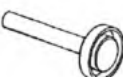
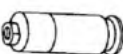


Ring Gear Backlash Adjustment

Special Tool(s) / General Equipment

 E238640	205-430 Collets, Differential Carrier Bearing TKIT-1999-F/FLM/LT
 E238641	205-431 Retaining Ring, Differential Carrier Bearing TKIT-1999-F/FLM/LT
 E238643	205-432 Step Plate, Differential Carrier Bearing TKIT-1999-F/FLM/LT
	205-D012 (D80L-630-1) Step Plate
	205-D044 (D81T-4221-A) Installer, Differential Carrier Bearing
	308-052 (T77J-7025-B) Remover/Installer, Bearing Tube
	308-092 (T84T-7025-B) Removal Screw, Bearing Tube TKIT-1984-F TKIT-1984-FLM TKIT-1984-LM
Dial Indicator	
Wooden Block	
Vise	

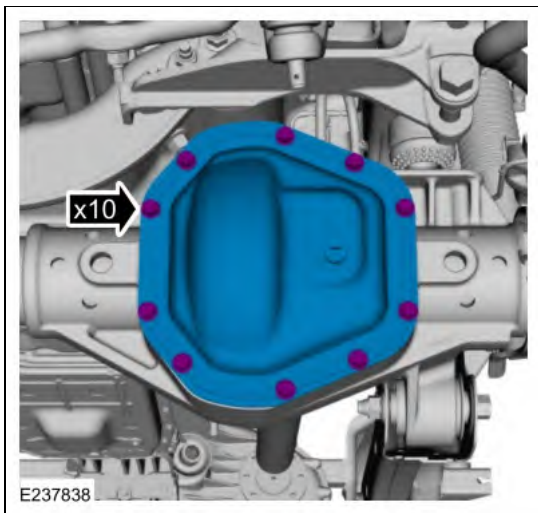
Materials

Name	Specification
Motorcraft® High Performance Engine RTV Silicone TA-357	WSE-M4G323-A6

Activation

- NOTE:** Be prepared to collect escaping fluid.

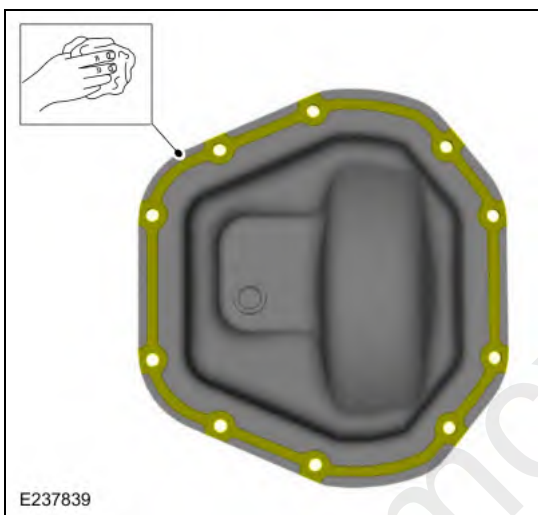
Remove the bolts and the differential housing cover. Drain the lubricant.



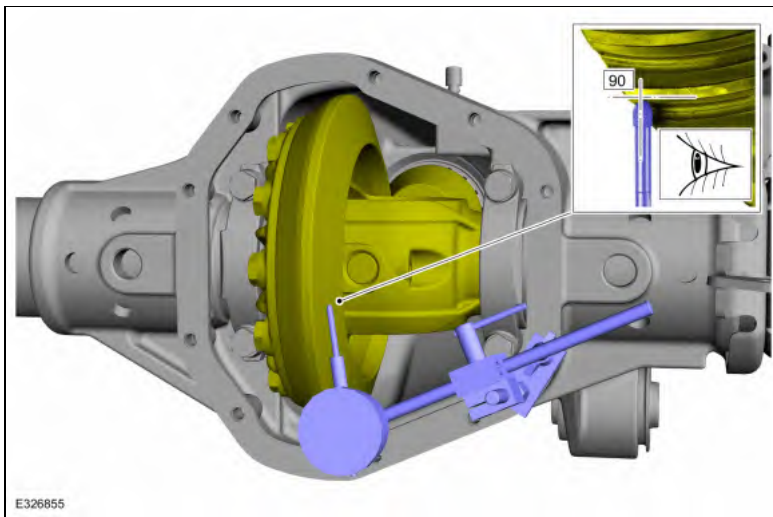
2. **NOTE:** Remove all of the silicone gasket and make sure the surfaces are free of oil before applying the new silicone gasket.

