

May 2020  
FL846AB  
NHTSA #20V-176  
Transport Canada #2020-123

## Subject: Meritor MX EVO 120 Front Drive Axles

**Models Affected: Specific Model Year 2019-2020 Freightliner 108SD and Business Class M2 vehicles manufactured May 3, 2018, through January 30, 2019, and equipped with certain Meritor MX 120 EVO front drive steer axles.**

### General Information

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

On certain vehicles, axles were assembled without oil in the wheel end system. This can result in over-heating of the wheel end bearings, which can lead to damage and/or seizing of bearings, plastic deformation of components, and eventually wheel end separation from the axle, increasing the risk of a vehicle crash.

Vehicles will be inspected for the presence of oil in the front drive steer hubs and repaired if necessary. Less than one percent of vehicles are expected to require repair.

There are approximately 1,570 vehicles involved in this campaign.

#### 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 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 the kit(s) listed below from your facing Parts Distribution Center.

**IMPORTANT:** Order recall kits only for vehicles that fail the inspection and require repair. This is expected to be less than one percent of vehicles. **The same recall kits are used for FL817 and FL846. Be sure to order the correct kit per Table 1. below (25-FL817-000 for FL846A and 25-FL817-001 for FL846B).**

If our records show your dealership has ordered any vehicle(s) involved in campaign number FL846, a list of the customers and vehicle identification numbers will be available on DTNAConnect. Please refer to this list when ordering parts for this recall.

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**Table 1** - Replacement Parts for FL846

Campaign Number	Kit Number	Part Description	Part Number	Qty. per Kit
FL846A	25-FL817-000	SPINDLE (INCLUDES SPINDLE BUSHING)	A-3213-T-2256	1 ea
		SPINDLE OIL SEAL	A-1205-V-2648	1 ea
		WHEEL SEAL	A-1205-N-1392	1 ea
		HUB (INCLUDES CUPS)	0516193003	1 ea
		WASHER	WA-310	10 ea
		CAP SCREW	S-21014-A-2	10 ea
		INNER CONE	1228-K-1805	1 ea
		OUTER CONE	1228-U-1815	1 ea
		INNER ADJUSTMENT NUT	1227V516	1 ea
		LOCK WASHER	1229R1058	1 ea
		OUTER ADJUSTMENT NUT	1227H346	1 ea
		O RING	5X1429	1 ea
		WASHER	1229-U-1503	8 ea
		CAP SCREW	10X1594	8 ea
		WASHER	1229-K-1597P	8 ea
CAP SCREW	S 269P 2	8 ea		
FL846B	25-FL817-001	SPINDLE (INCLUDES SPINDLE BUSHING)	A-3213-T-2256	1 ea
		SPINDLE OIL SEAL	A-1205-V-2648	1 ea
		WHEEL SEAL	A-1205-N-1392	1 ea
		HUB (INCLUDES CUPS)	0516193002	1 ea
		WASHER	WA-310	10 ea
		CAP SCREW	S-21014-A-2	10 ea
		INNER CONE	1228-K-1805	1 ea
		OUTER CONE	1228-U-1815	1 ea
		INNER ADJUSTMENT NUT	1227V516	1 ea
		LOCK WASHER	1229R1058	1 ea
		OUTER ADJUSTMENT NUT	1227H346	1 ea
		O RING	5X1429	1 ea
		WASHER	1229-U-1503	8 ea
		CAP SCREW	10X1594	8 ea
		WASHER	1229-K-1597P	8 ea
CAP SCREW	S 269P 2	8 ea		
FL846AB	N/A	BLANK COMPLETION STICKER	WAR260	1 ea

**Table 1**

**Removed Parts**

U.S. and Canadian Dealers, please follow Warranty Failed Parts Tracking shipping instructions for the disposition of all removed parts. Export distributors, please destroy removed parts unless otherwise advised.

