

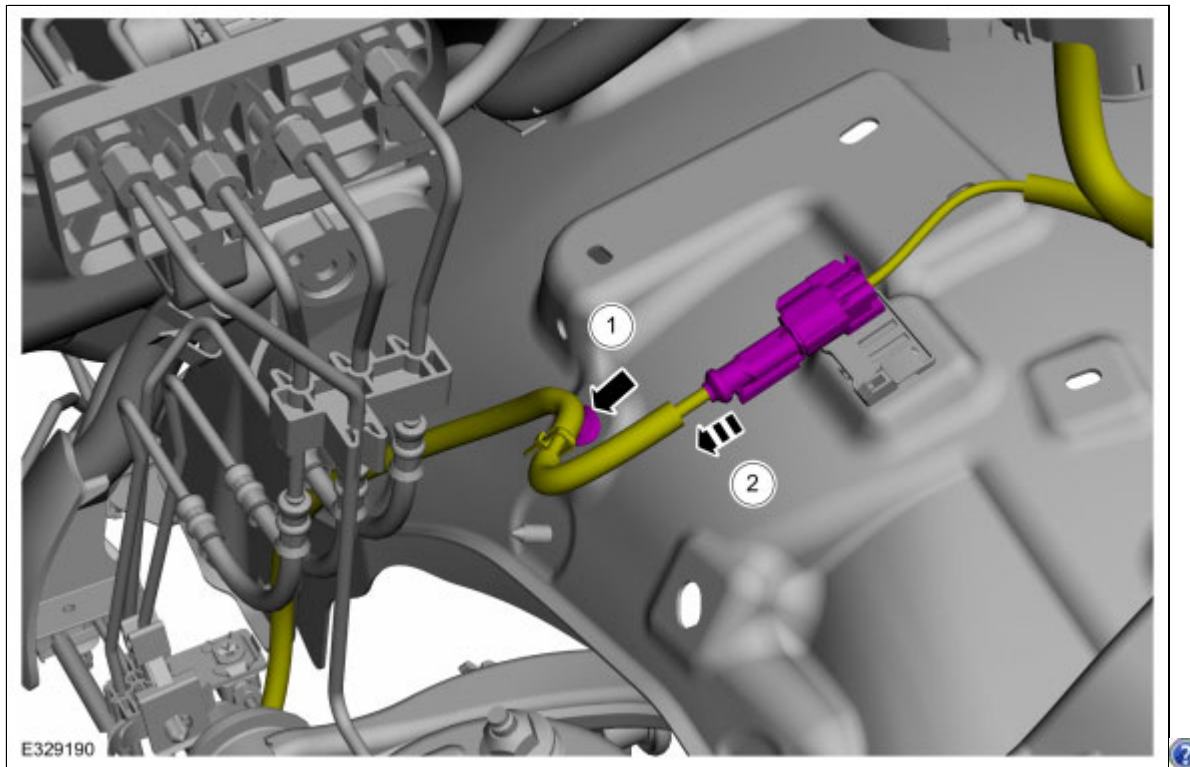
Halfshaft - Vehicles With: Integrated Wheel End (IWE)

Removal

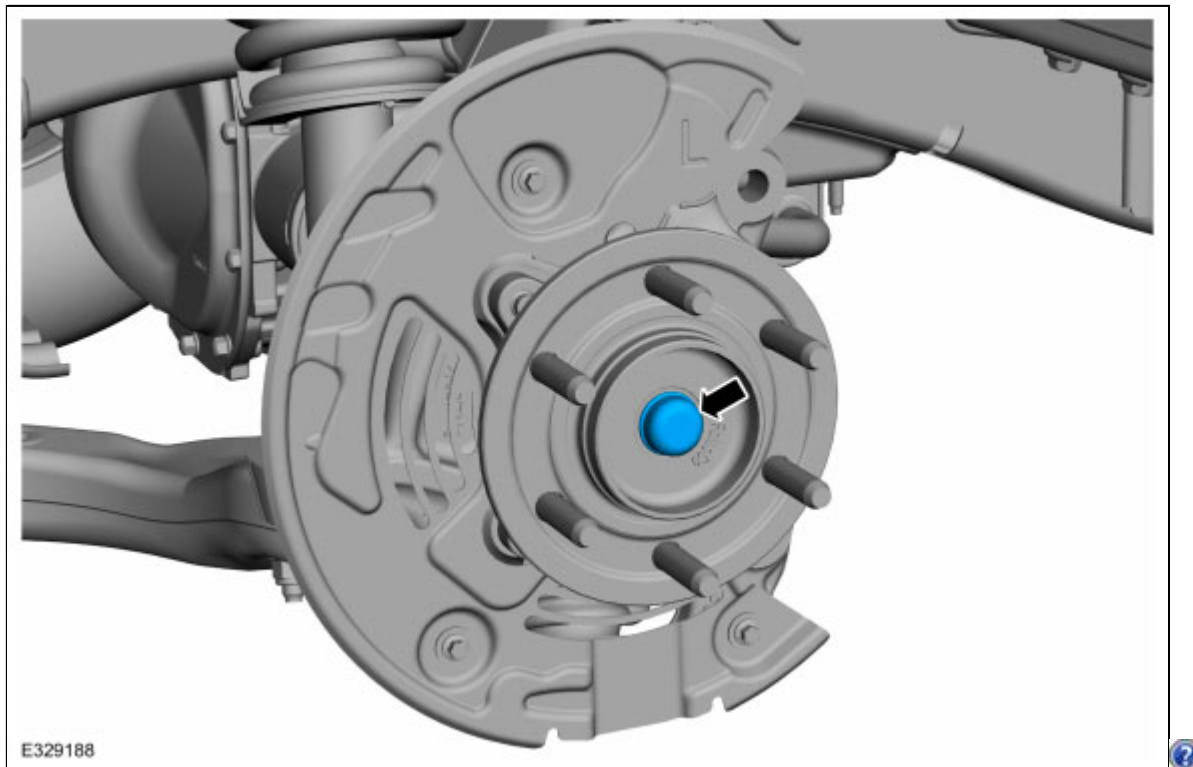
NOTICE: Suspension fasteners are critical parts that affect the performance of vital components and systems. Failure of these fasteners may result in major service expense. Use the same or equivalent parts if replacement is necessary. Do not use a replacement part of lesser quality or substitute design. Tighten fasteners as specified.

