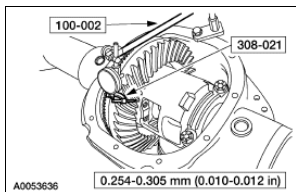


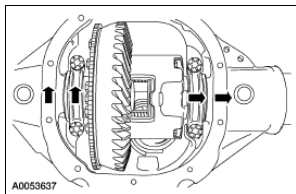
4. Using the special tool, measure and record the differential ring gear backlash between teeth at four places around the ring gear.
 - Remove the special tool.



5. **⚠ CAUTION:** Mark the position of the bearing caps as the arrows may not be visible. The bearing caps must be installed in their identical locations and positions.

Loosen the differential case.

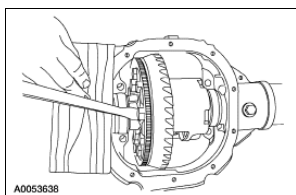
1. Remove the four bearing cap bolts.
2. Remove the two bearing caps.



6. **⚠ WARNING:** Do not allow the differential case to fall.

⚠ CAUTION: Place a wood block between the pry bar and the rear axle housing to protect the machined surface from damage.

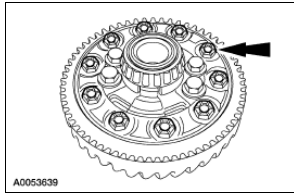
Use pry bars and wood blocks to remove the differential case from the axle housing.



7. If the differential ring gear backlash measurement between teeth, taken at the beginning of this procedure, did not exceed the specification, proceed to Final disassembly in this procedure. If the differential ring gear backlash measurement between teeth, taken at the beginning of this procedure, exceeded the specification, the cause may be a warped differential ring gear, a damaged differential case, or loss of differential bearing preload. Proceed to Excessive differential ring gear backlash between teeth in this procedure to verify the cause of the excessive backlash.

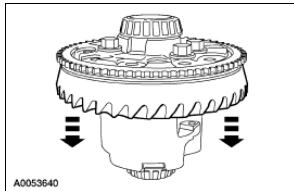
Excessive differential ring gear backlash between teeth

8. Remove the bolts.

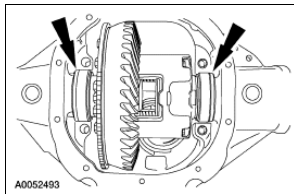


9. **⚠ CAUTION: Do not damage the bolt hole threads.**

Insert a punch in the bolt holes and drive off the differential ring gear.

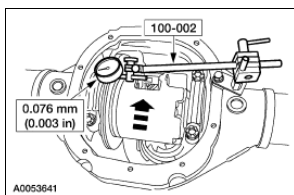


10. Install the differential case, differential bearings, cups and shims in their original location. Rotate the differential case to seat the differential bearings.



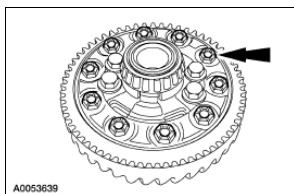
11. Install the special tool. Measure the differential case flange runout.

- If the runout does not exceed the specification, the cause of the original excessive backlash between teeth concern is the differential ring gear. Remove the differential case. Discard the differential ring gear and the drive pinion gear. Proceed to Final disassembly in this procedure.
- If the runout exceeds the specification, the differential ring gear is true and the concern is due to either differential case/differential bearing damage. Remove the differential case. Discard the differential bearings/differential case. Proceed to Final disassembly in this procedure.
 - ◆ Remove the special tool.



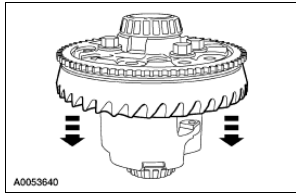
Final disassembly

12. If not done previously, remove the bolts.

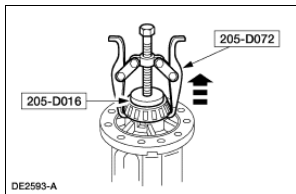


13. **⚠ CAUTION: Do not damage the bolt hole threads.**

If not done previously, insert a punch in the bolt holes and drive off the differential ring gear.