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## Labor Allowance

Table 2 - Labor Allowance

Campaign Number	Procedure	Time Allowed (hours)	SRT Code	Corrective Action
FL846AB	Inspect front axle hub oil level	0.3	996-R089A	06-Inspect
	Inspect front axle hub oil level and repair one hub	2.3	996-R089B	12-Repair Recall/Campaign
	Inspect front axle hub oil level and repair both hubs	4.3	996-R089C	12-Repair Recall/Campaign

Table 2

**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 (landed cost for Export Distributors) by submitting your claim through the Warranty system within 30 days of completing this campaign. Please reference the following information in OWL:

- Claim type is **Recall Campaign**.
- In the Campaign field, enter the campaign number and appropriate condition code (**FL846-A or FL846-B**).
- In the Primary Failed Part Number field, enter **25-FL846-000**.
- In the Parts field, enter the appropriate kit(s) as shown in the Replacement Parts Table. **The same recall kits are used for FL817 and FL846. Be sure to order the correct kit per Table 1. below (25-FL817-000 for FL846A and 25-FL817-001 for FL846B).**
- In the Labor field, first enter the appropriate SRT from the Labor Allowance Table. Administrative time will be included automatically as SRT 939-6010A for 0.3 hours.
- The VMRS Component Code is **F99-999-005** and the Cause Code is **A1 - Campaign**.
- **U.S. and Canada -- Reimbursement for Prior Repairs.** When a customer asks about reimbursement, please do the following:
  - Accept the documentation of the previous repair.
  - Make a brief check of the customer's paperwork to see if the repair may be eligible for reimbursement. (See the "Copy of Owner Letter" section of this bulletin for reimbursement guidelines.)
  - Submit an OWL Recall Pre-Approval Request for a decision.
  - Include the approved amount on your claim in the Other Charges section.
  - Attach the documentation to the pre-approval request.
  - If approved, submit a based on claim for the pre-approval.
  - Reimburse the customer the appropriate amount.

**IMPORTANT:** OWL 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.

U.S. and Canadian dealers, contact the Warranty Campaigns Department via Web inquiry at DTNACconnect.com / WSC, if you have any questions or need additional information. Export distributors, submit a Web inquiry or contact your International Service Manager.

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U.S. and Canadian Dealers: 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. Export Distributors: Excess inventory is not returnable.

The letter notifying U.S. and Canadian 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.

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## Copy of Notice to Owners

### Subject: Meritor MX EVO 120 Front Drive Axles

**For the Notice to U.S. Customers:** This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act. **For the Notice to Canadian Customers:** This notice is sent to you in accordance with the requirements of the Motor Vehicle Safety Act. This is to inform you that your vehicle may contain a defect that could affect the safety of a person.

Daimler Trucks North America LLC (DTNA), on behalf of its Freightliner Trucks Division, has decided that a defect that relates to motor vehicle safety exists on specific Model Year 2019-2020 Freightliner 108SD and Business Class M2 vehicles manufactured May 3, 2018, through January 30, 2019, and equipped with certain Meritor MX 120 EVO Front Drive Steer axles.

On certain vehicles, axles were assembled without oil in the wheel end system. This can result in over-heating of the wheel end bearings, which can lead to damage and/or seizing of bearings, plastic deformation of components, and eventually wheel end separation from the axle, increasing the risk of a vehicle crash.

Vehicles will be inspected for the presence of oil in the front drive steer hubs and repaired if necessary. Less than one percent of vehicles are expected to require repair.

Please contact an authorized Daimler Trucks North America dealer to arrange to have the Recall performed and to ensure that parts are available at the dealership. To locate an authorized dealer, search online at [www.Daimler-TrucksNorthAmerica.com](http://www.Daimler-TrucksNorthAmerica.com). On the menu tab, select "Contact," scroll down to "Find a Dealer," and select the appropriate brand. The Recall will take approximately one half hour to two and a half hours and will be performed at no charge to you. You may also confirm your vehicle's involvement in this recall at this URL: <https://dtna-dlrinfo.prd.freightliner.com:48518/VinLookup/vin-module/getVinLookupPage>

You may be liable for any progressive damage that results from your failure to complete the Recall within a reasonable time after receiving notification.