NOTE: Removal steps in this procedure may contain installation details.

1. Remove the engine front undershield.
Refer to: [Engine Front Undershield](#) (501-02 Front End Body Panels, Removal and Installation).
Refer to: [Engine Front Undershield - Raptor](#) (501-02 Front End Body Panels, Removal and Installation).
2. Remove the brake disc.
Refer to: [Brake Disc](#) (206-03 Front Disc Brake, Removal and Installation).
3.
 1. Detach the wheel speed sensor harness retainer.
 2. Disconnect the wheel speed sensor harness and position the harness aside.

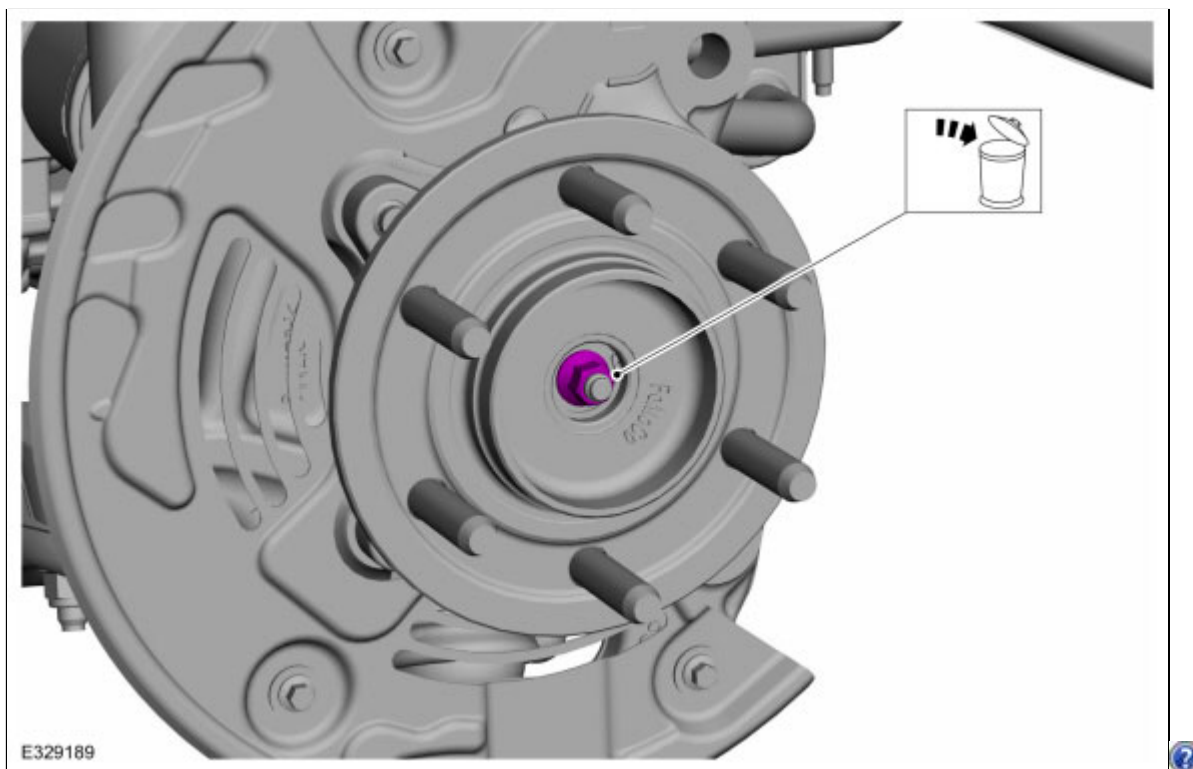