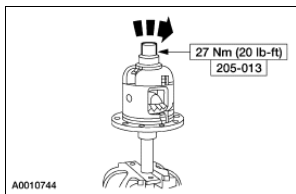
14. Using the special tools, remove the differential bearing.
- Repeat for the other side.



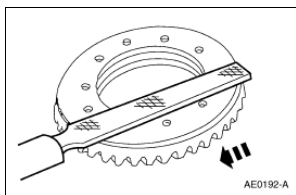
15. The TORSEN® differential is a non-serviceable component and should not be disassembled. If the differential is damaged, a new differential must be installed.

Initial assembly

16. Mount the differential case and the special tool in a vise. Using the special tool, check the torque necessary to rotate one differential side gear.



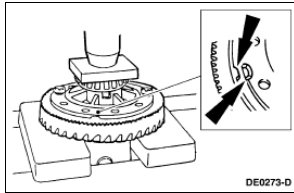
17. Draw-file the differential ring gear mounting surface to remove any nicks or burrs.



18. **⚠ CAUTION:** If installing a new anti-lock speed sensor ring, align the notch on the case flange with the tab on the anti-lock speed sensor ring.

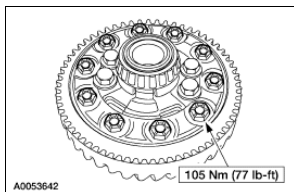
Install the differential ring gear.

- Place the differential ring gear and the anti-lock speed sensor ring on the differential case.
- Hand start two bolts to align the holes in the differential ring gear and the differential case.
- Place the differential case and differential ring gear onto the press bed blocks with the differential ring gear teeth facing downward.
- Press the differential ring gear into place.

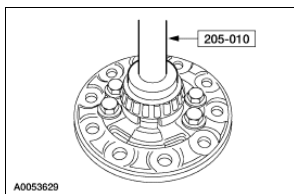


19. **NOTE:** Apply sealant to all the bolt threads.

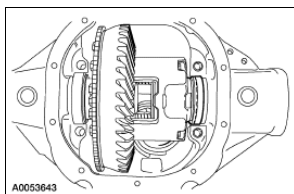
Install the remaining bolts.



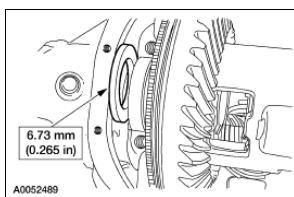
20. Press the left and right differential bearing on the differential case.



21. Place the differential assembly in the differential housing.



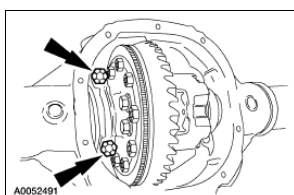
22. Install a differential bearing shim of the size shown on the left side of the differential.



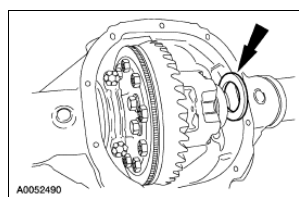
23. **⚠ CAUTION:** Always install the bearing caps in their identical locations and positions.

NOTE: Apply pressure toward the left side of the differential to make sure the left differential bearing cup seats correctly.

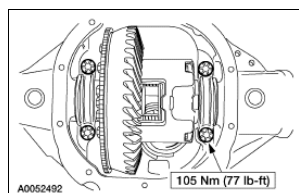
Install the left differential bearing cap and loosely install the bolts.



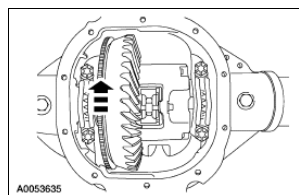
24. Install progressively thicker differential bearing shims on the right side until the thickest shim possible is installed by hand.



25. Install the right side bearing cap and tighten the left and right side bolts to specification.

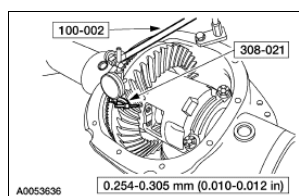


26. Rotate the differential case to make sure the differential turns freely.



Measuring backlash

27. Using the special tools, measure the differential ring gear backlash at four equally spaced points.
- If the backlash is not within the specification, refer to Backlash not within specification in this procedure.
 - If a zero backlash condition occurs, refer to Zero backlash in this procedure.
 - If the backlash is within specification, refer to Backlash within specification in this procedure.



