

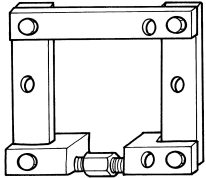
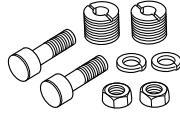
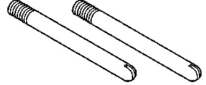
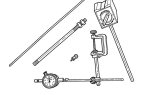
03 - Differential and Driveline/Rear Axle - M220/CASE ASSEMBLY, Differential/Removal and Installation

REMOVAL AND INSTALLATION

+ **Labor Operations:** Click to display a list of Labor Operations associated with this procedure

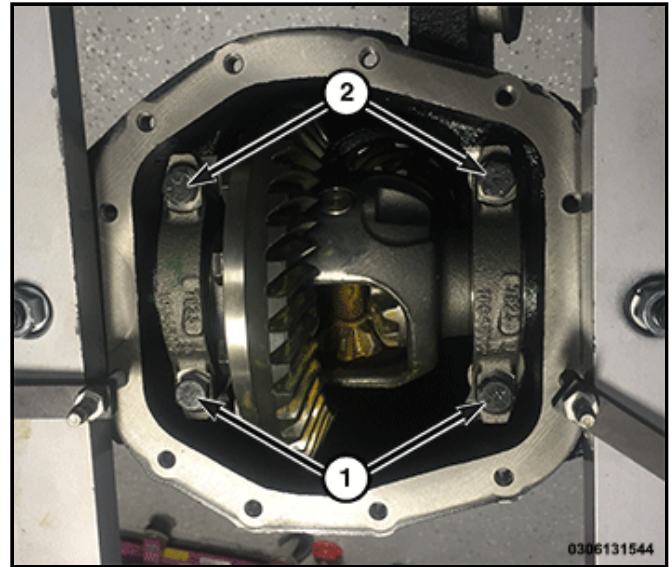
[-] **Special Tools:** Click to hide the list of tools used in this procedure

[Click here to launch the form to order any tools you need.](#)

| | |
|---|---|
|  | <p style="text-align: center;">W-129-B - Spreader, Differential Originally Shipped In Kit Number(s) 9975.</p> |
|  | <p style="text-align: center;">6987B - Adapter Kit, Axle Spreader Originally Shipped In Kit Number(s) 6980, 6994, 6995, 8653.</p> |
|  | <p style="text-align: center;">C-3288-B - Set, Alignment Pins Originally Shipped In Kit Number(s) 9975.</p> |
|  | <p style="text-align: center;">C-3339A - Set, Dial Indicator Originally Shipped In Kit Number(s) 9202.</p> |

REMOVAL

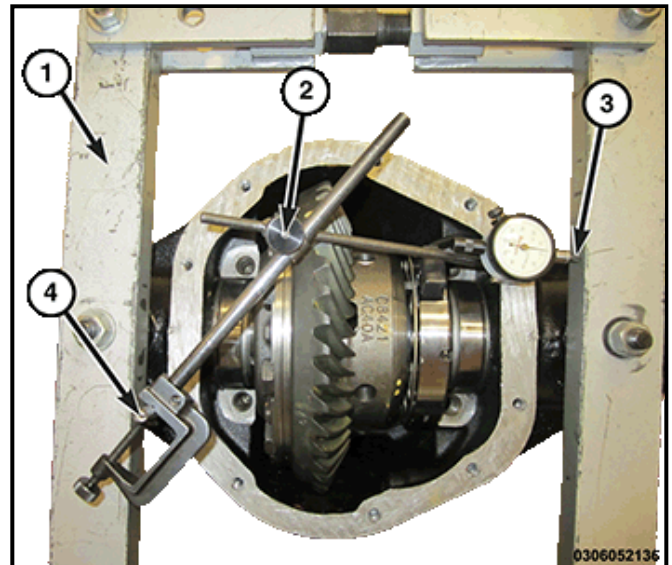
1. Raise and support the vehicle ([Refer to 04 - Vehicle Quick Reference/Hoisting/Standard Procedure](#)) .
2. Remove the differential drain plug and drain the fluid.
3. Remove the differential cover ([Refer to 03 - Differential and Driveline/Rear Axle/COVER, Differential/Removal and Installation](#)) .
4. Remove the axle shafts ([Refer to 03 - Differential and Driveline/Rear Axle/SHAFT, Axle/Removal and Installation](#)) .
5. Remove the axle locker switch ([Refer to 03 - Differential and Driveline/Rear Axle/SWITCH, Axle Lock/Removal and Installation](#)) .
6. Loosen the differential bearing cap bolts (1, 2).



