



Identifying and Replacing Non-Conforming Axle Beams on Meritor MFS Series Front Non-Drive Steer Axles

3100L8020 Program

Hazard Alert Messages

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

⚠ WARNING

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury and damage to components can result.

Use a brass or leather mallet for assembly and disassembly procedures. Do not hit steel parts with a steel hammer. Pieces of a part can break off. Serious personal injury and damage to components can result.

How to Obtain Additional Maintenance, Service and Product Information

Refer to Maintenance Manual 2, Front Non-Drive Steer Axles; and Maintenance Manual MM-0409, Wheel-End Components, for additional information. To access these publications, visit Literature on Demand at Meritor.com.

Non-Conforming Axle Beam Identification and Replacement

This technical bulletin provides procedures for identifying and replacing non-conforming axle beams on Meritor front non-drive steer axles. You should only perform these procedures if you have been notified by the OEM. The OEM has determined which axles are suspect based on the VIN.

A Pre-Call Worksheet is provided at the end of this technical bulletin to assist in recording information.

Required Parts

If replacement is necessary, use the axle assembly part number, sometimes referred to as an axle specification number, on the steel tag at the front center of the axle to determine the correct replacement kit part number. Figure 1.

To order parts, please use the OEM Parts Distribution Center (PDC) process. Refer to Table A and Table B for kit and part number information. For technical assistance, please contact the Meritor OnTrac™ Customer Call Center at 866-668-7221 or email the center at ontrac@meritor.com.

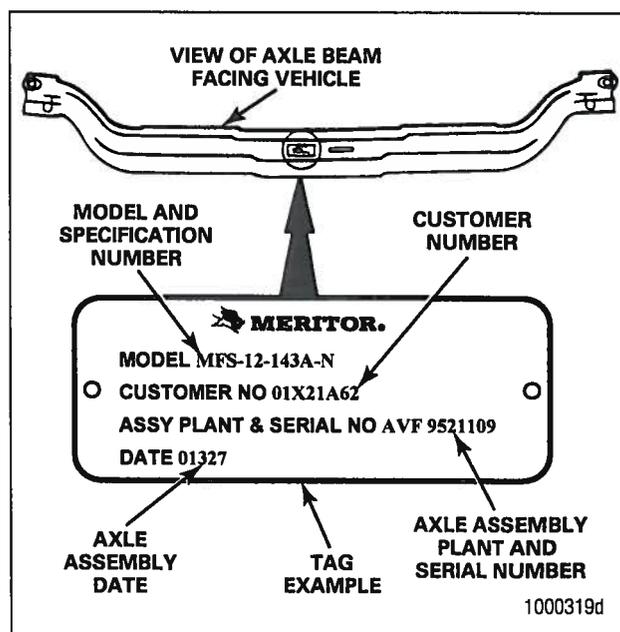


Figure 1

Table A: Meritor Axle Beam Replacement Kits

Meritor Axle Specification Number	Finished I-Beam Number	Replacement Kit Part Number
MFS12143ANN242	3100B8140	FRK-14-10159
MFS12143ANN247		
MFS12143ANN248		
MFS12143ANN254		
MFS12143ANN271		
MFS12143ANN280		
MFS12143ANN286		
MFS12143ANN322		
MFS12143ANN323		
MFS12143ANN324		
MFS12143ANN318	3100M8255	FRK-14-10160
MFS10143ANN139	3100T8106	FRK-14-10161

All I-beams include a kit with the following parts.

Table B: Kit Part Numbers

Description	Part Number	Quantity
Hub Cap Gasket	2208Y363	2
Wheel Seal	A1205X2832	2
Tie Rod End Cotter Pin	K 2414	6
Draw Keys and Nuts	SUBKIT28	1
Brake Backing Plate Bolt	S212162/ S210162	16
Brake Backing Plate Nut	NL2121/NL2101	16
Brake Backing Plate Washer	1229V1556/ 1229W1557	16
Thrust Bearing	A1228E1305K	2
Gaskets and Shims	SUBKIT23	
Includes the following parts:		
Shim	2203D2942	4
Shim	2203K3001	2
Shim	2203L3002	4
Gasket	3208M1027	4
Seal Assembly	A1205X1428	4

Identification Procedure

1. Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Set the parking brake.
2. Find and record the stamped date code located on the right side front of the axle, and the forging part number and plant identification on the left side of the axle. It may be necessary to clean paint and debris from the area in order to see the numbers. Figure 2.