Clean the gasket material from the differential housing and the differential housing cover.

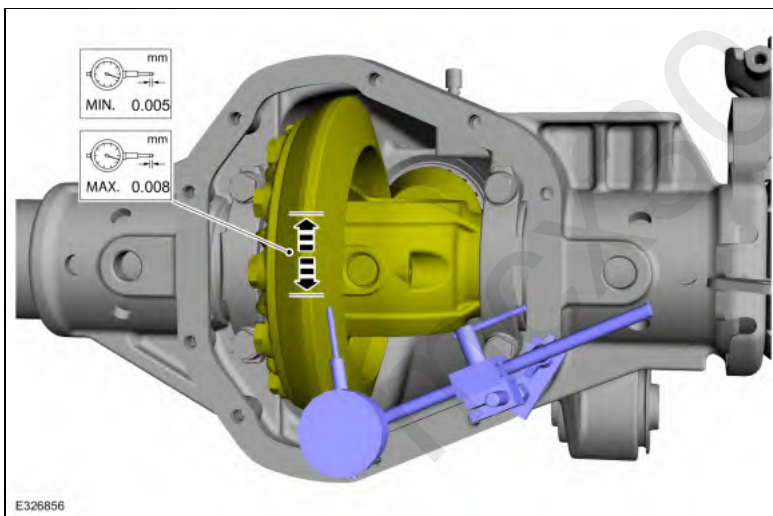
Refer to: RTV Sealing Surface Cleaning and Preparation (303-00 Engine System - General Information, General Procedures).



3. Install the dial indicator gauge with holding fixture, with the dial indicator at around 90 degree angle from the ring gear tooth.
Use the General Equipment: Dial Indicator

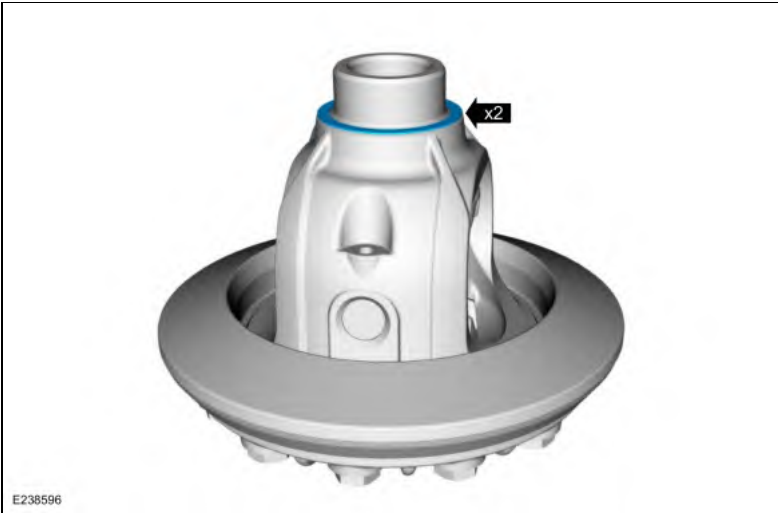


4. Using the dial indicator check the ring gear backslash. Rotate the ring gear and carrier back and forth through the free play only.
Refer to: Specifications (205-03) .
Use the General Equipment: Dial Indicator