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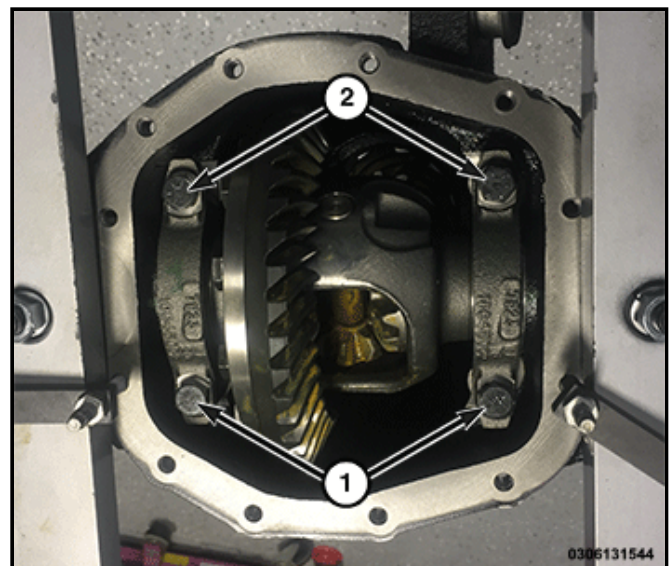
7. Position the [W-129-B](#) (1) with [6987B](#) on the differential housing locating holes. Install the hold-down clamps and tighten the turnbuckle finger-tight.
8. Install an [C-3288-B](#) (4) on the left side of the differential housing. Attach the [C-3339A](#) (2) to the pin. Load the dial indicator plunger against the opposite side of the differential housing spreader (3) and zero the dial indicator.
9. Spread differential housing while measuring the distance with the dial indicator.

NOTE: Never spread the differential housing over 0.64 mm (0.025 in.). Failure to follow these instructions will damage the housing.



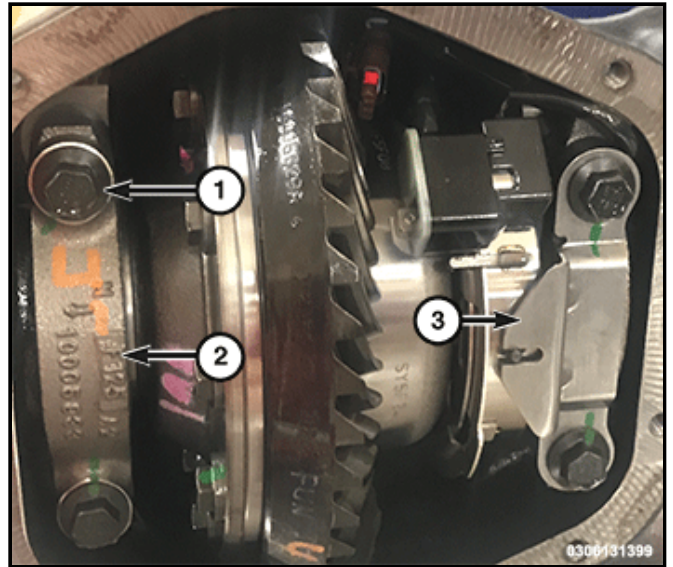
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10. Remove the dial indicator.
11. Holding the differential case in position, remove the differential bearing cap bolts (1, 2).