Backlash not within specifications

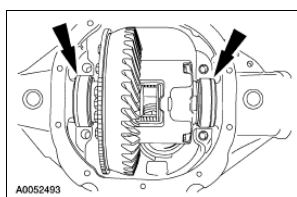
28. To correct for high or low backlash, increase the thickness of one differential bearing shim and decrease the thickness of the other differential bearing shim by the same amount. Refer to the following tables when adjusting the backlash. When the backlash is within specifications, proceed to Final assembly in this procedure.

Backlash Change Required		Thickness Change Required	
mm	in	mm	in
0.025	0.001	0.050	0.002
0.050	0.002	0.050	0.002

0.076	0.003	0.101	0.004
0.101	0.004	0.152	0.006
0.127	0.005	0.152	0.006
0.152	0.006	0.203	0.008
0.177	0.007	0.254	0.010
0.203	0.008	0.254	0.010
0.228	0.009	0.304	0.012
0.254	0.010	0.355	0.014
0.279	0.011	0.355	0.014
0.304	0.012	0.406	0.016
0.330	0.013	0.457	0.018
0.335	0.014	0.457	0.018
0.381	0.015	0.508	0.020

Zero backlash

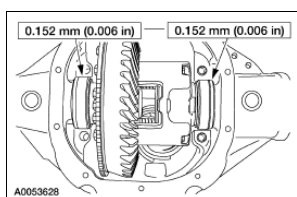
29. If a zero backlash condition occurs, add 0.51 mm (0.020 in) to the RH side and subtract 0.51 mm (0.020 in) from the LH side to allow the backlash indication. Measure the backlash. Refer to Measuring backlash in this procedure.



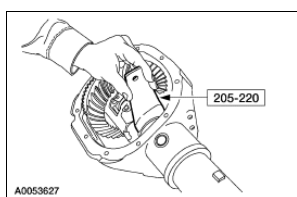
Backlash within specification

30. Remove the bolts and bearing caps.

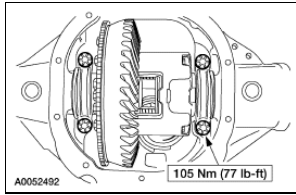
31. To establish differential bearing preload, increase both the left and right differential bearing shim sizes by the specification shown.



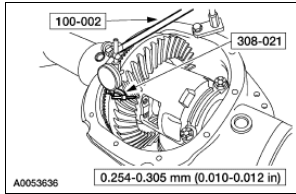
32. Using the special tool, fully seat the differential bearing shims. Make sure the assembly rotates freely.



33. Install the bearing caps and bolts.



34. Using the special tools, recheck the backlash.



35. Install the axle shafts. For additional information, refer to axle shafts in this section.

Axle Housing

Material

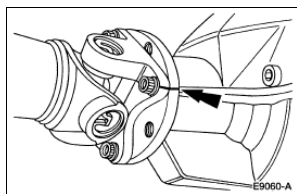
Item	Specification
Threadlock and Sealer EOAZ-19554-AA	WSK-M2G351-A5 (type II)

Removal and Installation

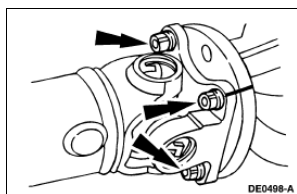
1. **⚠ CAUTION: Reinstall the differential thrust plate and the bolt in the differential case after removing the axle shafts.**

Remove the axle shafts. For additional information, refer to [Axle Shaft](#) in this section.

2. Index-mark the driveshaft flange and pinion flange for correct alignment during installation.



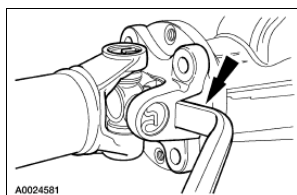
3. Remove the four bolts.