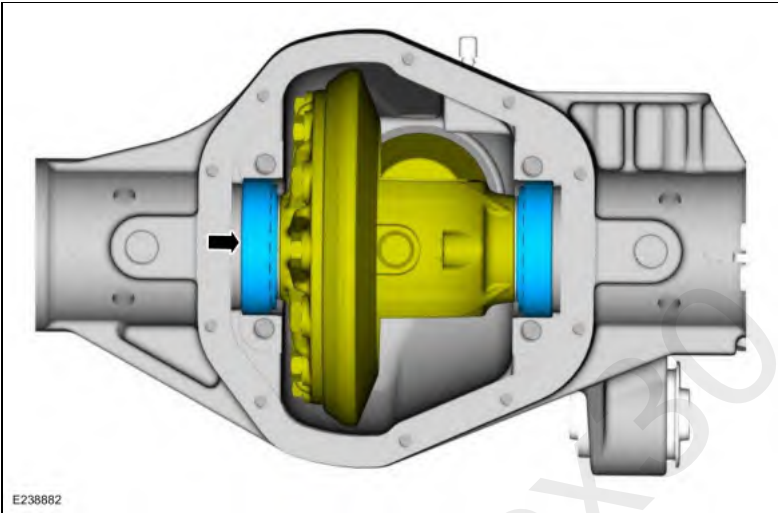


- 5.
- To correct for high or low backlash, increase the thickness of one differential bearing shim and decrease the thickness of the other differential bearing shim by the same amount.
 - If a zero backlash condition had occurred, add 0.50 mm (0.020 in) to the RH side shim and subtract 0.50 mm (0.020 in) from the LH side shim to allow a backlash indication. Recheck backlash.
 - Using the backlash chart, determine the thickness of differential shim needed:
Refer to: Specifications (205-03) .
6. If a backlash correction is to be made, remove the axle shafts.
Refer to: Axle Shaft (205-03 Front Drive Axle/Differential, Removal and Installation).
7. **NOTE:** Prior to removal, note the positioning of the stamped mating letters on the bearing caps and the differential housing for correct reassembly.
Remove the bolts and the bearing caps.

10. **NOTE:** Wire the shims together and mark from which side they were removed.
- Remove the differential bearing shims.



11. Position the differential case with the Dummy Bearing Set into the differential housing.



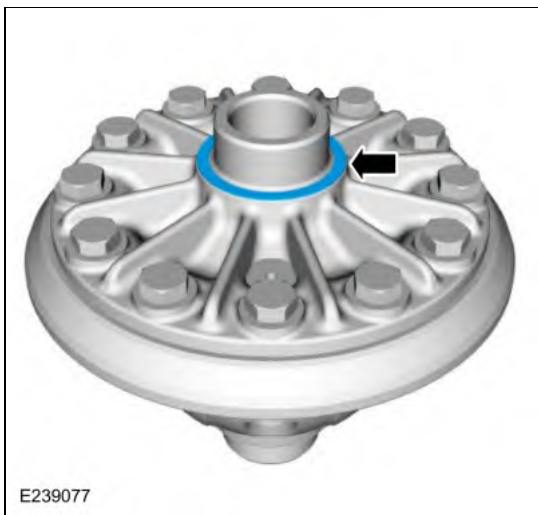
12. **NOTICE:** It is necessary to loosely install the bearing caps and bolts to hold the differential in place.
- NOTE:** Make sure that the installation marks are aligned.
- Loosely install the differential bearing caps.



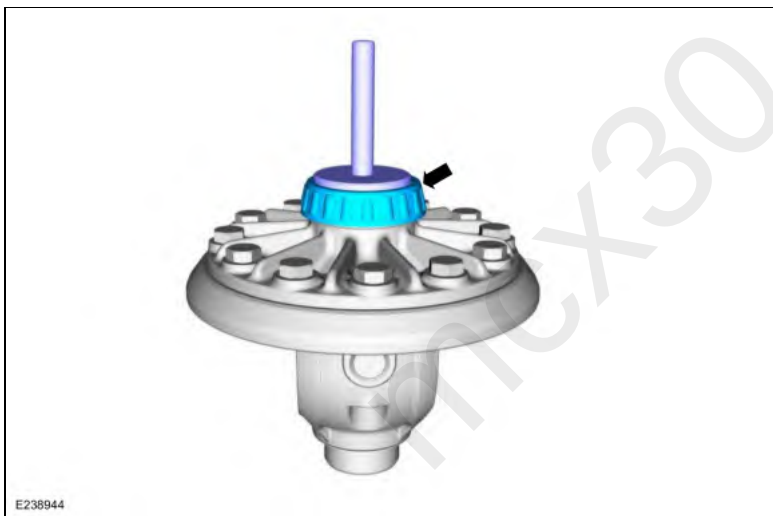
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- The diagram illustrates a vertical stack of six colored rectangles, each with a black border. From top to bottom, the colors are cyan, green, brown, yellow, purple, and light blue. To the left of this stack is a small, empty white rectangular box with a black border.