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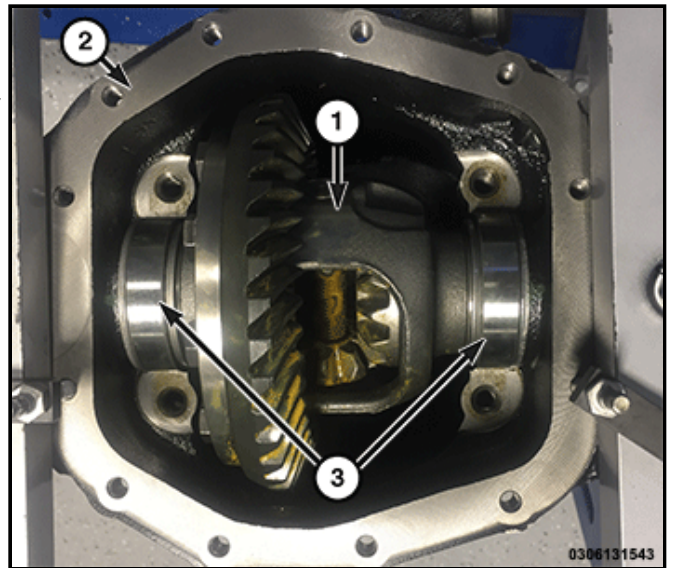
12. Remove the coil anti-rotation bracket (3) from the bearing cap, remove both bearing caps (2).



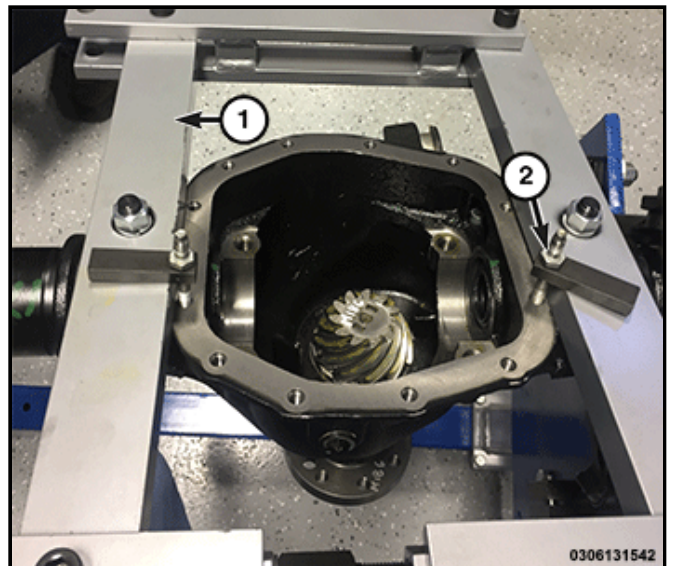
13. Remove the differential case (1) from the differential housing (2) and tag the differential bearing cup and washer (3) locations.

NOTE:

Non-locker rear differential case assembly shown for bearing clarity.



14. Remove the W-129-B (1) and 6987B (2) from the housing.



NOTE:

Do not use water, steam, kerosene or gasoline for cleaning.

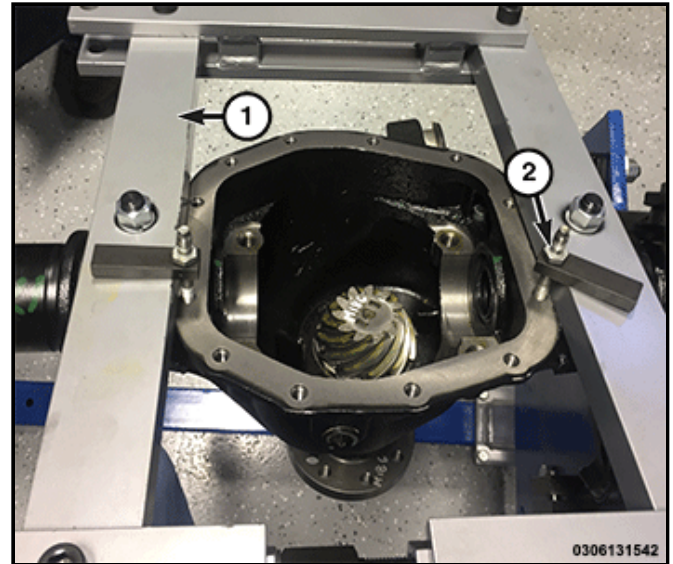
- Clean the differential housing cavity with flushing oil, light engine oil or lint free cloth.