4. Remove the wheel hub nut dust cap.

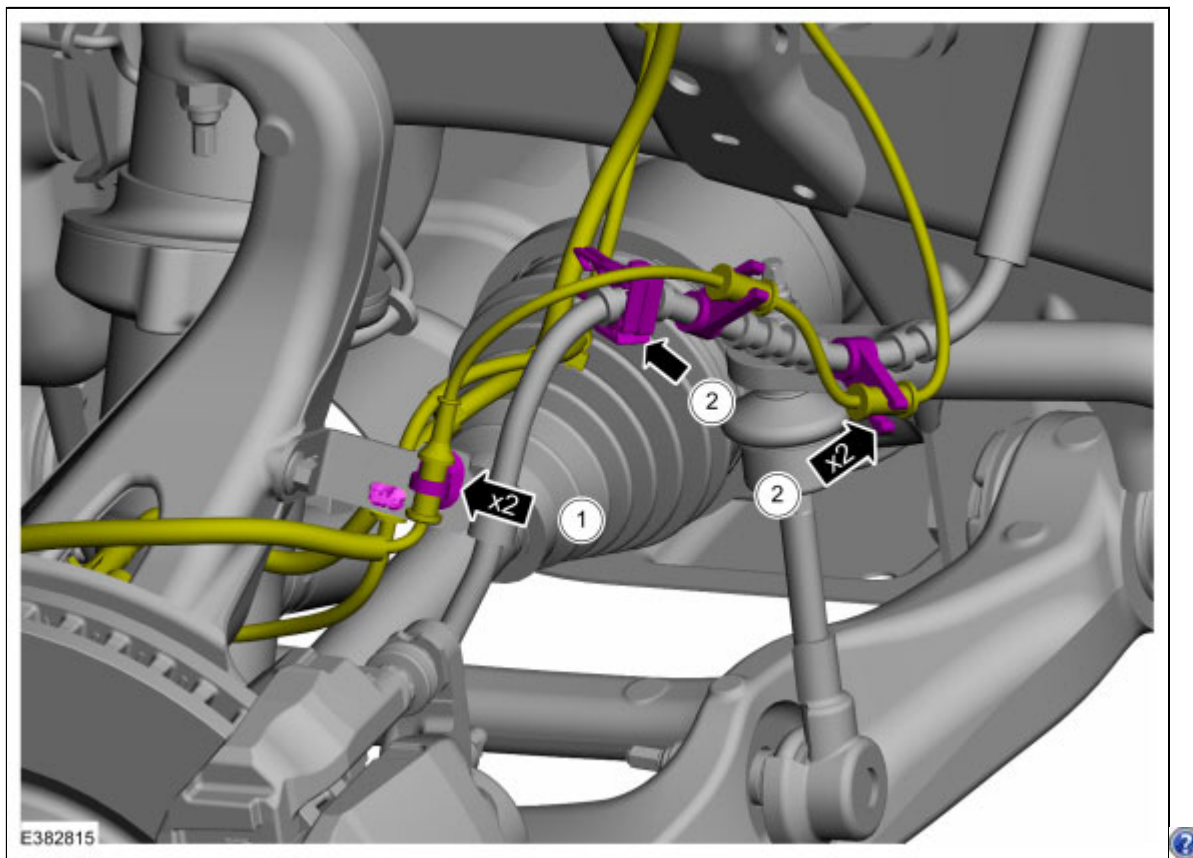


5. **NOTICE:** When installing the halfshafts measure the depth of the CV shaft threaded end to the inner bearing race. The minimum depth is 15.5 mm (0.61 in). If the depth is less than 15.5 mm (0.61 in) rotate the CV shaft to clear a binding condition between the IWE and CV splines. Installing the axle nut and tightening without the proper depth of protrusion will result in damage to the IWE.

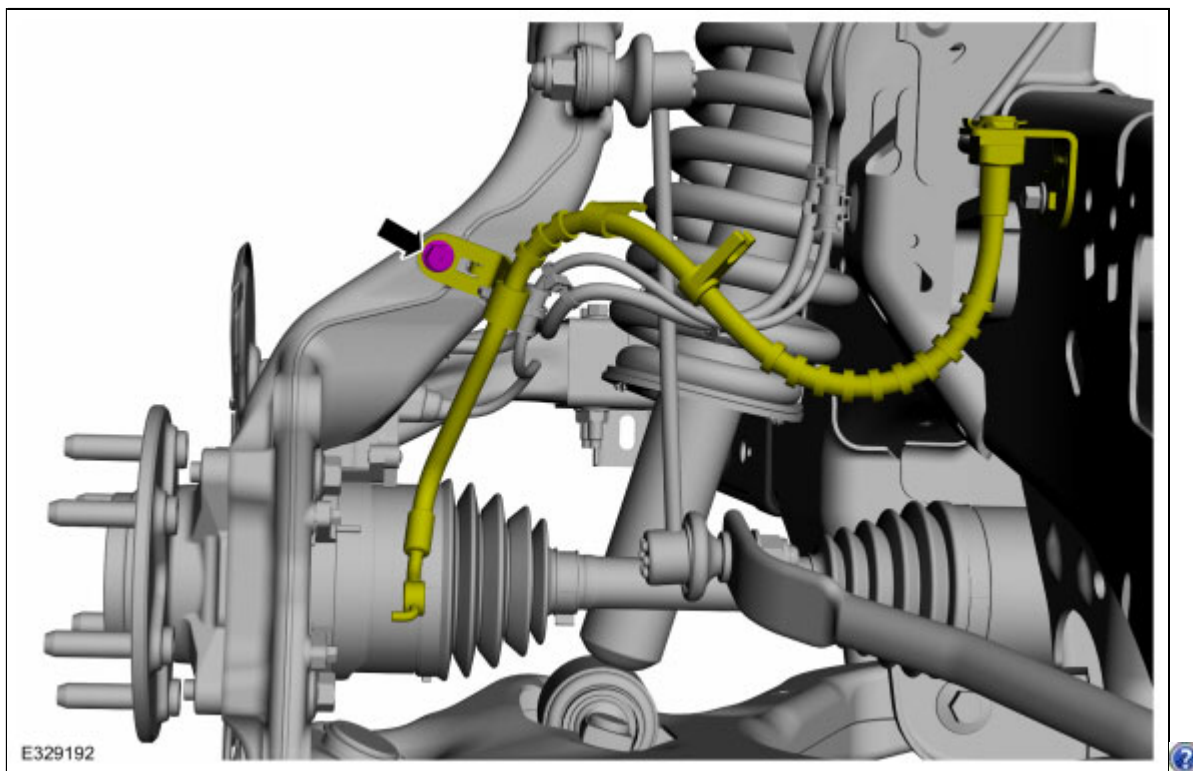
Remove and discard the wheel hub nut.
Torque : 30 lb.ft (40 Nm)