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 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 have questions about this Recall, 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 [DTNA.Warranty.Campaigns@Daimler.com](mailto:DTNA.Warranty.Campaigns@Daimler.com). **For the Notice to U.S. Customers:** If you are not able to have the defect remedied without charge and within a reasonable time, you may 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>. **For the Notice to Canadian Customers:** If you wish to submit a complaint about this recall, you can contact Transport Canada road safety, 80 rue Noel, Gatineau, Quebec J8Z 0A1 or call (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

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## **Reimbursement to Customers for Repairs Performed Prior to Recall**

If you have already **paid** to have this recall condition corrected you may be eligible to receive reimbursement.

Requests for reimbursement may include parts and labor. Reimbursement may be limited to the amount the repair would have cost if completed by an authorized Daimler Trucks North America LLC dealer. The following documentation must be presented to your dealer for consideration for reimbursement.

Please provide original or clear copies of all receipts, invoices, and repair orders that show:

- The name and address of the person who paid for the repair
- The Vehicle Identification Number (VIN) of the vehicle that was repaired
- What problem occurred, what repair was done, when the repair was done
- Who repaired the vehicle
- The total cost of the repair expense that is being claimed
- Proof of payment for the repair (such as the front and back of a cancelled check or a credit card receipt)

Reimbursement will be made by check from your Daimler Trucks North America LLC dealer.

Please speak with your Daimler Trucks North America LLC authorized dealer concerning this matter.

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## Work Instructions

### Subject: Meritor MX EVO 120 Front Drive Axles

**Models Affected: Specific Model Year 2019-2020 Freightliner 108SD and Business Class M2 vehicles manufactured May 3, 2018, through January 30, 2019, and equipped with certain Meritor MX 120 EVO front drive steer axles.**

**IMPORTANT:** Only order kits if vehicles fail the inspection and require repair. This is expected to be less than one percent of vehicles. **The same recall kits are used for FL817 and FL846. Be sure to order the correct kit per Table 1. below (25-FL817-000 for FL846A and 25-FL817-001 for FL846B)**

### Wheel Hub Oil Level Inspection

1. Check the base label (Form WAR259) for a completion sticker for FL846 (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 completion sticker is present, no work is needed. If a completion sticker is not present, continue with the next step.
2. Park the vehicle on a level surface, shut down the engine, and set the parking brake. Chock the tires.
3. Loosen the oil drain/fill plug while the truck is on the ground but do not remove the plug.

### **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.**

4. Raise the front of the vehicle until the tires clear the ground. Then place safety stands under the axle.
5. Rotate the hub so the oil fill/drain plug is at the 3 or 9 o'clock position.

NOTE: Oil may spill as the oil fill/drain plug is removed. Place a suitable container under the axle spindle to catch any spilled oil.

6. Remove the plug and check if the oil is even with the bottom of the plug hole. Does the oil flow from the hole when the plug is removed?

**YES** → The oil level is correct. Install the plug and go to step 8.

**NO** → The oil level is inadequate install the plug, and replace the hub. See below procedure for **Wheel Hub Replacement**.

7. Lower the truck to the ground.
8. Torque the oil fill/drain plug 51 to 59 lbf·ft (69 to 80 N·m).
9. Clean a spot on the base label (Form WAR259), write recall number FL846 on a blank red completion sticker (Form WAR260), and attach it to the base label.

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## Wheel Hub Replacement Procedure

1. Park the vehicle on a level surface, shut down the engine, and set the parking brake. Chock the tires.
2. Loosen the oil drain/fill plug while the truck is on the ground but do not remove the plug.