INSTALLATION

NOTE:

If replacement differential bearings or a differential case are being installed, the differential side bearing washer requirements may change. Refer to Adjustments (Differential Bearing Preload and Gear Backlash) to determine the proper washer selection.

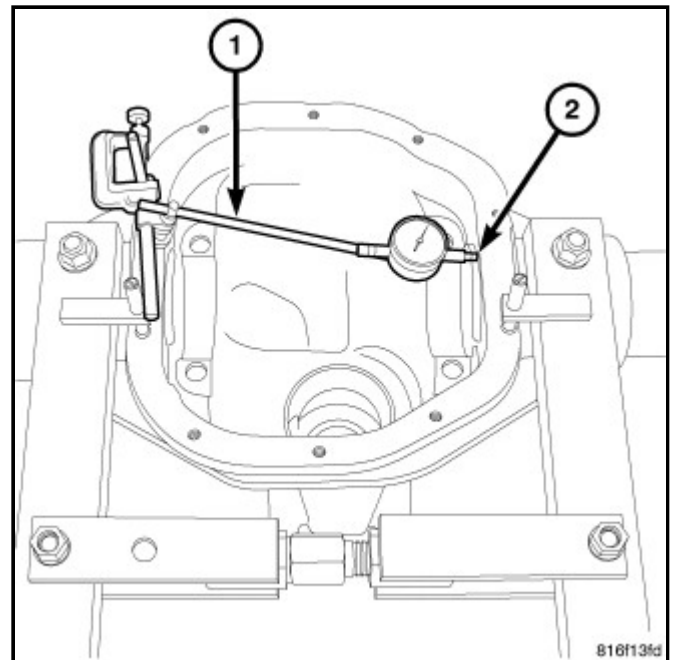
- Position the W-129-B (1) and 6987B seated in the differential housing locating holes. Install the hold-down clamps (2) and tighten the turnbuckle finger-tight.



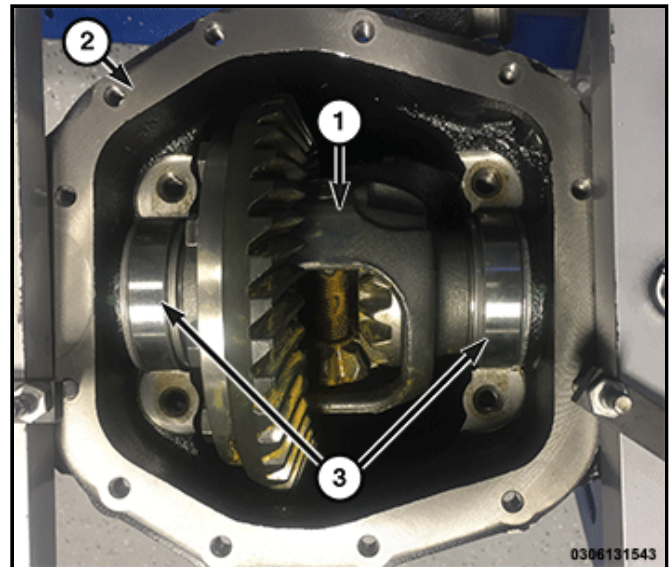
- Install an C-3288-B at the left side of the differential housing. Attach the C-3339A (1) to the pin. Load the indicator plunger (2) against the opposite side of the differential housing and zero the dial indicator.

NOTE: Never spread the differential housing over 0.64 mm (0.025 in.). Failure to follow these instructions will damage the housing.

- Spread the differential housing while measuring the distance with the dial indicator.
- Remove the dial indicator.