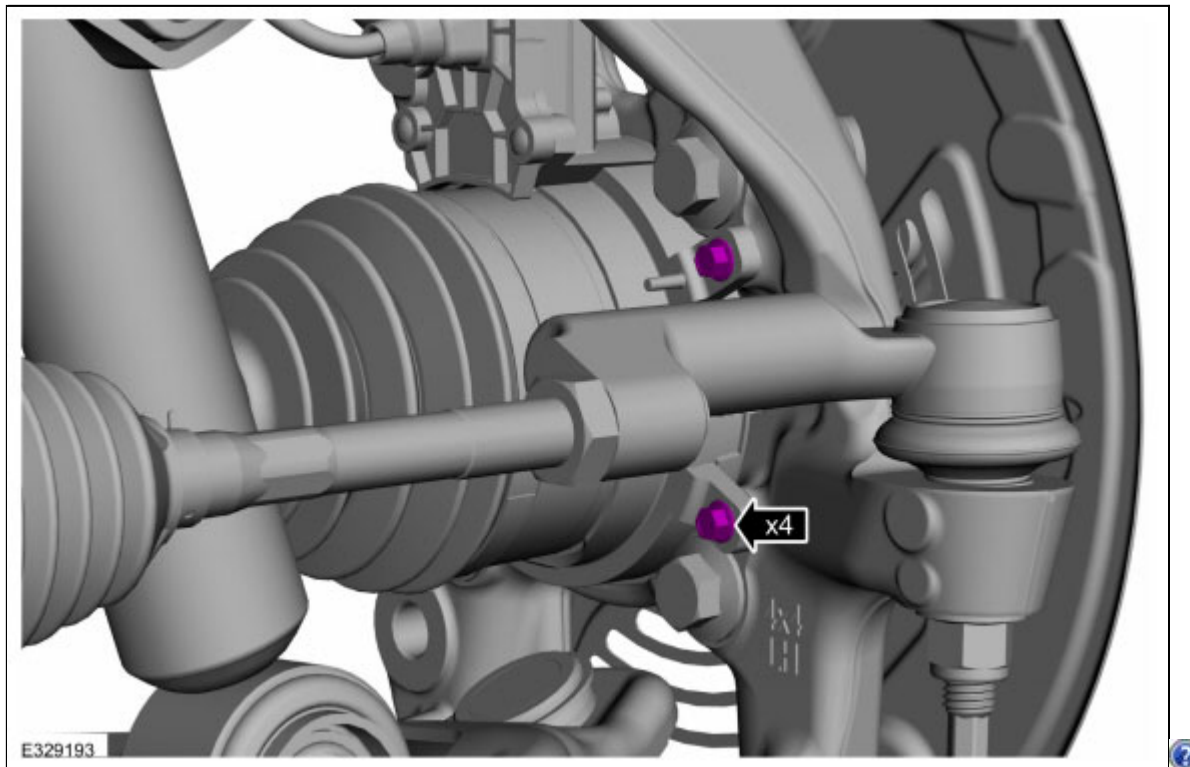
- 6.
1. Unclip the wheel speed sensor and IWE (integrated wheel end) harness from the brake hose.
 2. Detach the wheel speed sensor and IWE wiring retainers.



