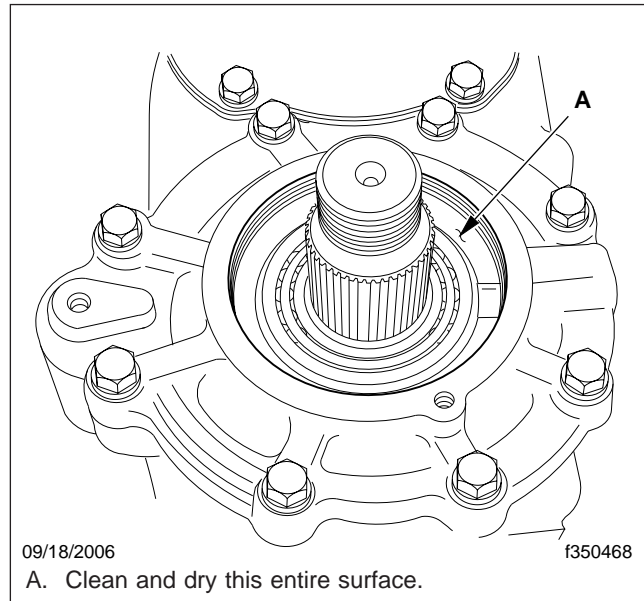


Fig. 2, Bearing Cavity Exposed

7. Coat the threads of the new threaded ring with Loctite 577 sealant. Apply a 1/8-inch (3-mm) diameter bead all the way around the bottom thread, and then spread the sealant evenly over the threads, so that all the threads are thoroughly covered with the sealant.
8. Install the new threaded ring (without the new input-shaft seal) and turn it clockwise (tighten it) enough to form a uniform bead of sealant all the way around the threaded ring. See [Fig. 3](#).
9. Install the old yoke nut on the input shaft to protect the threads, then strike the nut sharply with a brass mallet to unseat the bearing.
10. Adjust the initial bearing preload to 0.002 inch (0.05 mm), as follows:
 - 10.1 Install a dial indicator on the bearing cage and using two pry bars, pry up evenly on the yoke nut (and the input shaft) to determine the bearing preload. See [Fig. 4](#).
 - 10.2 Tighten the threaded ring until the dial indicator reads 0.002 inch (0.05 mm).
11. Using a suitable marker or paint, mark the center of one of the teeth on the threaded ring and the surface of the bearing cage. See [Fig. 5](#).

IMPORTANT: The next step is critical. Tightening the threaded ring by advancing it one tooth will set the bearing preload to 0.00 to 0.0012 inch (0.00 to 0.03 mm). If you tighten the threaded ring beyond this tolerance, you cannot back it off; you will need to remove the threaded ring and repeat the entire installation procedure.

12. Very carefully advance the threaded ring one tooth while checking the paint mark. Stay close to a one-tooth advancement when making the final adjustment. Bear in mind that the new locking plate must fit into place once the correct tightness is achieved. The locking tab should fit in place either slightly before or slightly past a one-tooth advancement of the threaded ring. *You cannot back off the threaded ring once it is tightened.*

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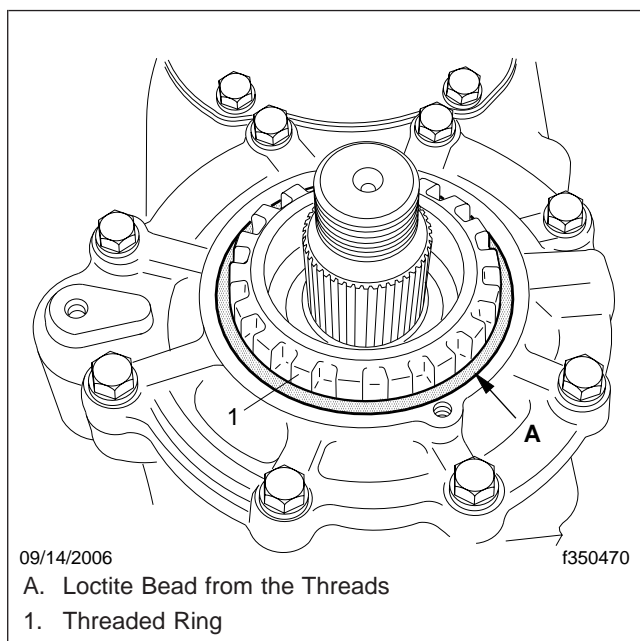