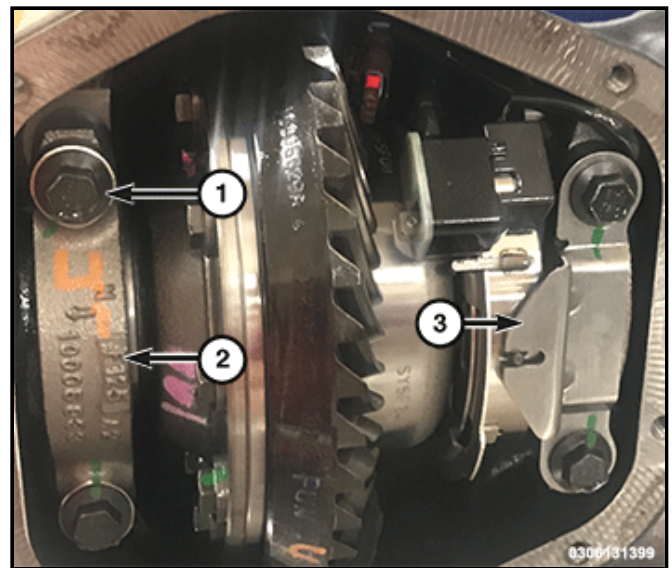


- Install the differential case (1) into the differential housing (2) with the differential bearing cups and washers (3) in their original locations.

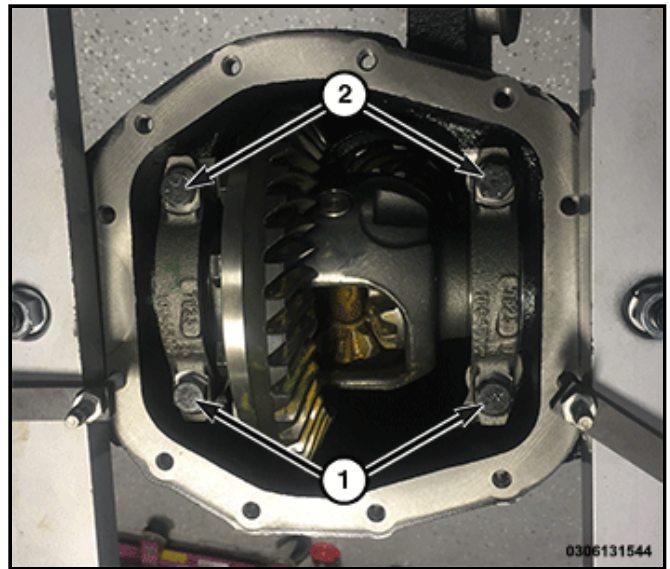


NOTE: Non-locker rear differential case assembly shown for bearing clarity.

6. Install the bearing caps (2) in their original locations and install and center the coil anti-rotation bracket (3).



7. Loosely install the differential bearing cap bolts (1, 2).
8. Remove the differential housing spreader.
9. Tighten the bearing cap bolts (1, 2) in a criss-cross pattern to the proper (Torque Specifications) .



10. Install the axle shafts (Refer to 03 - Differential and Driveline/Rear Axle/SHAFT, Axle/Removal and Installation) .
11. Install the axle locker switch (Refer to 03 - Differential and Driveline/Rear Axle/SWITCH, Axle Lock/Removal and Installation) .
12. Install the differential cover (Refer to 03 - Differential and Driveline/Rear Axle/COVER, Differential/Removal and Installation) .
13. Fill the differential with the specified fluid (Refer to 04 - Vehicle Quick Reference/Capacities and Recommended Fluids/Specifications) .
14. Remove the support and lower the vehicle.

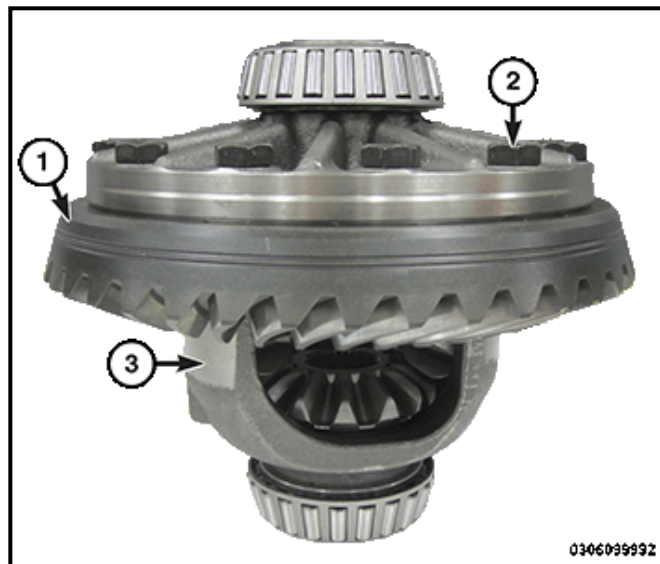
03 - Differential and Driveline/Rear Axle - M220/CASE ASSEMBLY, Differential/Disassembly and Assembly