7. Remove the flexible brake hose bracket bolt and position the flexible brake hose aside.
Torque : 22 lb.ft (30 Nm)



8. Remove the IWE bolts.
Torque : 106 lb.in (12 Nm)

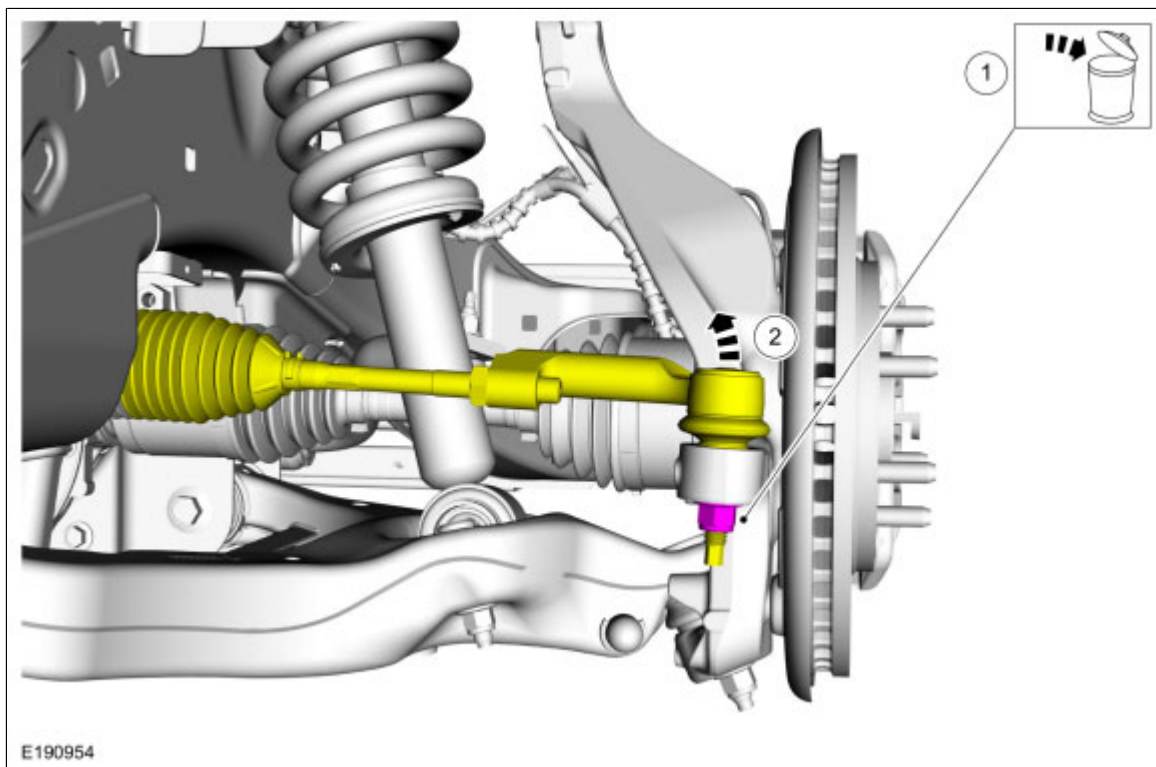


9.

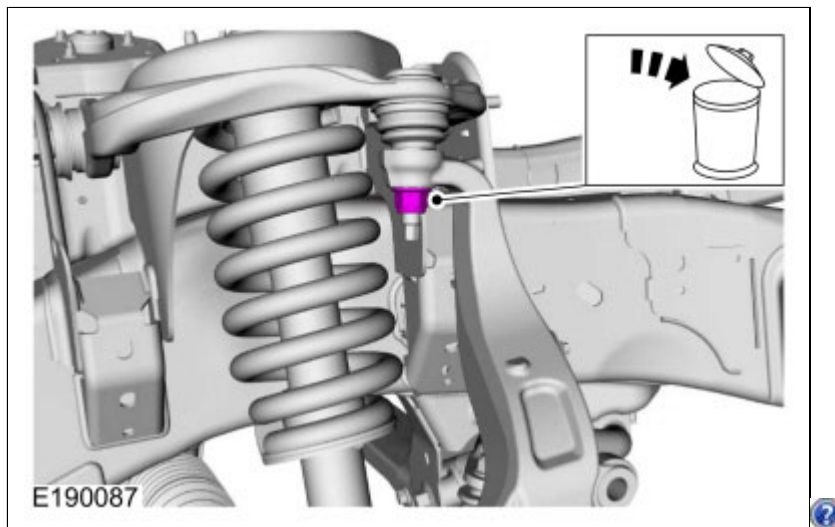
1. Remove and discard the outer tie rod end nut.
Torque : 66 lb.ft (90 Nm)
2. **NOTICE: Do not use a hammer to separate the outer tie-rod end from the wheel knuckle or damage to the wheel knuckle may result.**

NOTICE: Use care when installing the tie rod separator or damage to the outer tie-rod end boot may occur.

Separate the outer tie rod end from the wheel knuckle.
Use the General Equipment: Tie Rod End Remover

