

Ring Gear Backlash Adjustment

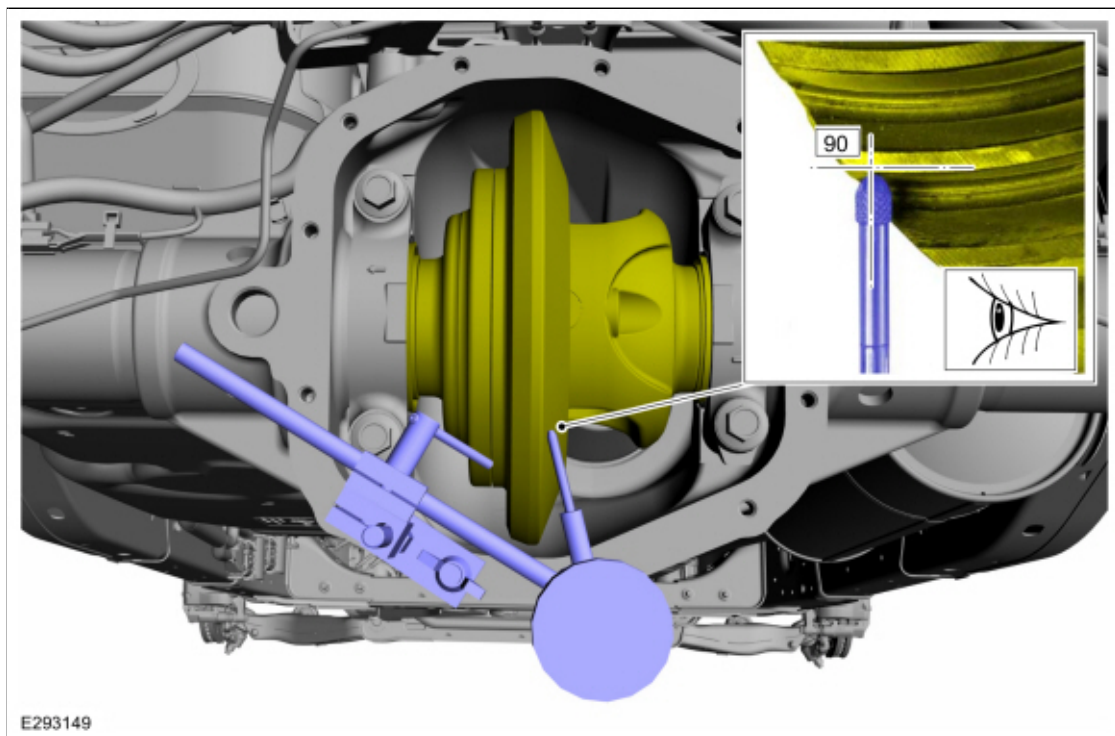
Special Tool(s) / General Equipment

 150988	205-220 Installer, Differential Shim TKIT-1985-FH
Dial Indicator	
Copper Hammer	

Adjustment

All vehicles

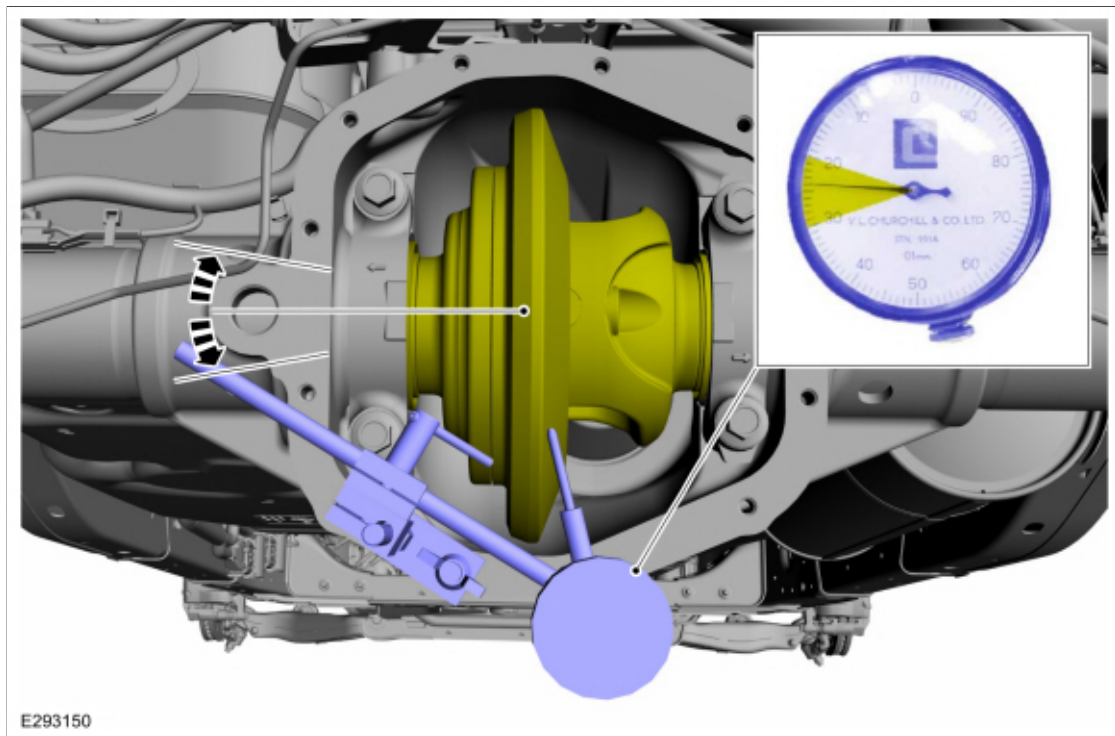
1. Remove the differential housing cover.
Refer to: [Differential Housing Cover](#) (205-02 Rear Drive Axle/Differential - Vehicles With: Dana M220, Removal and Installation).
2. Install the dial indicator gauge with holding fixture, with the dial indicator at a 90 degree angle from the ring gear tooth.
Use the General Equipment: Dial Indicator



3. Using the dial indicator check the ring gear backlash. Rotate the ring gear and carrier back and forth

through the free play only.

Refer to: [Specifications](#) (205-02 Rear Drive Axle/Differential - Vehicles With: Dana M220, Specifications).
Use the General Equipment: Dial Indicator



4.

- 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](#) (205-02 Rear Drive Axle/Differential - Vehicles With: Dana M220, Specifications).