DISASSEMBLY AND ASSEMBLY

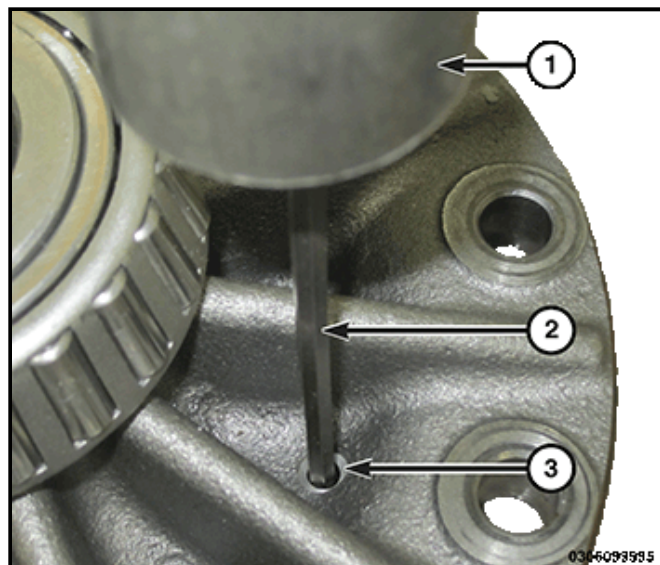
⊕ **Labor Operations:** Click to display a list of Labor Operations associated with this procedure

DISASSEMBLY

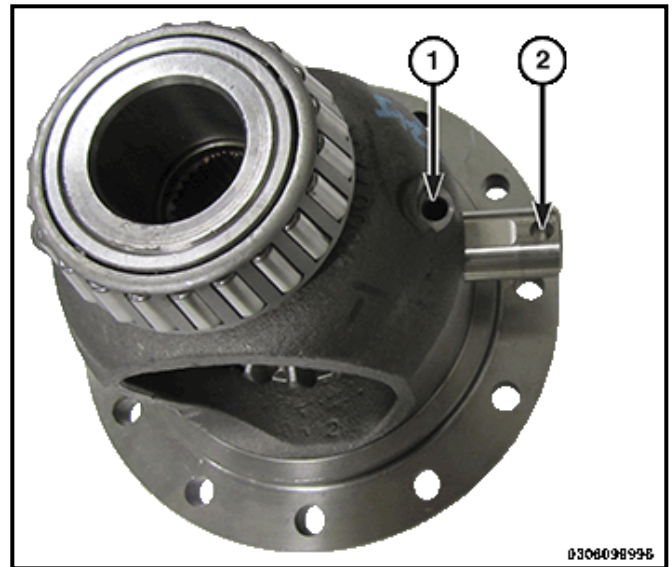
1. Remove and **DISCARD** the ring gear bolts (2) and remove the ring gear (1) from the differential case (3).



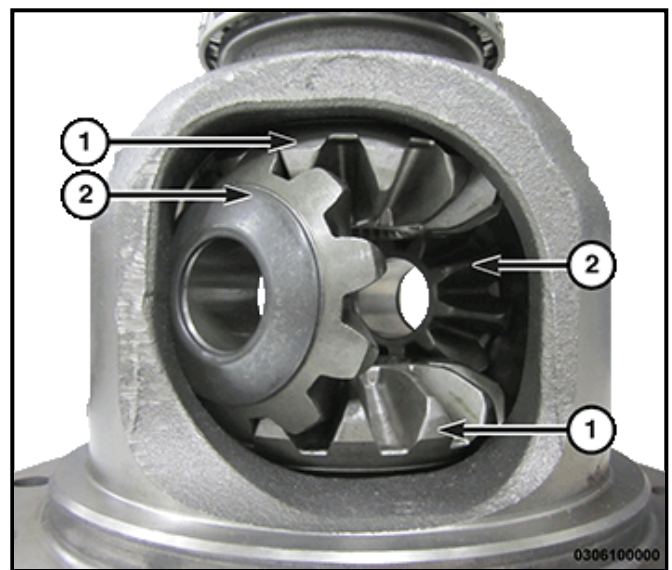
2. Remove the pinion mate shaft roll pin (3) with a punch (2) and hammer (1).