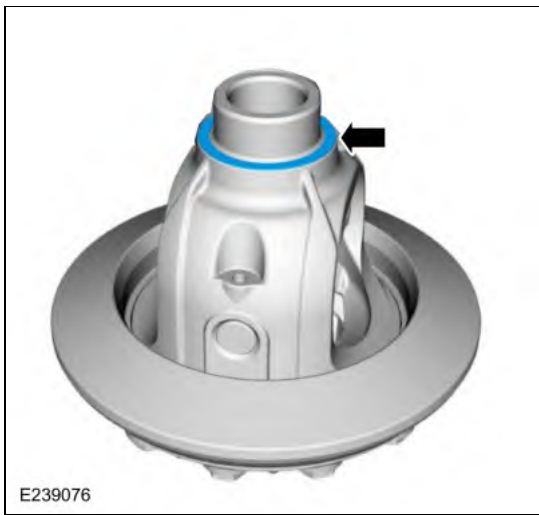
15. Place the required thickness of differential bearing shims on the ring gear side of the differential case. Refer to the measurement recorded, as the shim thickness required for the ring gear side of the differential case.
 - For example, a reading of 1.14 mm (0.045 in), requires that 1.14 mm (0.045 in) shims be placed on the ring gear side of the differential case. For available differential bearing shims.
Refer to: Specifications (205-03) .



16. Using a special tool, install the differential bearing.
Use Special Service Tool: 205-D044 (D81T-4221-A) Installer, Differential Carrier Bearing.

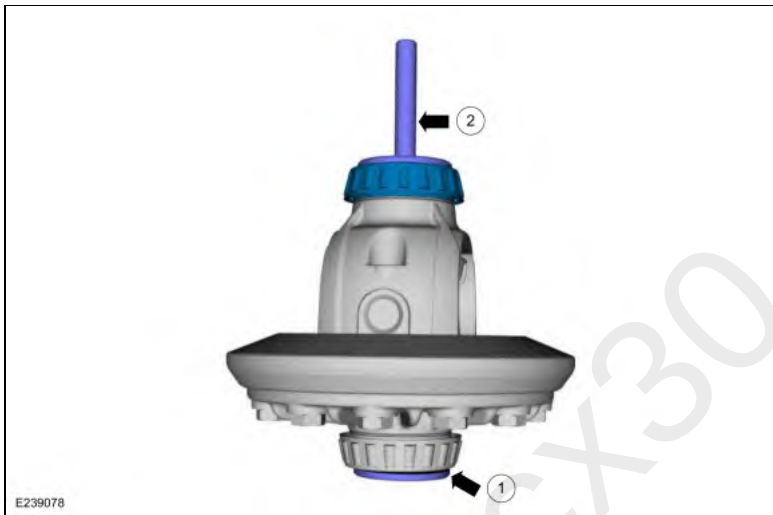


17. Determine the total thickness of differential bearing shims to install under the differential bearing on the drive pinion side of the differential case.
- Subtract the measurement recorded, as the shim thickness required for the ring gear side of the differential case, from the total case end play measurement taken at the beginning of the assembly procedure. Then, add 0.38 mm (0.015 in) to the total. This is the total amount of differential bearing shims to install under the differential bearing on the drive pinion side of the differential case.
18. Place the amount of differential bearing shims, as determined by the calculation made in the previous step, on the drive pinion side of the differential case.