Fig. 3, Preliminary Installation of the New Threaded Ring

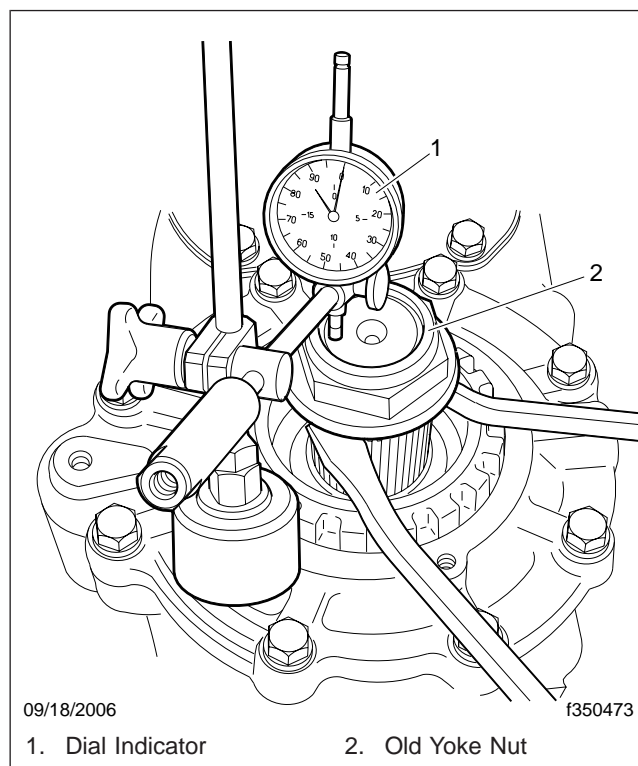


Fig. 4, Measuring Bearing Preload

Try fitting the new locking plate in place by turning and flipping it over as you slowly tighten the threaded ring. Tighten the threaded ring so the bearing preload is 0.00 to 0.0012 inch (0.00 to 0.03 mm). When the correct tolerance is reached, the mark on the surface of the bearing cage should line up with the center of the next tooth. See [Fig. 6](#). Do not tighten the threaded ring any further.

13. When the bearing preload is correct, install the new locking plate and capscrew. Tighten the capscrew 18 lbf·ft (24 N·m).
14. Install the new input-shaft seal as follows (see [Fig. 7](#)):
 - 14.1 Inspect the area around the seal for damage. Use emery paper to remove scratches, nicks, or burrs on the seal bore.
 - 14.2 Apply a light coating of axle oil to the seal bore.
 - 14.3 Coat the mating surfaces of the new seal with Loctite® 5900 sealant, or equivalent.
 - 14.4 Assemble the input shaft seal installer onto the threaded end of the universal handle. See [Fig. 7](#).
 - 14.5 Using the input shaft seal installer assembly, press the seal into the bore until the seal surface is flush with the threaded ring.
15. Apply Loctite 242 to the threads of the new yoke nut, then using it and a new washer, install the existing yoke on the input shaft. Tighten the yoke nut 628 lbf·ft (850 N·m).
16. Connect the main driveshaft to the input shaft. Refer to **Group 41** in the applicable vehicle service/workshop manual.
17. Remove the chocks.