### 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.**

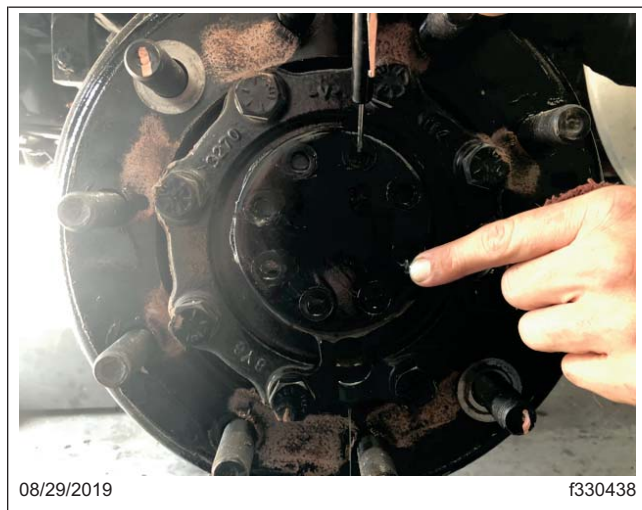
3. Raise the front of the vehicle until the tires clear the ground. Then place safety stands under the axle.
4. Rotate the hub so the fill/drain plug is at the 6 o'clock position.
5. Remove the lug nuts and then remove the tire from the axle.

NOTE: Oil will spill as the hub cap and wheel hub are removed. Place a suitable container under the axle spindle to catch any spilled oil.

6. Remove the oil fill/drain plug. See [Fig. 1](#).
7. Remove the bolts and washer that connect the hub cover to the drive flange. See [Fig. 2](#).



**Fig. 1, Oil Fill/Drain Plug Removed**



**Fig. 2, Hub Cover Bolts Removed**



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8. Remove the hub cover, using a light hammer, by gently tapping the axle. See [Fig. 3](#).



**Fig. 3, Hub Cover Removed**

9. Remove the snap ring from the end of the axle shaft. See [Fig. 4](#). and [Fig. 5](#).



**Fig. 4, Axle Shaft with Snap Ring**



**Fig. 5, Snap Ring Removed from Axle Shaft**

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10. Remove the eight flange bolts that connect the drive flange to the wheel hub. See [Fig. 6.](#) and [Fig. 7.](#)



**Fig. 6, Flange Bolts Connecting the Drive Flange to the Wheel Hub**



**Fig. 7, Flange Bolts that connect the Drive Flange to the Wheel Hub Removed**

11. Remove the drive flange from the hub. If necessary, use a puller to remove the drive flange. See [Fig. 8.](#)

12. Remove the brake drum. See [Fig. 9.](#)



**Fig. 8, Drive Flange from the Hub Removed**

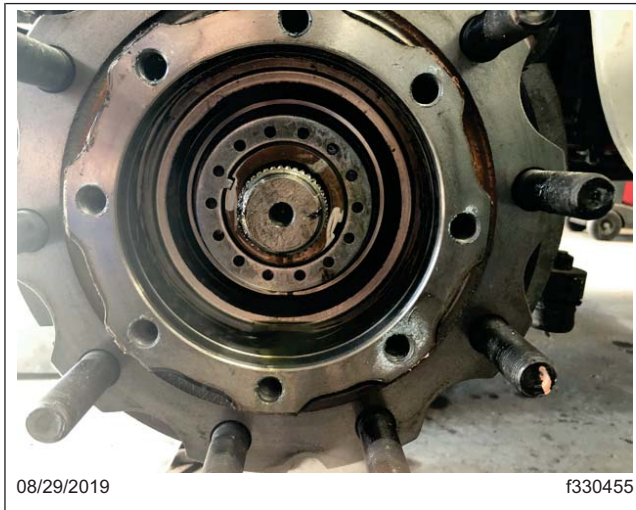


**Fig. 9, Brake Drum Removed**

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13. Remove the outer spindle nut. See [Fig. 10](#).