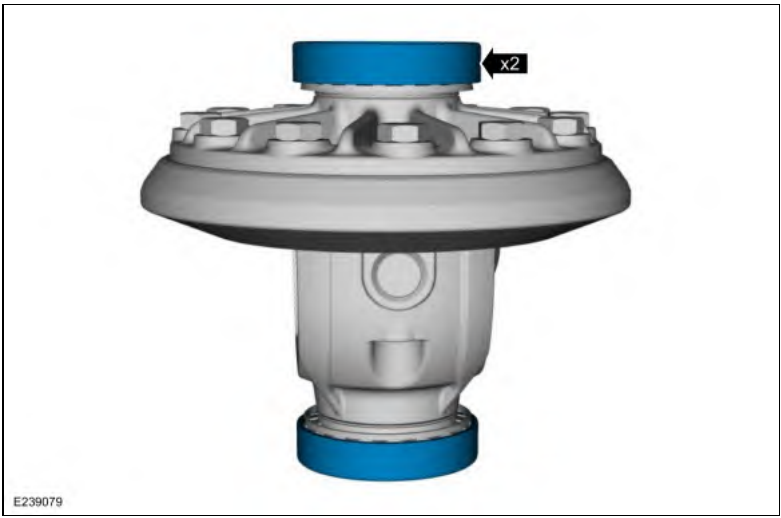


19. Using the special tools, install the differential bearing.

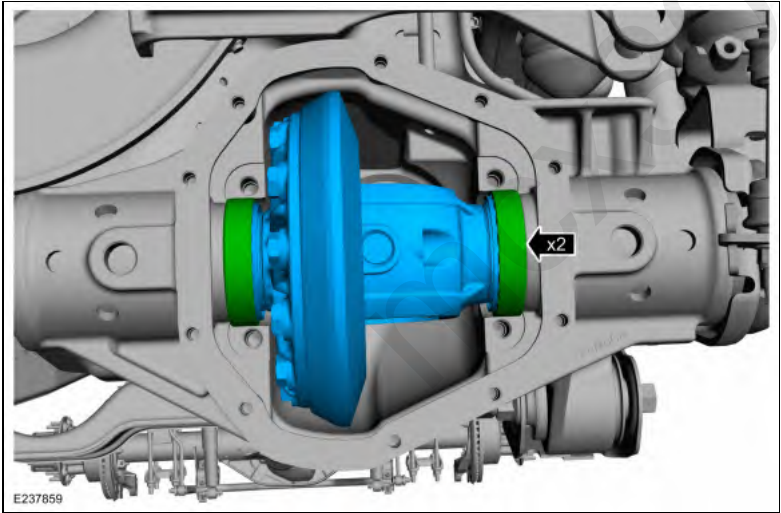
- Place the Step Plate under the bearing to protect it during the bearing installation.
Use Special Service Tool: 205-D012 (D80L-630-1) Step Plate.
- Using a special tool, install the bearing.
Use Special Service Tool: 205-D044 (D81T-4221-A) Installer, Differential Carrier Bearing.



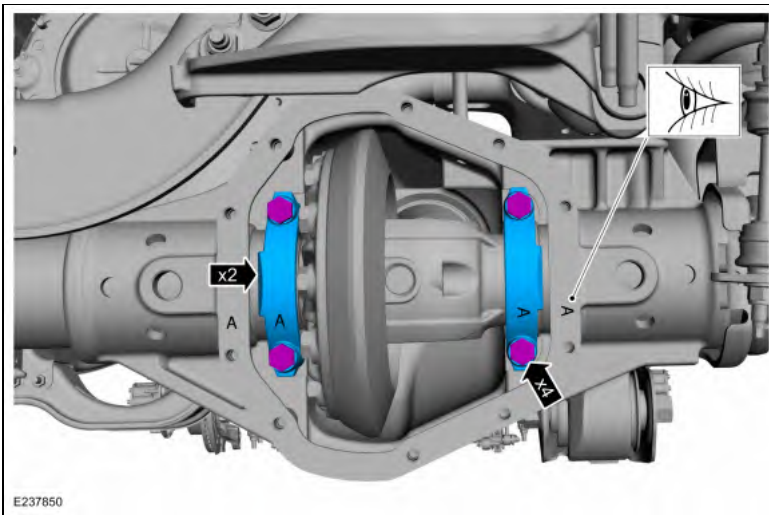
20. Position the differential bearing cups on the bearings.



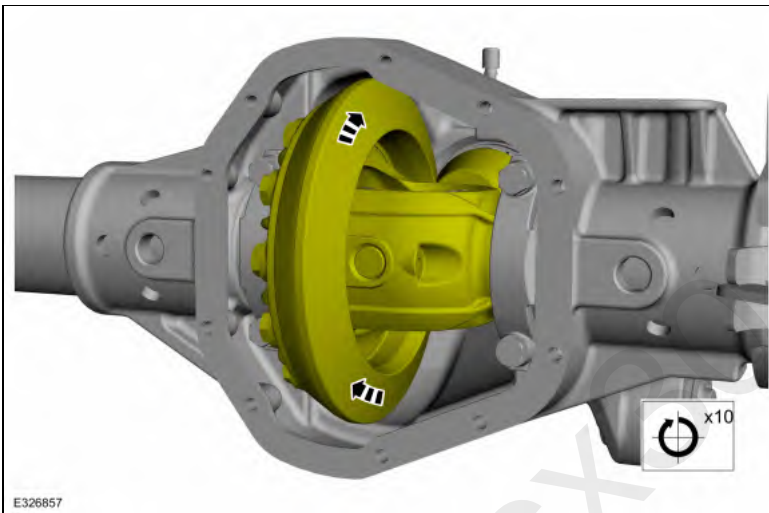
21. Position the differential carrier and bearing races along with shims in the axle housing.