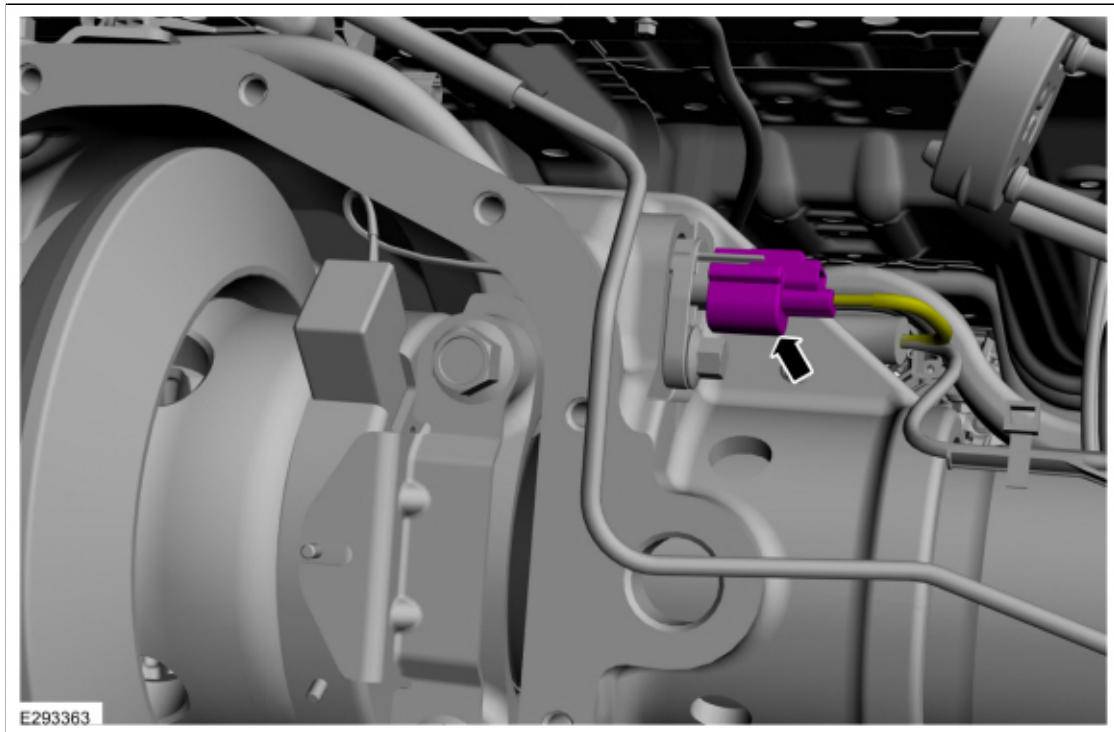
5. If a backlash correction is to be made, remove the axle shafts.

Refer to: [Axle Shaft](#) (205-02 Rear Drive Axle/Differential - Vehicles With: Dana M220, Removal and Installation).

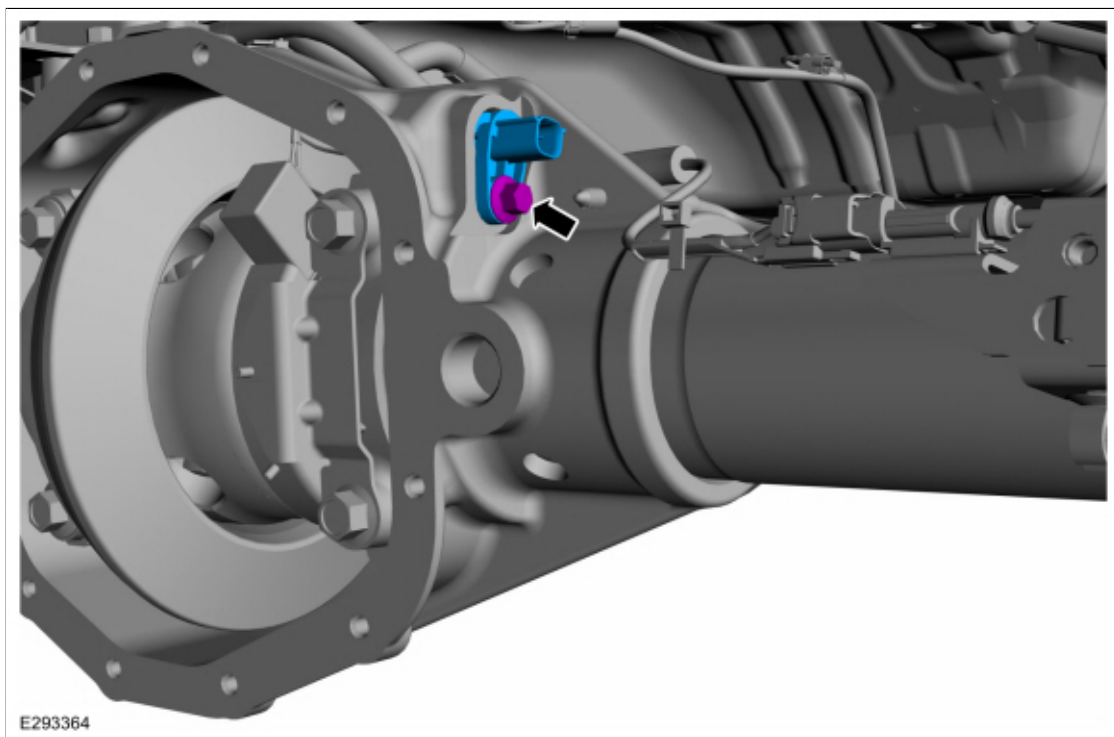
Vehicle equipped with

6.  **WARNING:** Do not pull on the wire harness to disconnect the connector or damage to the connector will occur.

Disconnect the ELD solenoid electrical connector.

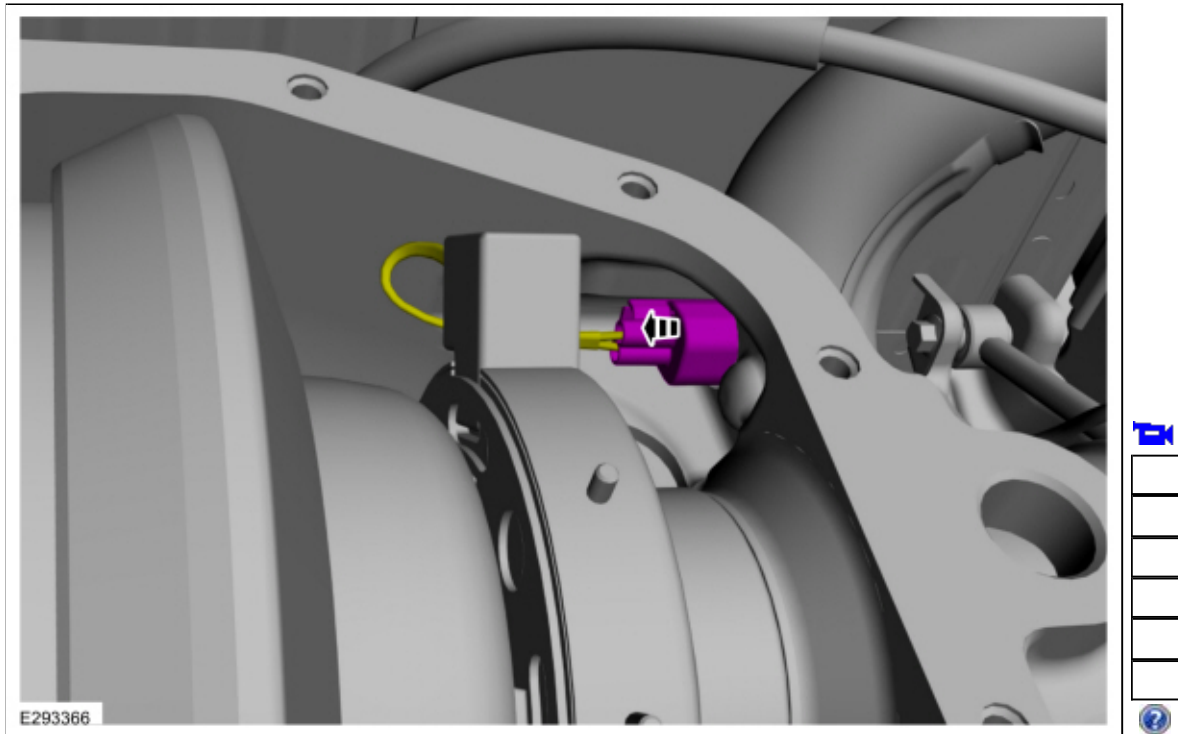


7. Remove the bolt and the ELD solenoid switch.



8. **NOTICE:** Take extra care not to damage the wiring harnesses.