14. Remove the lock ring. See [Fig. 11](#).



**Fig. 10, Outer Spindle Nut Removed**



**Fig. 11, Lock Ring Removed**

15. Remove the inner spindle nut. See [Fig. 12](#).



**Fig. 12, Inner Spindle Nut Removed**

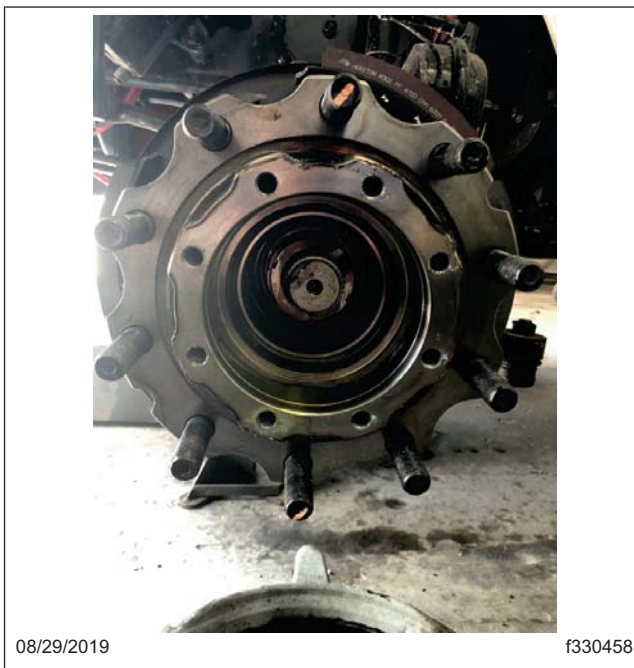
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## NOTICE

- Be careful not to let the outer wheel bearing drop from the axle spindle. Dropping the bearing can warp the cage or damage the rollers, ruining the bearing. Use care when working with the hubs. To prevent damage to the tone wheel, do not drop the hub, or lay it down in a way that would damage the tone wheel.
- Do not spin bearing rollers at any time. Dirt or grit can scratch the roller surface and cause rapid wear of the bearing assembly. Treat used bearings as carefully as new ones.

16. Remove the outer bearing. See [Fig. 13](#).

17. Remove the hub and inner bearing. See [Fig. 14](#).



**Fig. 13, Outer Bearing Removed**



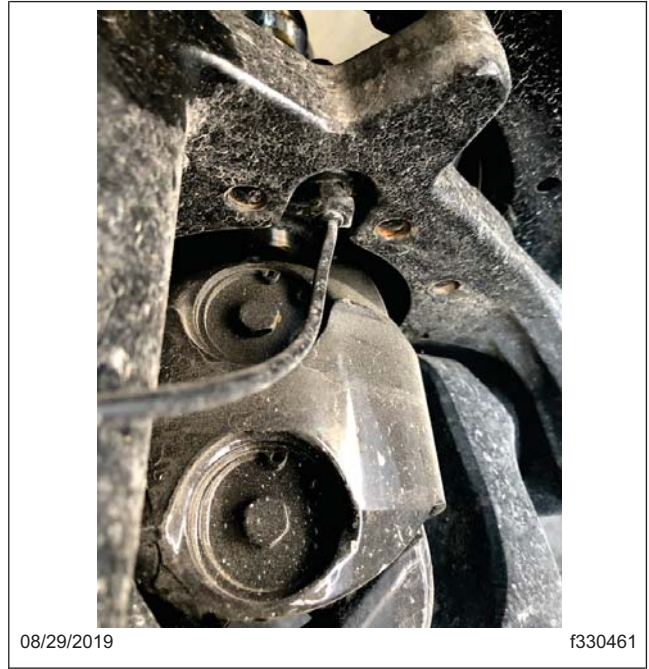
**Fig. 14, Hub and Inner Bearing Removed**

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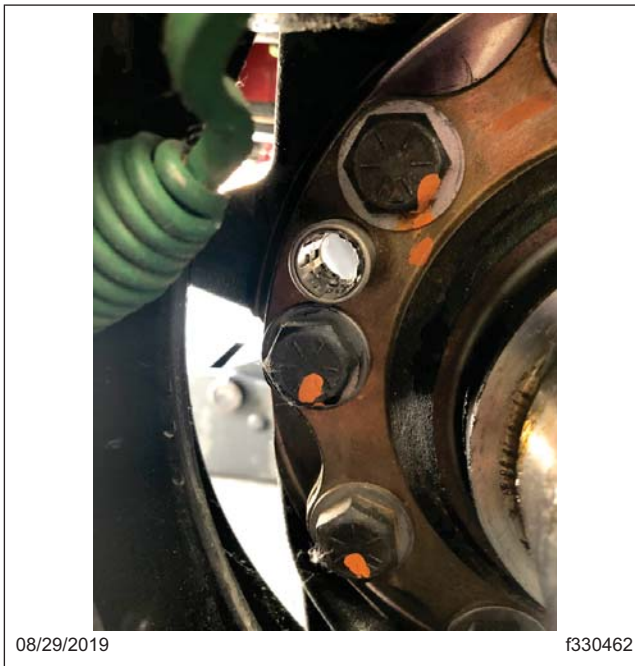
18. Remove the ABS sensor. See [Fig. 15](#), [Fig. 16](#), [Fig. 17](#) and [Fig. 18](#).