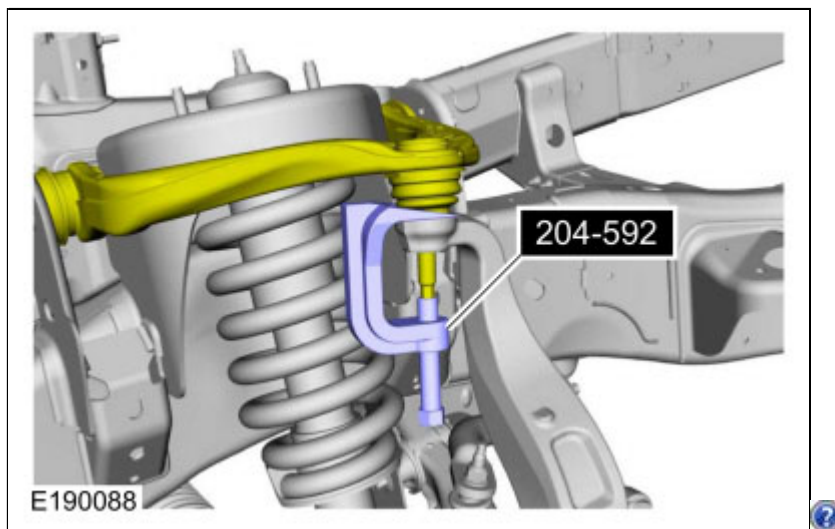


10. Remove and discard the upper ball joint nut.
Torque : 46 lb.ft (63 Nm)

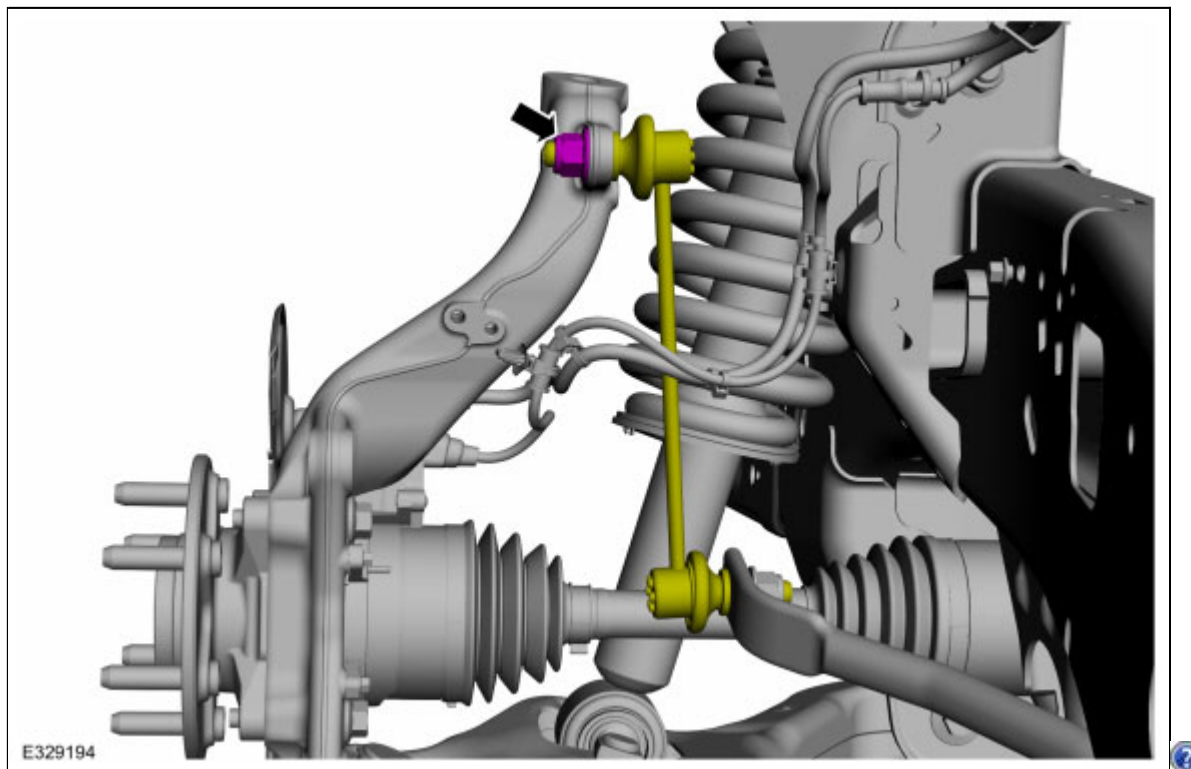


11. **NOTE:** Be sure not to damage the ball joint boot when installing the Ball Joint Separator.

Separate the upper ball joint from the wheel knuckle.
Use Special Service Tool : 204-592 Separator, Lower Arm Ball Joint