Pull the ELD actuator solenoid connector inside the housing.



9.

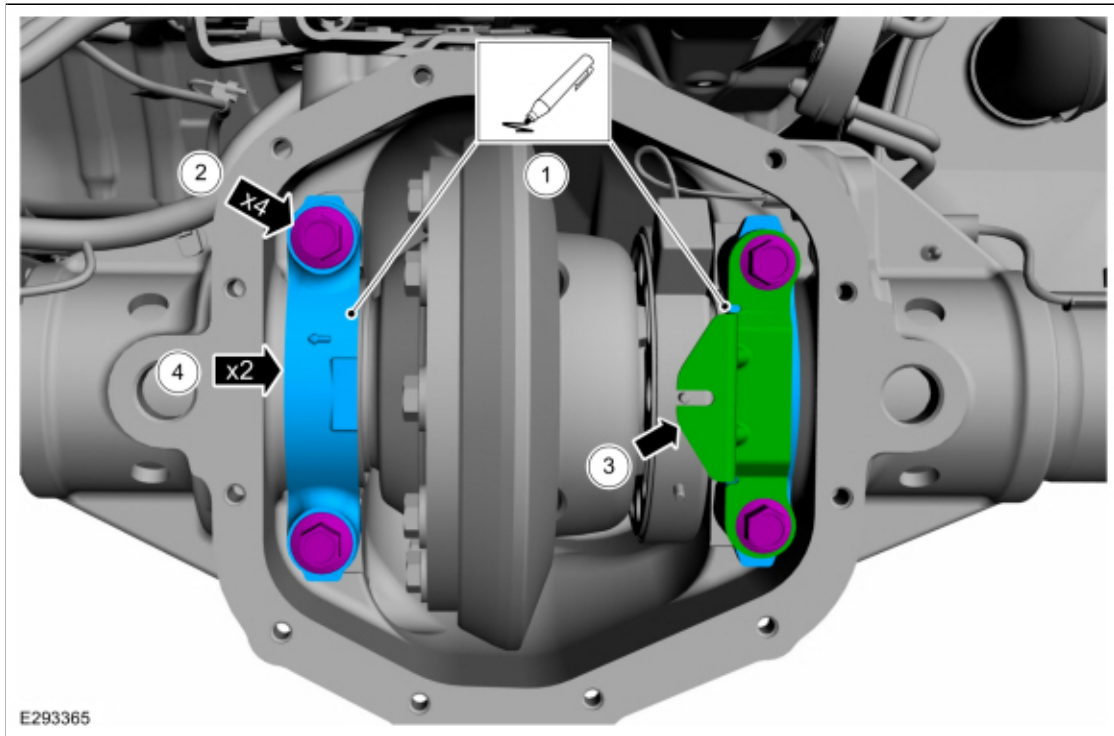
1. **NOTE:** The differential bearing caps and differential bearing cap bolts need to be installed in the same location as removed.

Index-mark the differential bearing caps.

2. Remove the differential bearing cap bolts.
3. **NOTE:** Make sure to note the orientation of the ELD clutch pack locking plate prior to removal.

Remove the ELD actuator clutch pack locking plate.

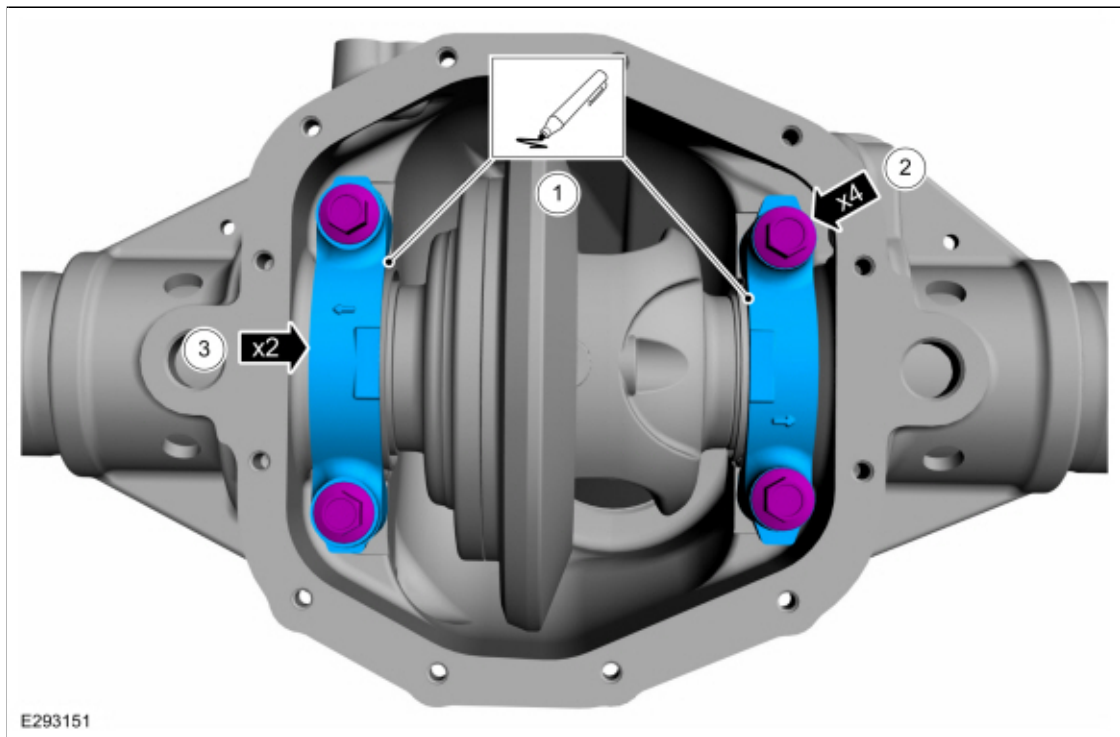
4. Remove the differential bearing caps.