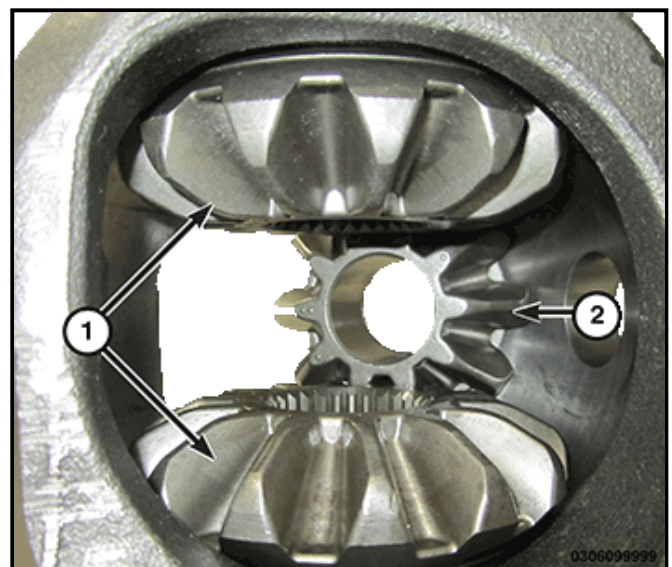
3. Remove the pinion mate shaft (2) from the differential case (1) and the pinion gears.



4. Rotate the differential side gears (1) to expose the pinion gears to the differential windows.
5. Remove the pinion gears (2) with the thrust washers through the differential windows.



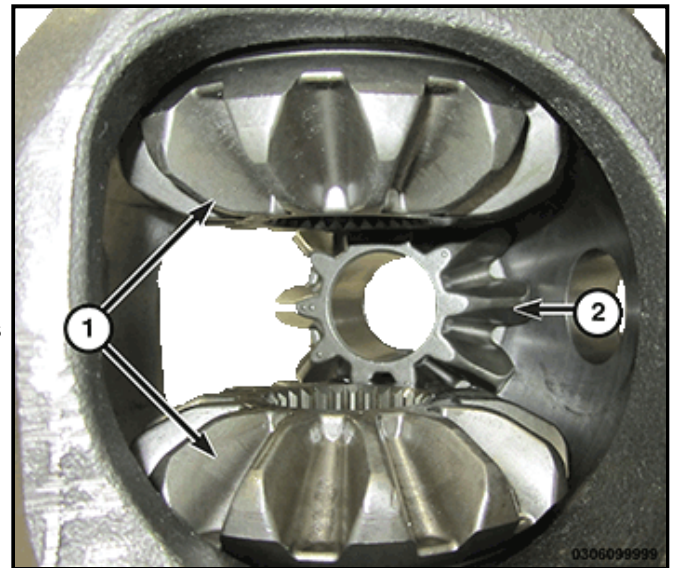
6. Remove the differential side gears (1) with thrust washers through the differential window.