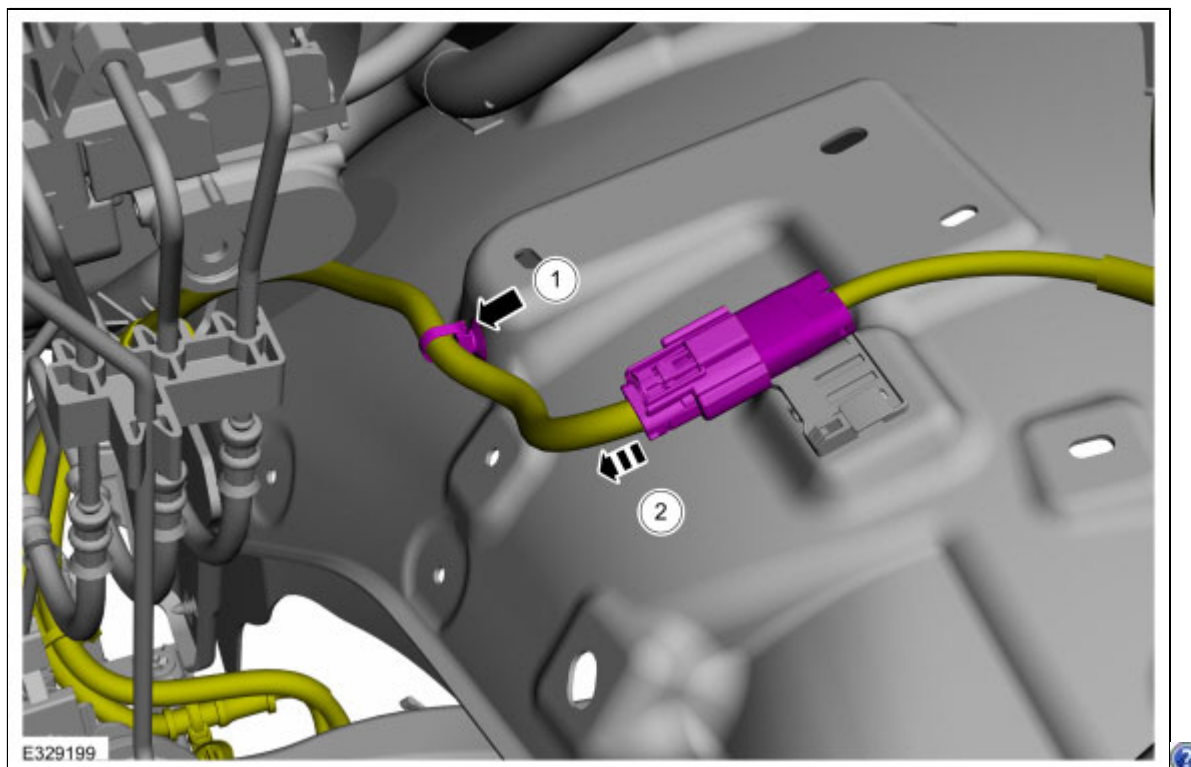


12. Remove the nut and position aside the stabilizer bar linkage assembly.
Torque : 111 lb.ft (150 Nm)



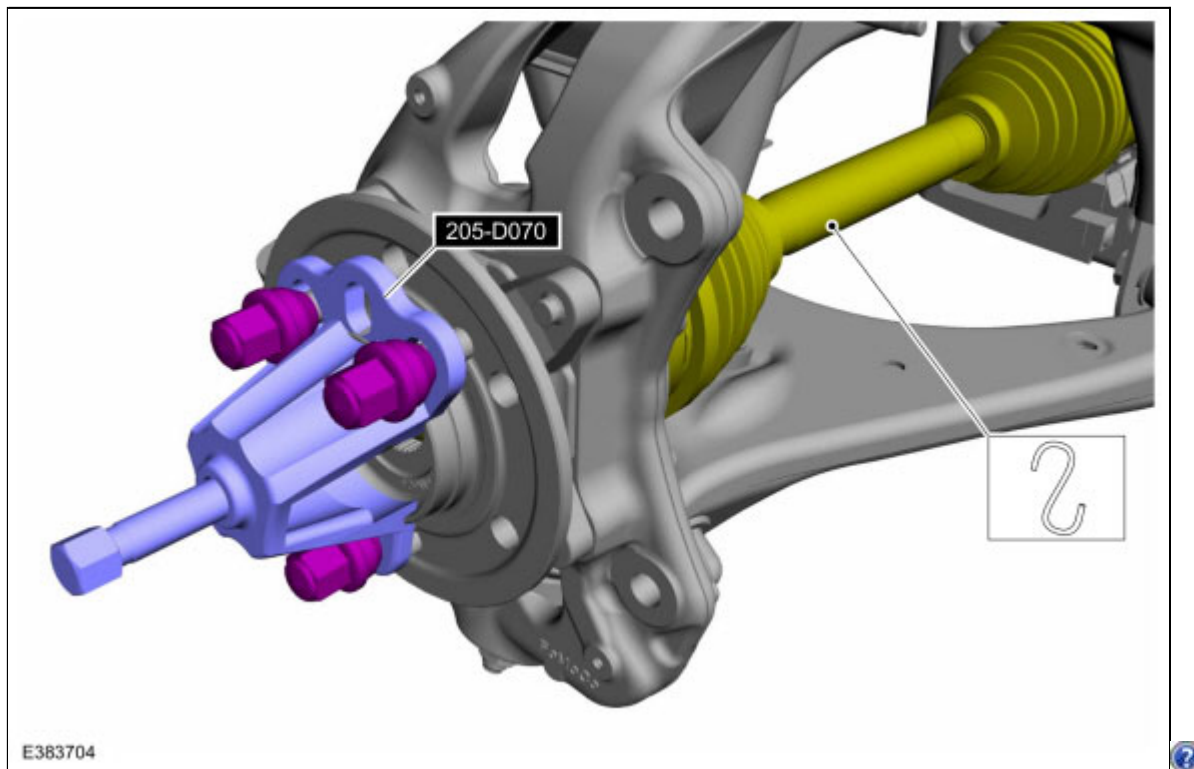
13.