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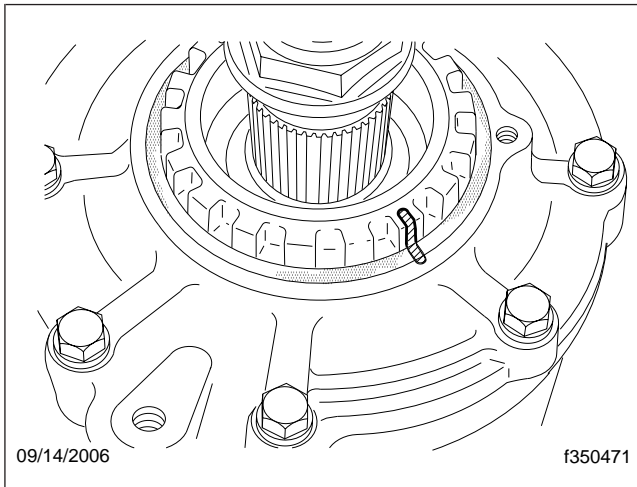
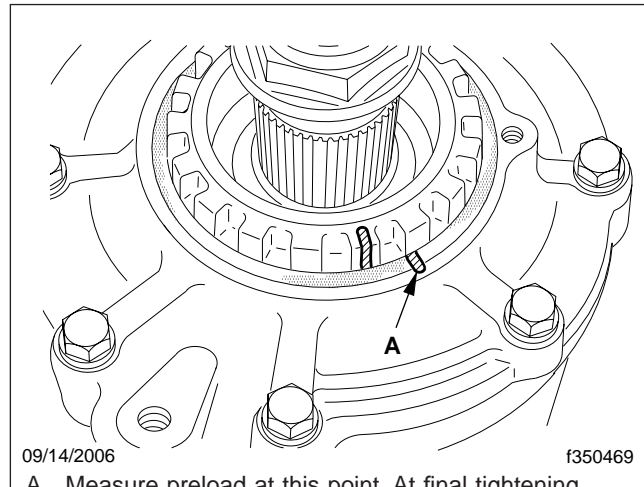
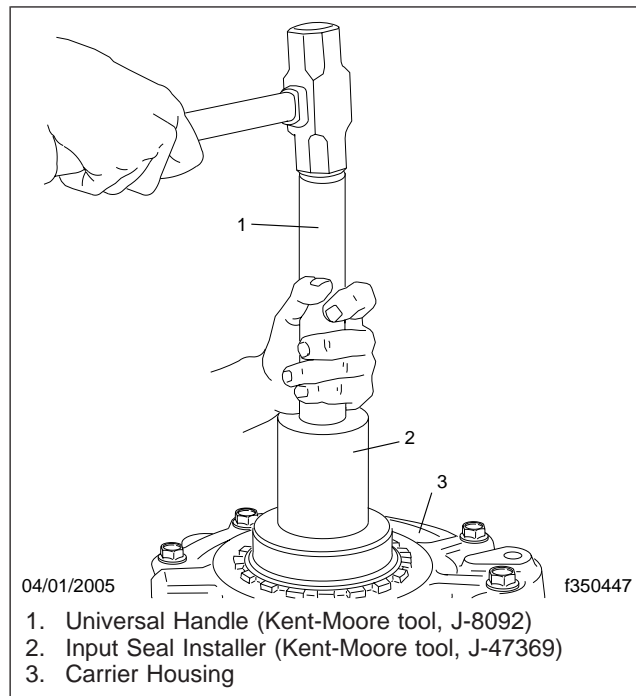


Fig. 5, Marking the Tooth and Bearing Cage



A. Measure preload at this point. At final tightening, this mark should be opposite the center of the next tooth, but no further.

Fig. 6, Advancing the Threaded Ring



1. Universal Handle (Kent-Moore tool, J-8092)
2. Input Seal Installer (Kent-Moore tool, J-47369)
3. Carrier Housing

Fig. 7, Installing the Forward Carrier Input Seal

Warranty

Normal warranty applies. Use the damage code and time guide information in [Table 2](#), and refer to the number of this bulletin in the story of the claim. Use ABP P0139976646 as the failed part number.

Tandem Axle Input Seal Leaks

35-22

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Damage Code and Labor Allowance					
VMRS CK33	VMRS CK18	Damage Code	SRT Code	Description	Time: hours
022-004-100	56	420-100551609	420-5050A	Threaded Ring, R/R	1.8

Table 2, Damage Code and Labor Allowance