Vehicles without

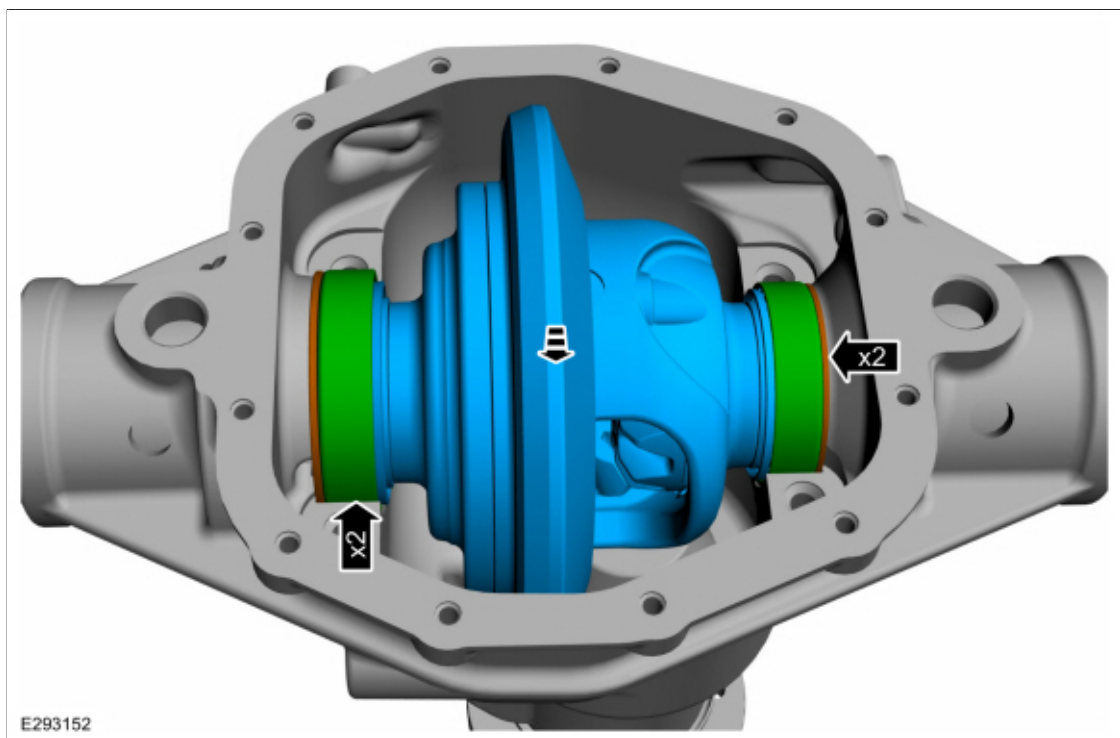
10. **NOTE:** *The differential bearing caps and differential bearing cap bolts need to be installed in the same location as removed.*
 1. Mark the differential bearing caps.
 2. Remove the differential bearing cap bolts.
 3. Remove the differential bearing caps.





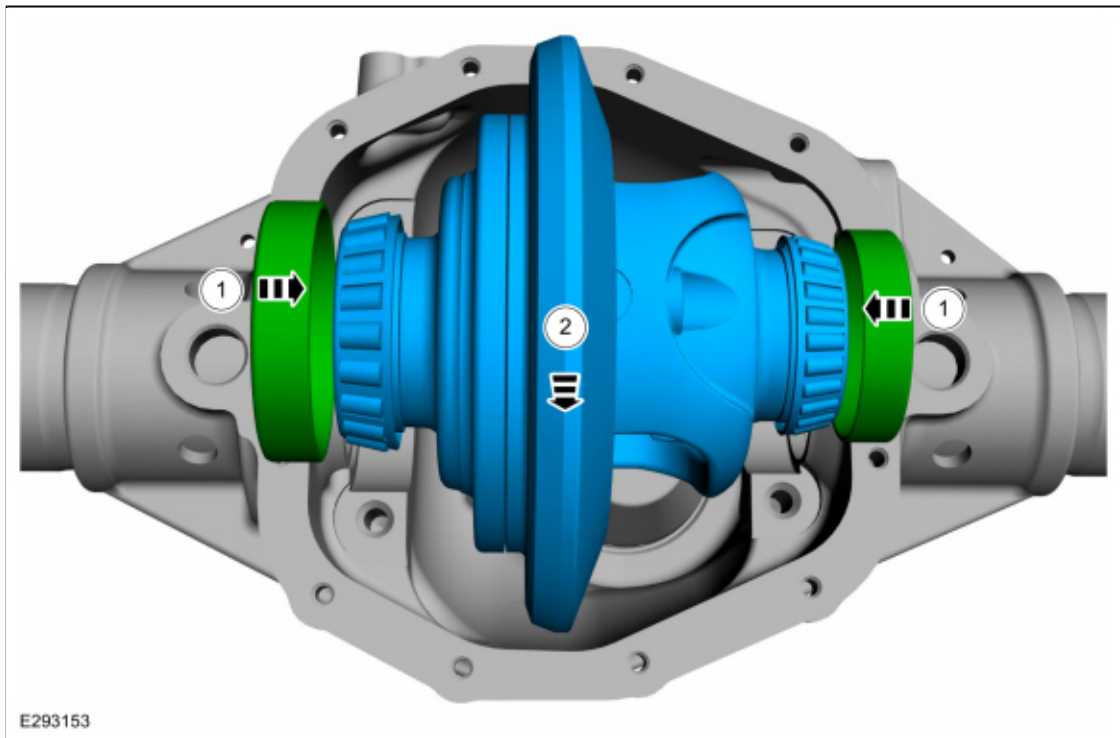
All vehicles

11. Remove the differential carrier, differential carrier bearing cups and the differential shims.



12. **NOTE:** Have the selected shims available at this time. It will be required to hold the differential carrier and the differential carrier bearing cups in until shims are installed.

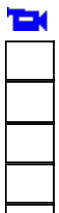
1. Install the differential carrier bearing cups.
2. Install the differential carrier assembly into housing.