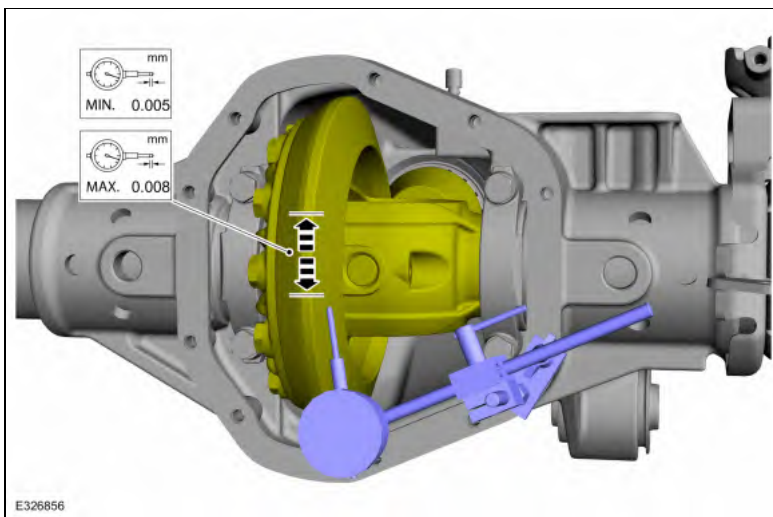
22. Install the bearing caps and the bolts.
Torque: 80 lb.ft (108 Nm)



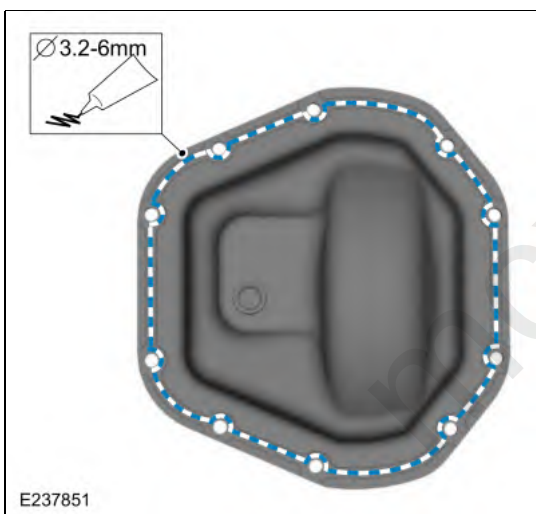
23. Rotate the differential several times, to assure the differential assembly rotates freely.



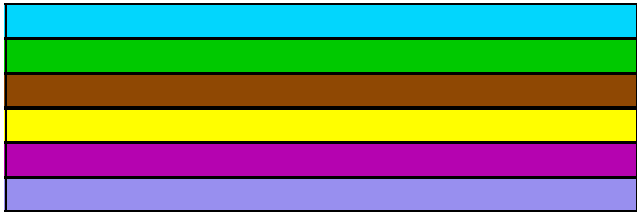
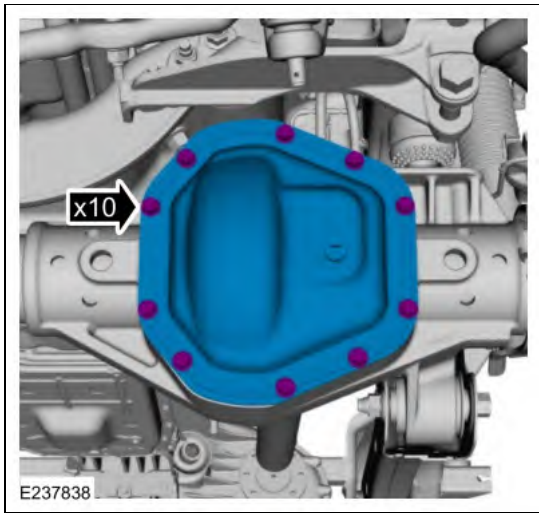
24. Using the dial indicator gauge with holding fixture, do a final check of the ring gear backlash. Measure the backlash at 3 equally spaced points.
- The backlash must be within the specifications and cannot vary more than 0.05 mm (0.002 in) between points checked.
 - Make the necessary corrections by moving shims from one side of the differential case to the other, until the correct backlash adjustment is achieved.
 - Correct for low backlash by moving the ring gear away from the pinion.
 - Correct for high backlash by moving the ring gear toward the pinion.
- Use the General Equipment: Dial Indicator



25. Verify an acceptable ring gear tooth pattern check.
Refer to: Front Drive Axle (205-03 Front Drive Axle/Differential, Diagnosis and Testing).
26. Apply a new continuous bead of sealant to the differential housing cover as shown.
Material: Motorcraft® High Performance Engine RTV Silicone / TA-357 (WSE-M4G323-A6)



27. Install the differential cover and differential cover bolts.
Torque: 45 lb.ft (61 Nm)



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