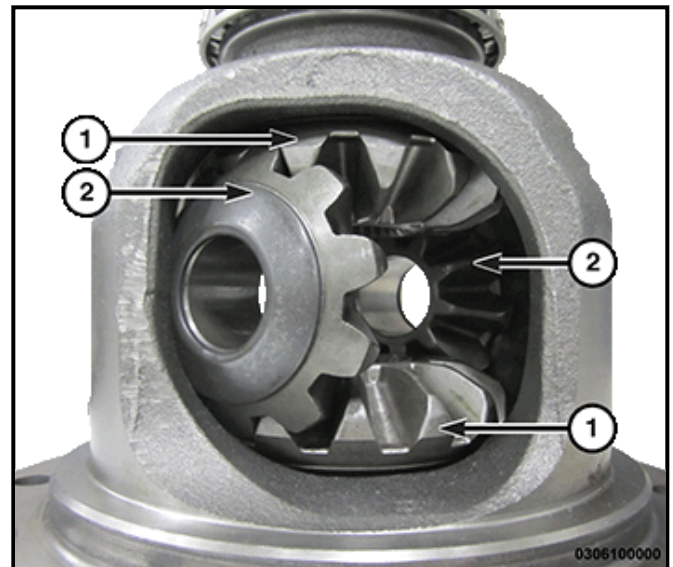
ASSEMBLY**NOTE:**

If the same gears and thrust washers are being used, install them into their original locations.

1. Lubricate all differential components with axle lubricant.
2. Install the differential side gears (1) with the thrust washers through the differential window.



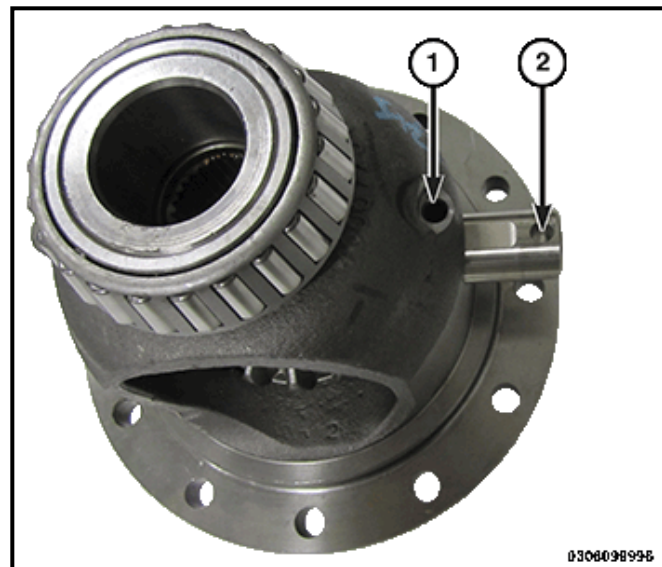
3. Install the pinion gears (2) with the thrust washers through differential windows.



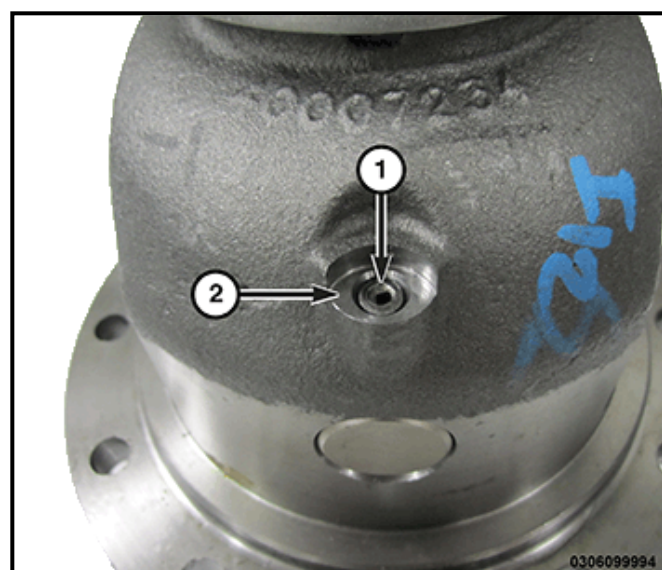
4. Rotate the pinion gears (1) with the thrust washers and align the gears to the pinion mate shaft hole (2).



5. Install the pinion mate shaft (2) in the differential case and pinion gears while keeping the pinion mate shaft roll pin hole aligned with the opening (1).



6. Install the pinion mate shaft roll pin (1) in the differential (2) and through the pinion mate shaft.



7. Install the ring gear (1), the **NEW** ring gear bolts (2) on the differential case (3) and alternately tighten to the proper (Refer to 03 - Differential and Driveline/Rear Driveline Module/Technical Specifications) .