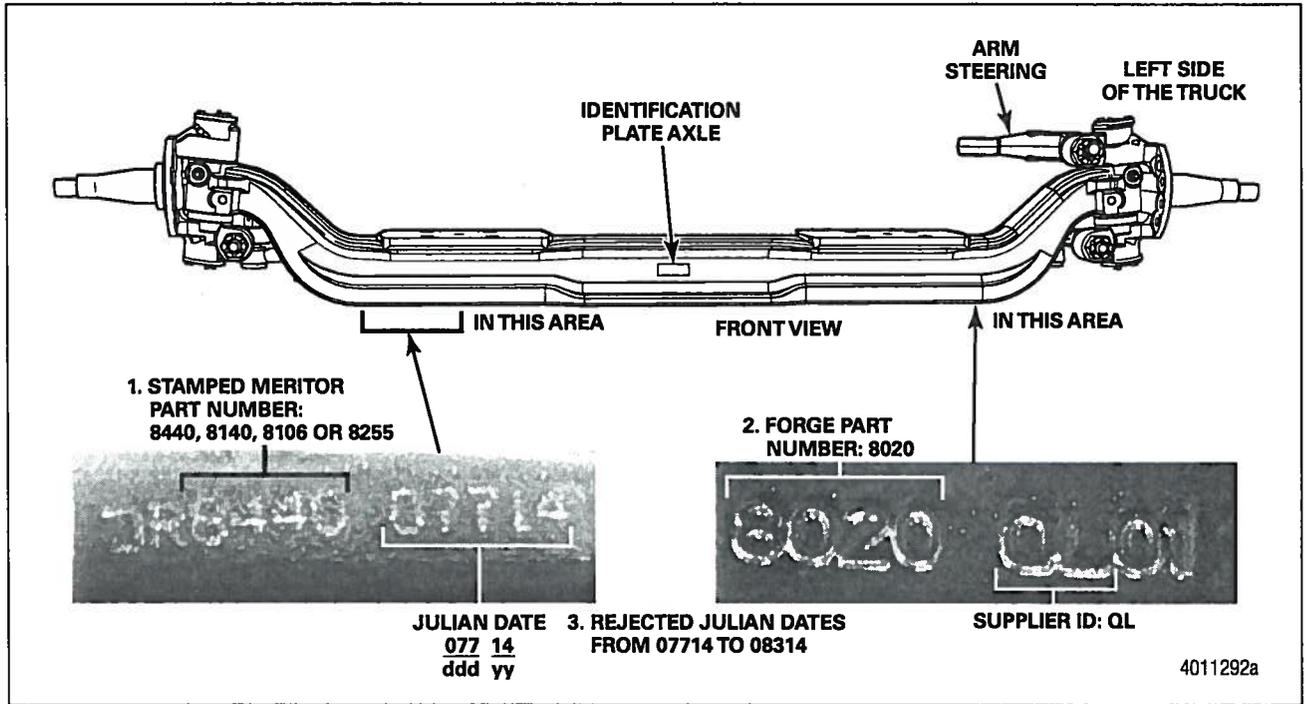


Figure 2

3. Check the numbers to determine if the axle meets the following requirements. The axle must be replaced if the numbers meet ALL of these criteria. Figure 2.
 - A. The VIN has been identified by the OEM as being potentially affected by this program. A notification must be received from the OEM in order to be in this program.
 - B. The stamped finished part number is one of those shown in Table A.
 - C. The forged part number on the left side of the beam is 8020 QL.
 - D. The Julian date is from 07714 to 08314.

Example: 07714 is the 77th day of 2014. The affected Julian date codes are therefore 07714, 07814, 07914, 08014, 08114, 08214 and 08314.

- **If the axle numbers do not match all four criteria:** Follow the OEM's program guidance to close out the program warranty claim. Return the vehicle to the owner.
- **If the axle numbers match all four criteria:** Replace the axle and destroy the removed axle according to the Replacement Procedures in this technical bulletin.

Replacement Procedures

Removal

This procedure will require referencing OEM procedures for completion. Please acquire all needed references prior to starting the repair.

NOTE: Most of the hardware in this procedure will be reused. Make sure to perform procedures in a clean, orderly manner to make installation easier.

1. Wear safe eye protection. Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands.
2. Remove both front tire and wheel assemblies.
3. Remove both front drums.
4. Remove both front hubs.
5. Disconnect the air line to the air chamber.
6. Disconnect the ABS sensor.
7. Remove both front brake assemblies.
8. Remove the cotter pins and nuts from both tie rod ends.
9. Mark one side of the tie rod assembly L or R to ensure the assembly is installed in the same orientation during reassembly.
10. Remove both tie rod ends from the tie rod arms. Leave the tie rod assembly itself intact.
11. Remove the cotter pin and nut from the steering arm end of the drag link.
12. Remove the drag link socket from the steering arm. Leave the socket intact on the drag link.
13. Remove the three fasteners, king pin caps and gaskets from all four positions.
14. Remove all four draw keys.
15. Press out the king pin on both sides and set the knuckle and shims aside. Keep the shim pack with each knuckle for later reuse.
16. Support the I-beam. Remove the U-bolt nuts and washers. Remove the U-bolts.
17. Remove the I-beam. Keep the right and left camber shims and other suspension hardware apart so they can be reinstalled on the same side they were originally located.
18. Destroy the beam and send a photo to the Meritor OnTrac™ Customer Call Center as follows. Cut off one king pin eye and place it next to the axle ID tag. Take one photo containing both the cut off eye portion and the tag. E-mail the photo and the Pre-Call Worksheet information to OnTrac™ at OnTrac@Meritor.com. The beam may be scrapped once OnTrac™ replies acknowledging receipt of the photo. A case number will be supplied for reference.