**Fig. 15, Removal of ABS Sensor**



**Fig. 16, Removal of ABS Sensor**



**Fig. 17, Removal of ABS Sensor**



**Fig. 18, ABS Sensor Removed**

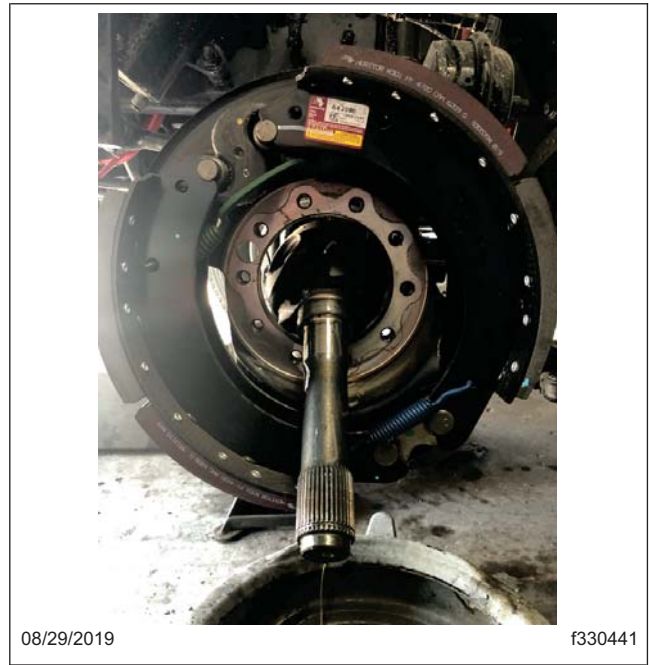
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19. Remove ten spindle mounting flange bolts. See [Fig. 19](#).

20. Remove the spindle from the assembly. See [Fig. 20](#).



**Fig. 19, Mounting Flange Bolt Removed**



**Fig. 20, Spindle from the Assembly Removed**

21. Install the spindle seal. See [Fig. 21](#). and [Fig. 22](#).



**Fig. 21, Installing Spindle Seal**



**Fig. 22, Spindle Seal Installed**

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## NOTICE

Ensure that both bearing assemblies are coated with fresh oil. Use only fresh oil on the bearing assemblies; old oil could be contaminated with dirt or water (both are corrosives) and could cause damage to both wheel bearing assemblies and the wheel hub.

22. Lubricate the new inner wheel bearing from the parts kit by dipping it in oil and slowly working the rollers in oil. See [Fig. 23](#), and [Fig. 24](#).



Fig. 23, Lubricating the New Inner Wheel Bearing



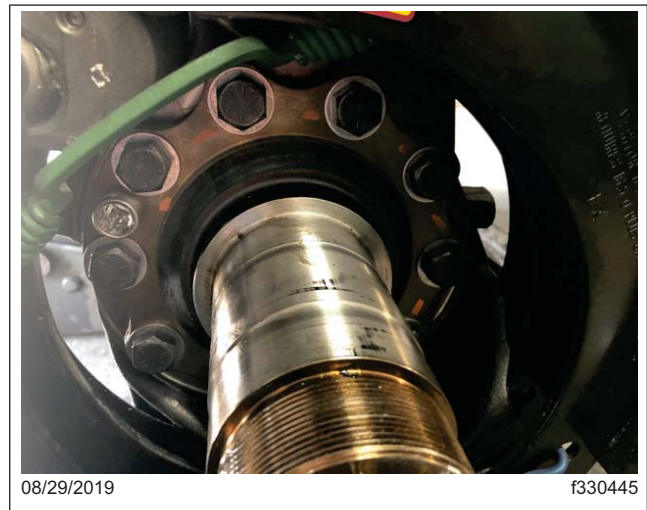
Fig. 24, New Inner Wheel Bearing Lubricated