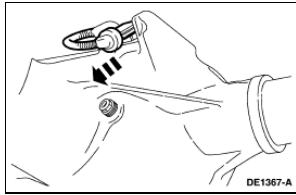
4. **⚠ CAUTION: The driveshaft flange fits tightly on the rear axle pinion flange pilot. Never hammer on the driveshaft or any of its components to disconnect the driveshaft flange from the pinion flange. Pry only in the area shown with a suitable tool to disconnect the driveshaft flange from the pinion flange.**

Using a suitable tool as shown, disconnect the driveshaft flange from the rear axle pinion flange.

- Position the driveshaft aside.

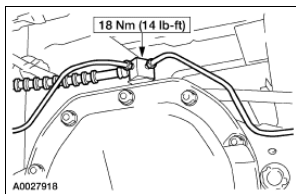


5. Disconnect the rear brake anti-lock sensor electrical connector from the sensor.
 - Separate the wiring harness from the clips, and position the harness aside.



6. Disconnect the vent hose from the axle.

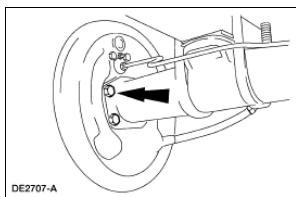
7. Separate the brake lines from the retaining clips on the axle.



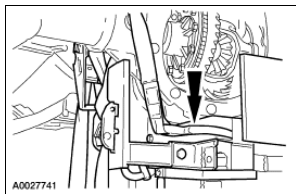
8. **NOTE:** Do not disconnect the brake lines from the brake hose junction block.

Disconnect the brake hose junction block from the differential housing (4141).

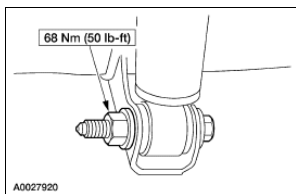
9. Disconnect the rear brake backing plates from the axle. Wire the assemblies out of the way.



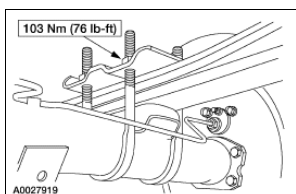
10. Position a suitable jack under the differential housing and strap it securely in place.



11. Remove the nuts and the bolts retaining the shock absorbers to the axle.



12. Remove the nuts, the rear axle U-bolts and the rear spring plates.



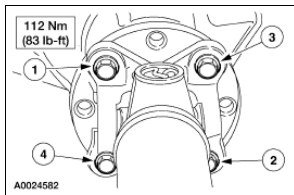
13. Lower the rear axle from the vehicle.

14. **⚠ CAUTION:** If new bolts to retain the driveshaft to the axle are not available, coat the threads of the original bolts with threadlock.

⚠ CAUTION: The driveshaft flange fits tightly on the rear axle pinion flange pilot. To make sure that the driveshaft flange seats squarely on the pinion flange, tighten the bolts evenly in a cross pattern as shown.


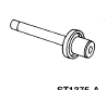

To install, reverse the removal procedure.

- Refer to [Section 206-02](#) for brake backing plate retainer tightening specifications.



Differential Case and Ring Gear

Special Tool(s)

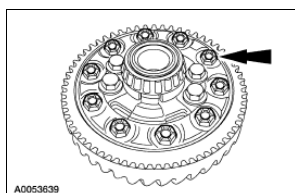
	2-Jaw Puller 205-D072 (D97L-4221-A) or equivalent
	Installer, Differential Side Bearing 205-010 (T57L-4221-A2)
	Step Plate 205-D016 (D80L-630-5) or equivalent

Material

Item	Specification
SAE 75W-140 Synthetic Rear Axle Lubricant XY-75W140-QL	WSL-M2C192-A
Additive Friction Modifier XL-3	EST-M2C118-A
Threadlock and Sealer EOAZ-19554-AA or equivalent	WSK-M2G351-A5
Stud and Bearing Mount EOAZ-19554-BA or equivalent	WSK-M2G349-A1

Disassembly

1. Remove the differential case. For additional information, refer to Differential Case in this section.
2. Remove the 10 ring gear bolts.



3. **⚠ CAUTION:** Care should be taken not to damage the bolt hole threads.

Insert a punch in the bolt holes and drive the ring gear off.