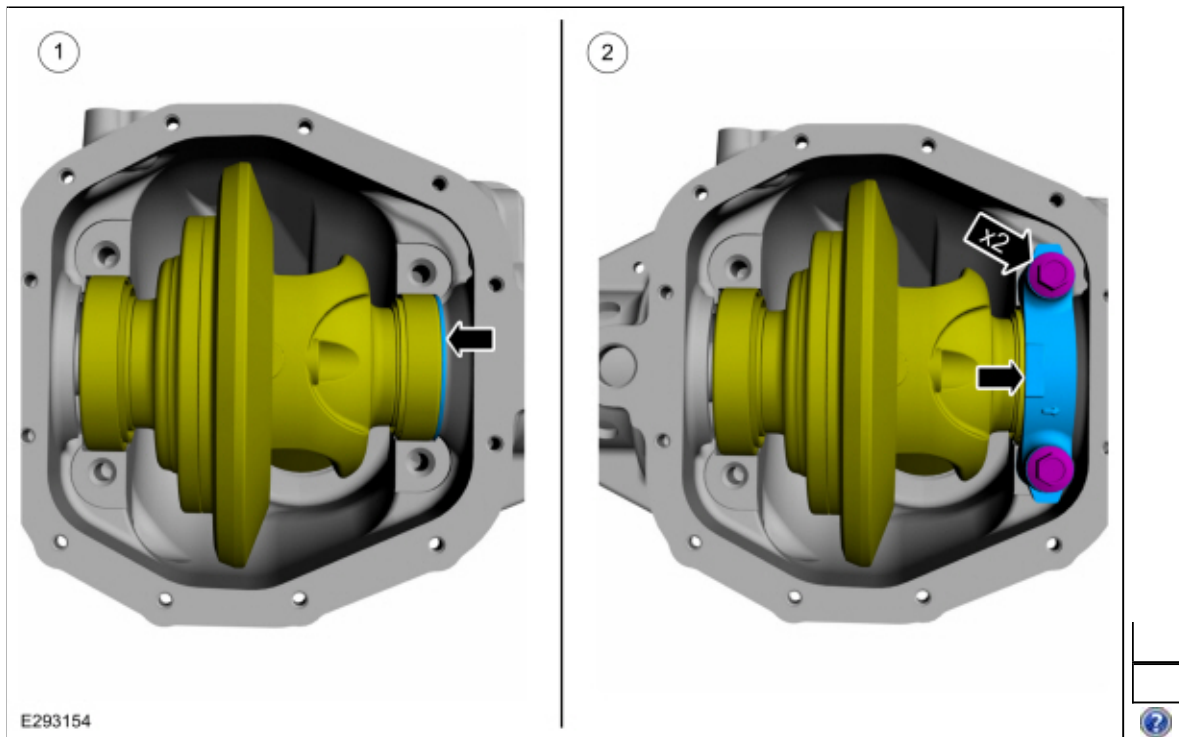


13. **NOTE:** *Differential bearing shims are to be installed with the chamfer facing outboard.*

- Install the RH selected ring gear back lash shim.
- Position the differential to the RH side of the differential housing.
- **NOTE:** *The differential bearing cap bolts should only be finger tight at this time.*

Install the RH differential bearing cap and the differential bearing cap bolts.

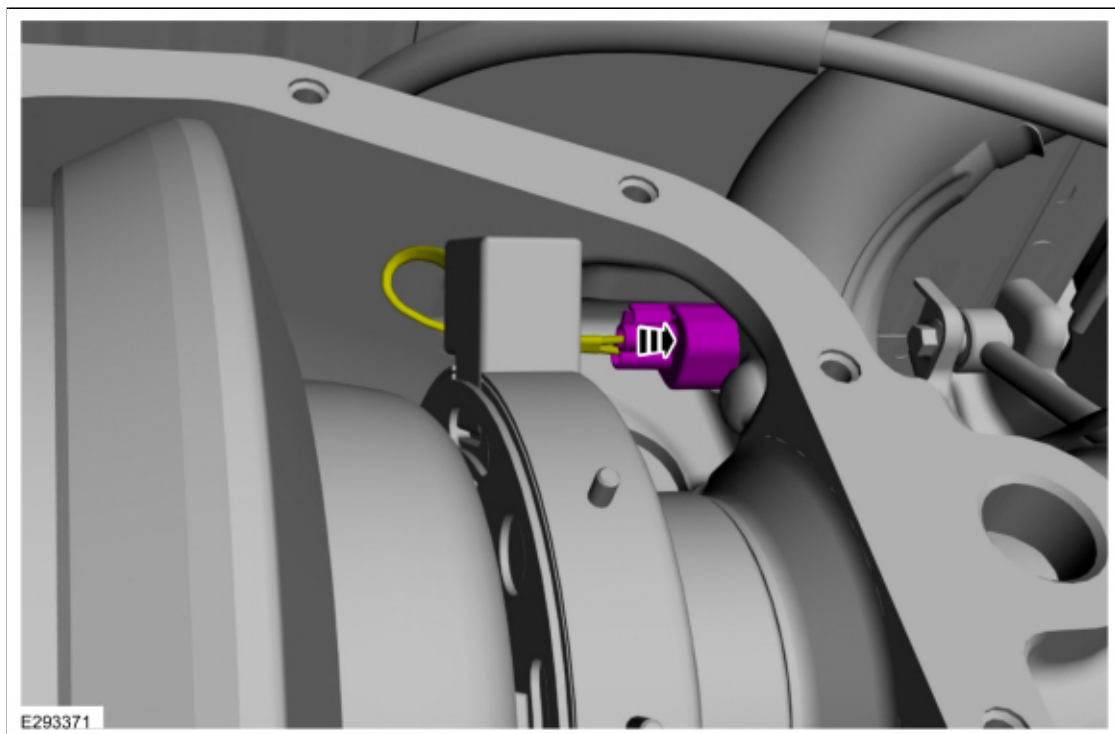




Vehicle equipped with

14. **NOTICE:** Take extra care not to damage the wiring harnesses.

Gently fit the ELD actuator solenoid electrical connector through the differential carrier assembly.



15. **NOTE:** The differential bearing caps and differential bearing cap bolts need to be installed in the same location as removed.

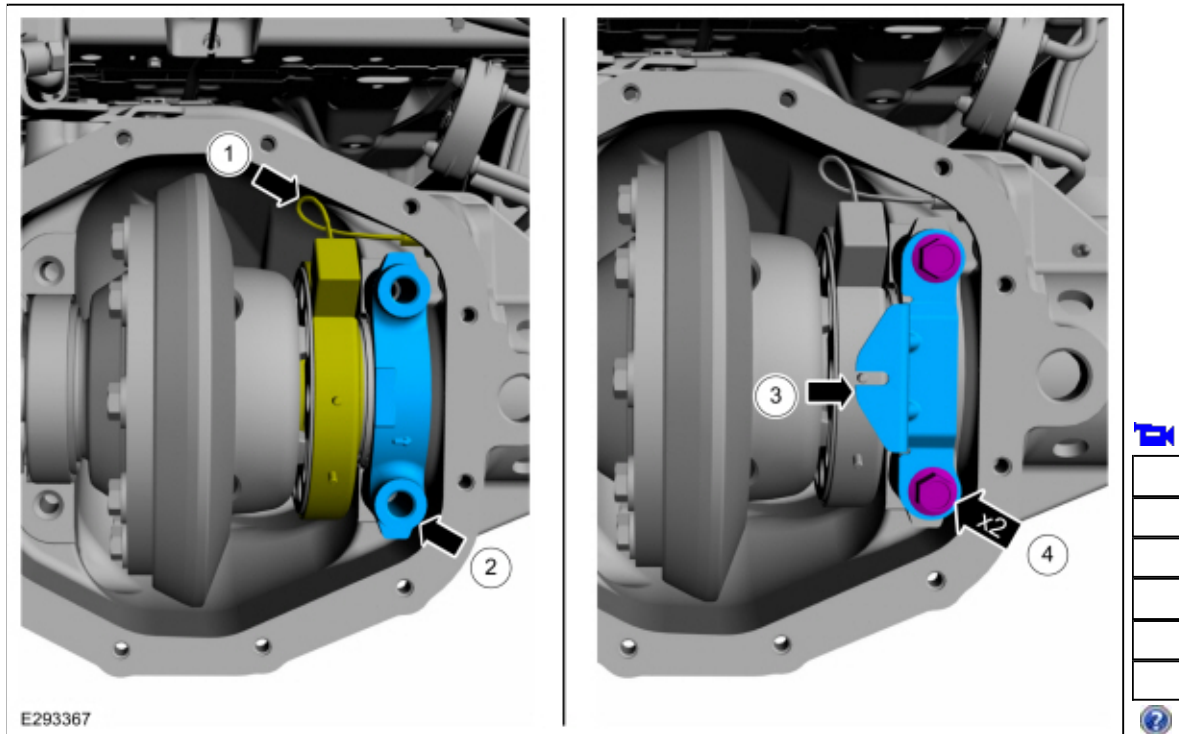
1. **NOTE:** Make sure that no part of the wiring harness is trapped.