Installation

1. Place the new I-beam into position, ensuring that the metal tag is located toward the front of the vehicle. Reinstall the existing suspension components and shims on the side they were originally installed. Refer to the OEM service instructions for correct assembly procedures and specifications.
2. Install both knuckles on the axle beam as follows.
 - A. Install the thrust bearing, making sure it is oriented so that the seal is at the top. Figure 3.

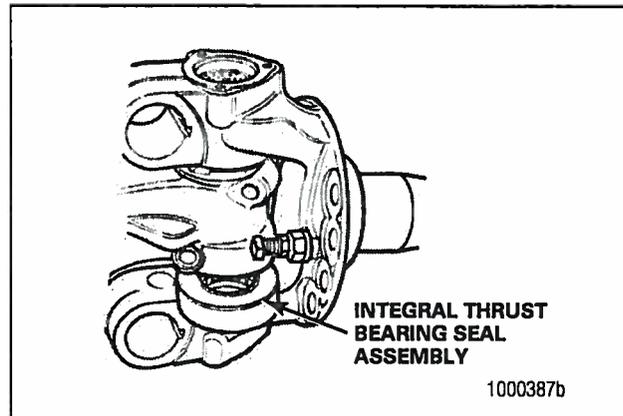


Figure 3

- B. Insert the original shim pack. Figure 4.

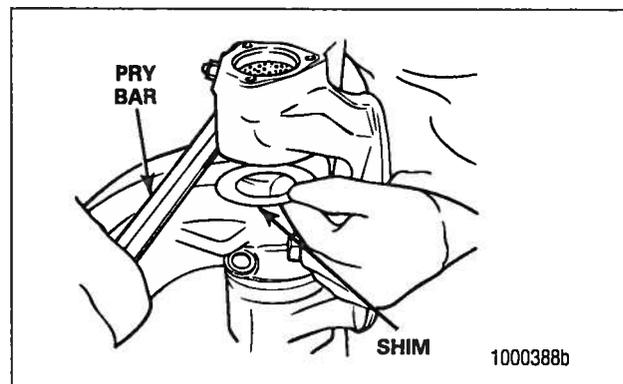


Figure 4

- C. Slide the king pins into place, ensuring the top marking is at the top.
 - D. Locate and install the four draw keys. Tighten all four draw keys to 30-45 lb-ft (41-61 N•m). 
 - E. Check the vertical knuckle end play. The "new" specification is 0.001" to 0.010" (0.0254-0.254 mm). Add shims if necessary.
 - F. Install the king pin caps with new gaskets. Tighten the fasteners to 20-30 lb-ft (27-41 N•m). 

3. Reinstall the drag link. Tighten the nut to the OEM specification. Secure the nut with a cotter pin.
4. Reinstall the tie rod, making sure it is oriented the same as the original. Tighten the tie rod end nuts to 160-300 lb-ft (217-407 N•m). Install the cotter pins. 
5. Install both brake assemblies. Make sure they are oriented in the same position as the original. Tighten the 3/4" fasteners included in kits FRK-14-10159 and FRK-14-10160 to 310-400 lb-ft (420-542 N•m). Tighten the 5/8" fasteners included in kit FRK-14-10161 to 180-230 lb-ft (244-312 N•m). 
6. Reconnect the ABS sensor cable.
7. Reconnect the air line to the air chamber.
8. Install the hubs.
 - A. Install the new wheel seal provided in the kit.
 - B. Measure and adjust the wheel end play. Refer to the OEM recommended instructions for adjusting the wheel end play and final nut torque specifications for the clamping pack used. Measure end play using a dial indicator to achieve the correct end play setting. Record final end play settings.
 - C. Install the new hub cap gaskets provided in the kit.
 - D. Fill the hubs with the OEM suggested lubricant. Check the lubricant level again prior to releasing the vehicle.
9. Install the drums.
10. Install the wheel and tire assemblies according to the OEM recommended instructions.
11. Adjust the brakes.
12. Grease the king pins and tie rod ends.
13. Remove the vehicle from the stands.
14. Perform an alignment.
15. Release the vehicle to the end user.
16. Complete the OEM program claim submittal.



Case # **AM**

Authorization # **ARM**

PRE-CALL WORKSHEET

Meritor Account Code: _____

Vehicle Information

Vehicle Identification Number (VIN): _____
(17 Digits)

Vehicle Owner/Fleet Name: _____ Vehicle Owner Unit # _____

In Service Date: / / Vocation: _____
Mo Day Yr

Component Information

Meritor Component Model Number: _____

Meritor Component Serial Number: _____

Repair Information

Contact Name: _____ Phone: (____) ____ - _____

Work Order Number: _____

Failure Date: / / Odometer Reading: _____ MI / KM / HRS

Description of Occurrence

Service Part Only

Component Purchase Date: / / Original Invoice Number: _____

Mileage on Component: _____

Assistance: 1-866-OnTrac1 (1-866-668-7221)

Fax: 1-248-435-5580

E-Mail: *Email OnTrac*