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23. Install a lubricated new inner wheel bearing into the hub.
24. Using the hub seal installation tool install the hub seal into the hub bore. Do not force or hit the seal after it has reached the bottom of the bore, which can damage the seal. See [Fig. 25](#).
25. Install the spindle and fasten one bolt.
26. Install the remaining nine spindle bolts and then torque all 10 of them to 180 lbf-ft (244 N·m). See [Fig. 26](#).



**Fig. 25, Hub Seal Installed**



**Fig. 26, Installing the Spindle Bolts**

27. Install the ABS sensor into the ABS bushing in the axle knuckle.

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## NOTICE

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- Use care when installing the hubs. To prevent damage to the tone wheel, do not drop the hub or lay it down in a way that would damage the tone wheel.
  - Do not remove the outer wheel bearing once the hub is installed on the axle. Removing the outer bearing could cause the oil seal to become misaligned, which could cause damage to the wheel bearings, the hub, and the axle spindle.
28. Install the hub assembly onto the axle. Press the hub until the inner bearing is flat against the face of the spindle.
  29. Install the outer bearing cone and hand tighten the inner adjuster nut.
  30. Use a torque wrench to tighten the adjusting nut 100 lbf-ft (136 N·m).
  31. Rotate the hub three full turns to ensure all the bearings and seal surfaces are in contact.
  32. Loosen the adjusting nut ¼ turn. Do not rotate the hub assembly after backing off the adjusting nut.
  33. Install the lock ring and outer nut. Torque the outer nut to 325 lbf-ft (441 N·m).



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34. Check the resulting end play with a dial indicator. The end play must be between 0.001 and 0.005 inch (0.03 and 0.13 mm). If the end play is not within the specified value, follow the below procedure.
  - Remove the jam nut and locking device, and back off or tighten the inner adjusting nut.
  - Install the locking device and jam nut.
  - Measure the end play. If the end play is not within 0.001 and 0.005 inch (0.03 and 0.13 mm), repeat the adjustment procedure until the correct end play is achieved.
35. Install the new O-ring on the drive flange.
36. Install the drive flange onto the hub with one bolt at first, then install all the remaining flange bolts.
37. Install the snap ring onto the end of the axle shaft. Ensure the snap ring is positioned in the groove at the end of the axle shaft.
38. Clean the hub cover. See [Fig. 27.](#) and [Fig. 28.](#)



Fig. 27, Cleaning the Hub Cover



Fig. 28, Hub Cover Cleaned

39. Install the hub cover, and hand tighten all the bolts.
40. Install the brake drum.

## WARNING

If the wheel nuts cannot be tightened to minimum torque values, the wheel studs have lost their locking action, and the wheel hub flange is probably damaged. In this case, replace it with a new wheel hub assembly. Failure to replace the wheel hub assembly when the conditions described above exist could result in the loss of a wheel or loss of vehicle control, and possible personal injury.

41. Install the tire.
42. Rotate the tires so that the oil fill/drain plug is at the 3 or 6 'o clock position.

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43. Lower the truck to the ground.
44. Torque the lug nuts to 450 lbf-ft to 550 lbf-ft (610 N·m to 746 N·m).
45. Torque the drive flange bolts to 190 lbf-ft (257 N·m) and torque the hub cover to 40 lbf-ft (54 N·m).

 **WARNING**

**Failure to add oil to the wheel hub after the hub has been serviced will cause the wheel bearings to overheat and seize during vehicle operation. Seized bearing rollers can cause sudden damage to the tire or axle, possibly resulting in personal injury and property damage.**

46. Fill the hub with oil until oil comes out of the hub by keeping the hole at 3 or 6 o'clock position.
47. Install and torque the oil fill/drain plug 51 to 59 lbf-ft (69 to 80 N·m).
48. Clean a spot on the base label (Form WAR259), write recall number FL846 on a blank red completion sticker (Form WAR260), and attach it to the base label.