Position the ELD actuator wiring harness correctly.

2. Position the RH differential bearing cap.
3. **NOTE:** The ELD clutch pack locking plate need to be installed in the same orientation as removed.

Position the ELD clutch pack locking plate.

4. Install the RH differential bearing cap bolts.



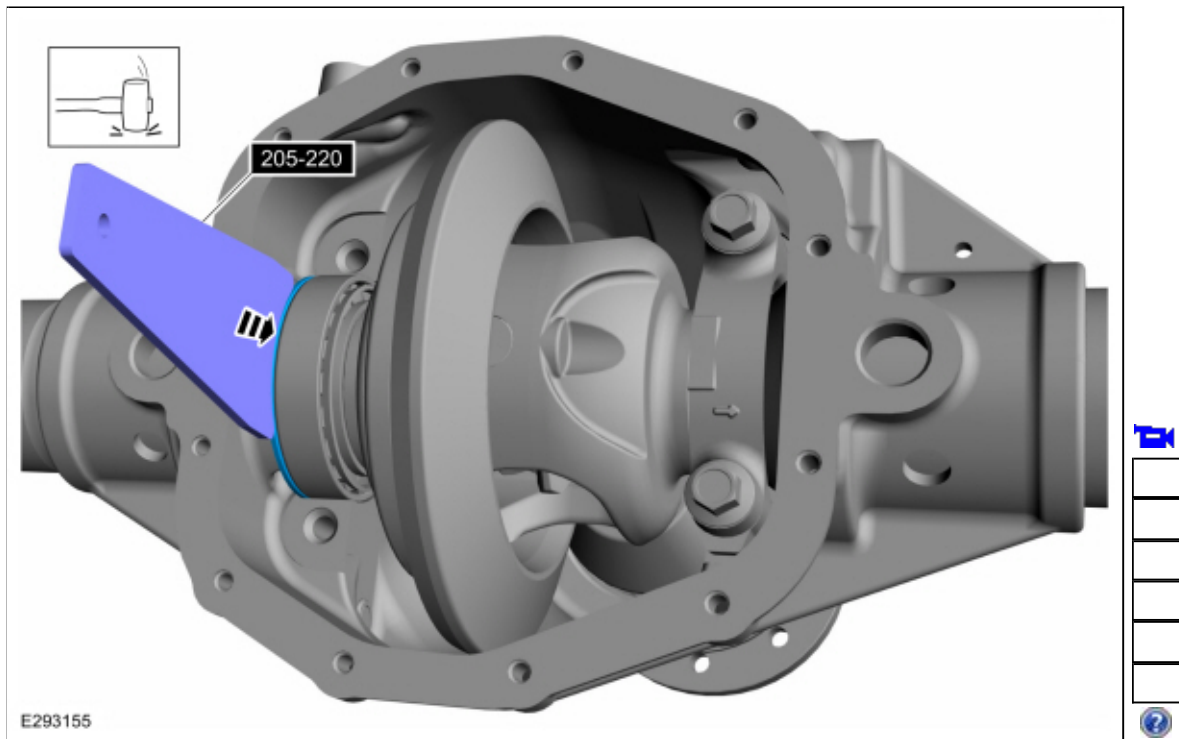
All vehicles

16. **NOTE:** Differential bearing shims are to be installed with the chamfer facing outboard.

Using the special tool and a soft face copper mallet, install the LH selected ring gear back lash shim.

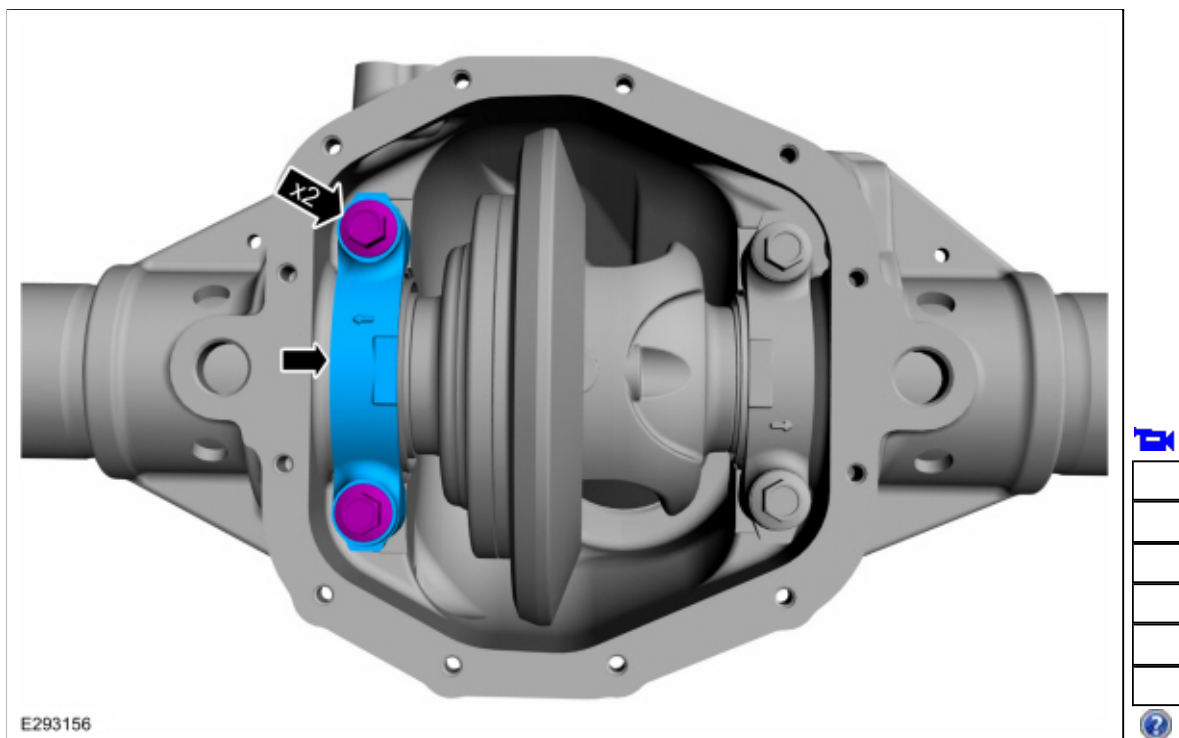
Use Special Service Tool: [205-220 Installer, Differential Shim](#).

Use the General Equipment: Copper Hammer

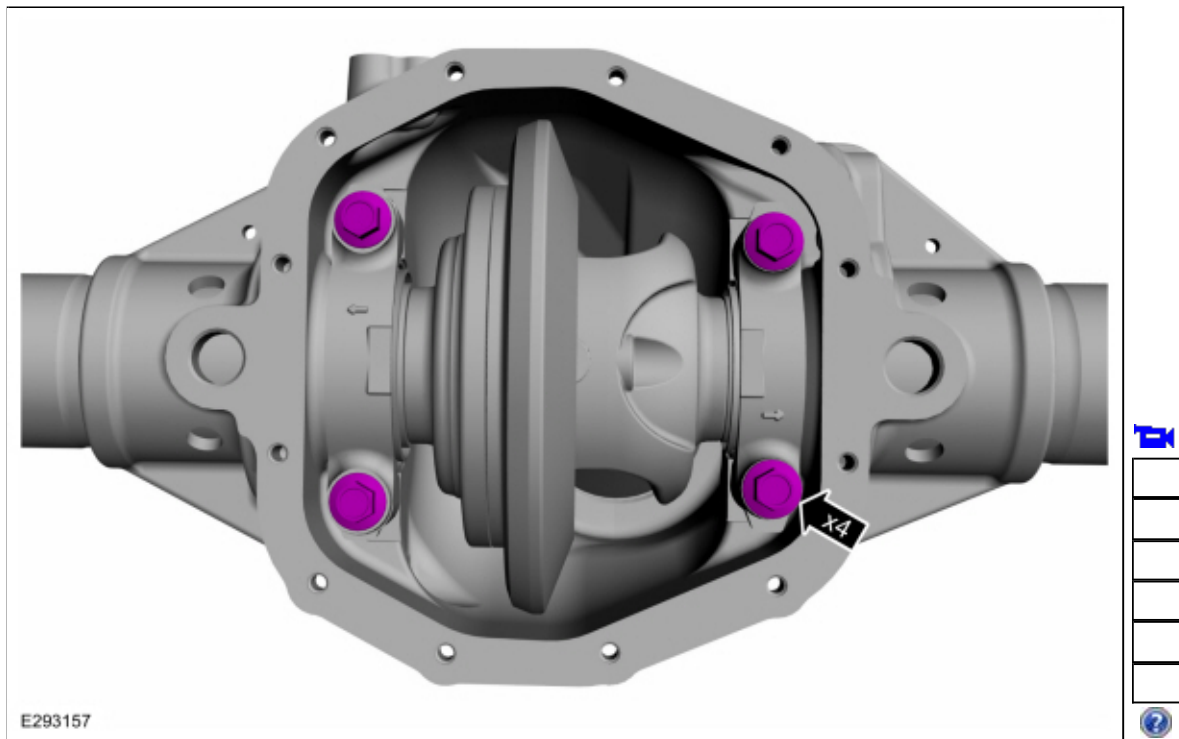


17. **NOTE:** The differential bearing cap bolts should only be finger tight at this time.

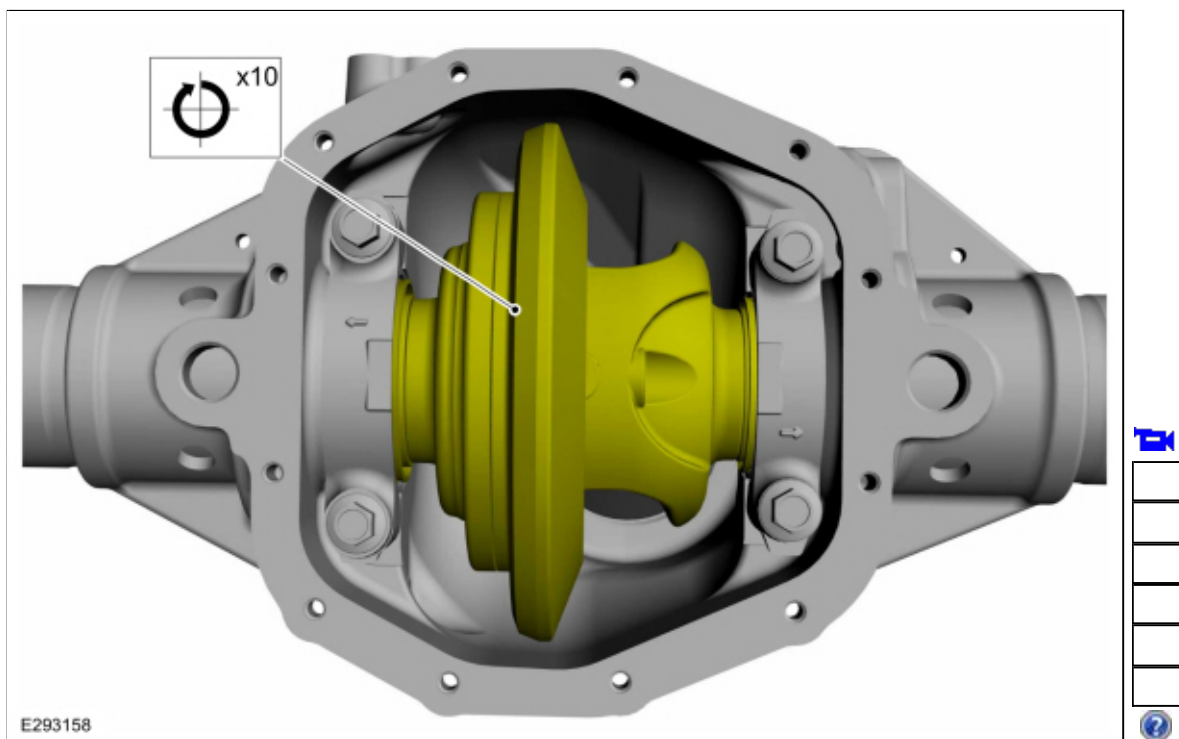
Install the LH differential bearing cap and the differential bearing cap bolts.



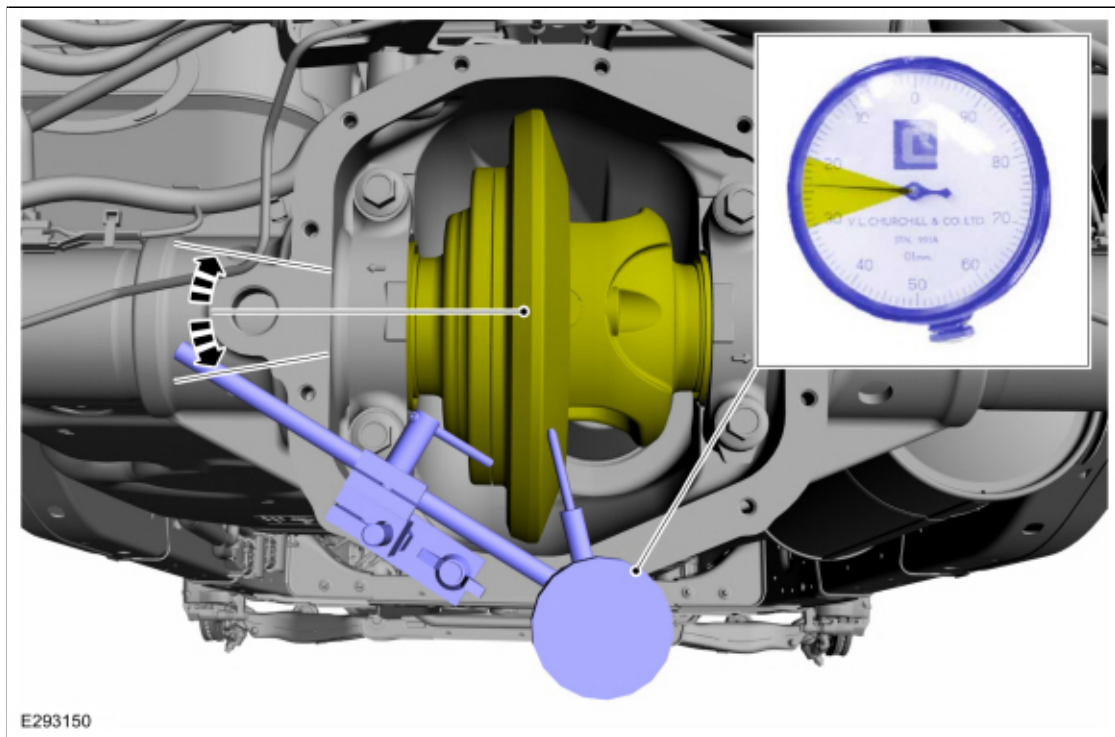
18. Tighten the differential bearing cap bolts.
Torque: 83 lb.ft (112 Nm)



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



20. Using the dial indicator gauge with holding fixture, do a final check of the ring gear backlash. Use the General Equipment: Dial Indicator



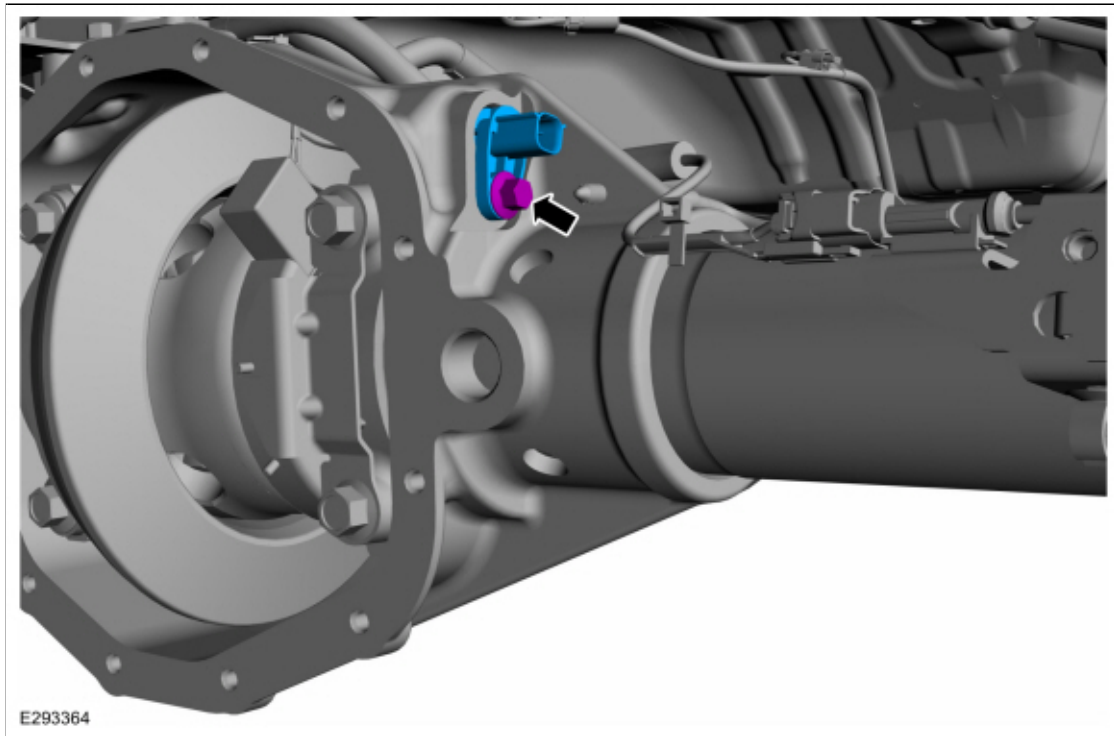
21. Apply marking compound and rotate the differential assembly 5 complete revolutions.
22. Verify an acceptable ring gear tooth pattern check.
Refer to: [Rear Drive Axle and Differential](#) (205-02 Rear Drive Axle/Differential - Vehicles With: Dana M220, Diagnosis and Testing).

Vehicle equipped with

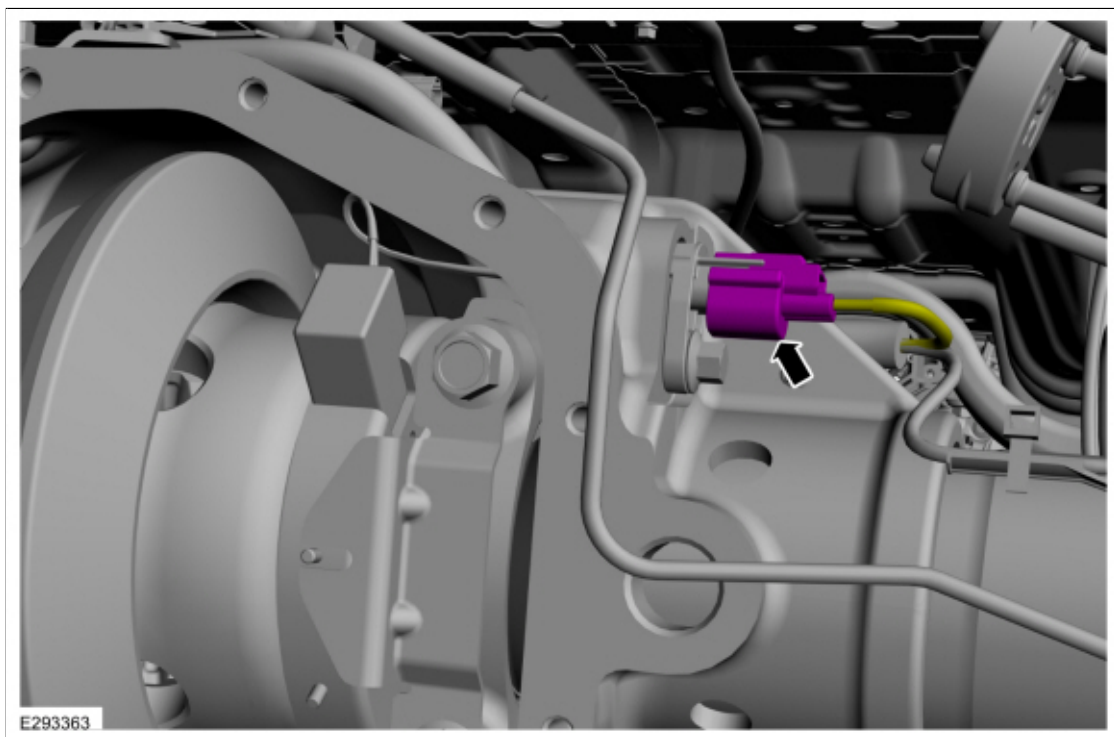
23. **NOTE:** Lubricate the ELD solenoid switch O-ring with rear axle oil.

Position the ELD solenoid switch and install the bolt.
Torque: 97 lb.in (11 Nm)





24. Connect the ELD solenoid electrical connector.



All vehicles

25. Install the axle shaft.
Refer to: [Axle Shaft](#) (205-02 Rear Drive Axle/Differential - Vehicles With: Dana M220, Removal and

Installation).

26. Install the differential housing cover.
Refer to: [Differential Housing Cover](#) (205-02 Rear Drive Axle/Differential - Vehicles With: Dana M220, Removal and Installation).

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