1. Detach the IWE harness retainer.
2. Disconnect the IWE harness and position the harness aside.

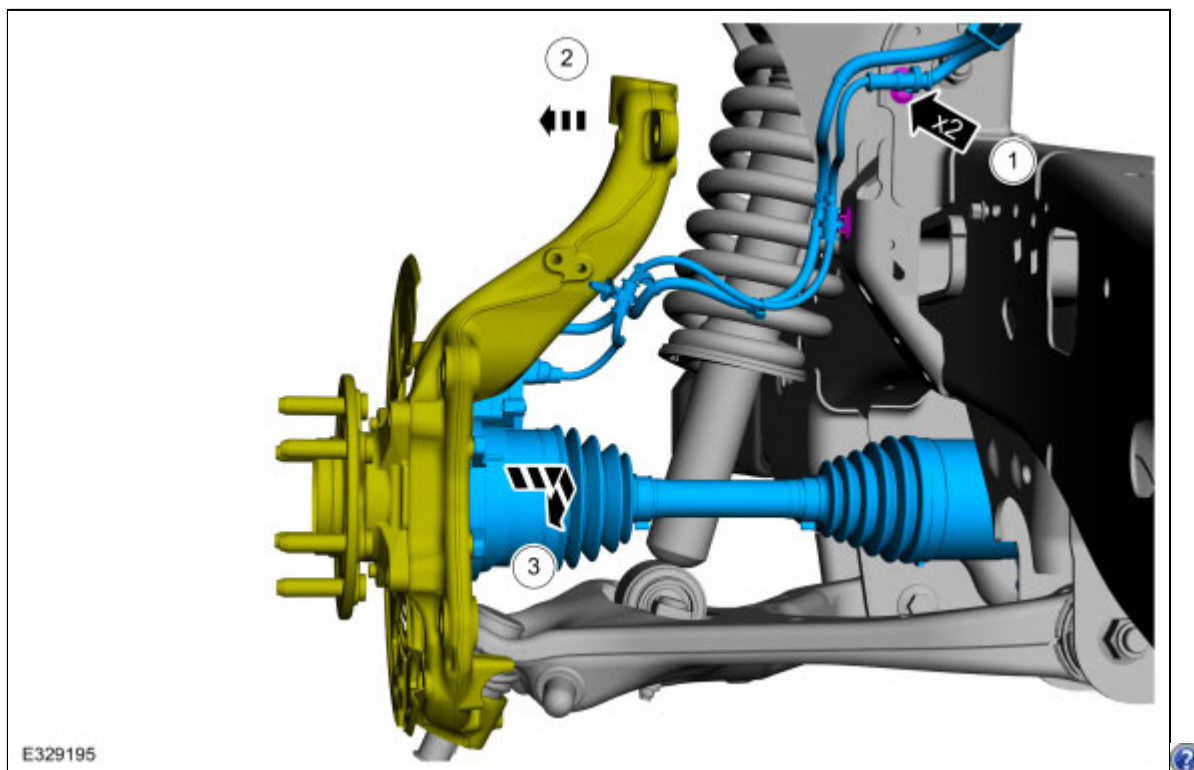


14. **NOTICE:** Do not bend the inner joint more than 18 degrees and the outer joint more than 45 degrees. Damage to the shaft will occur.

Using the special tool, press the halfshaft from the wheel bearing and hub. Support the halfshaft in a level position.
Use Special Service Tool : 205-D070 (D93P-1175-B) Remover, Front Wheel Hub

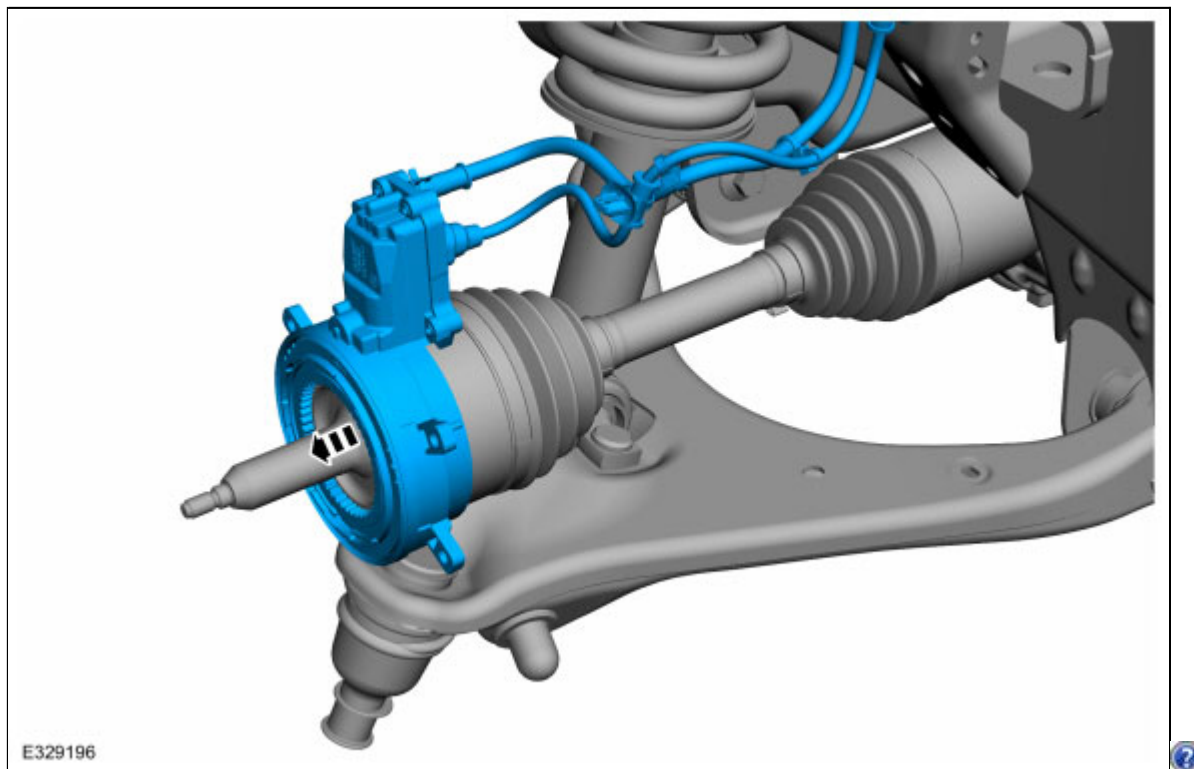


- 15.
1. Detach the IWE harness retainers.
 2. Position aside the wheel knuckle to gain the access.
 3. Remove the outboard halfshaft end and IWE disconnect from the steering knuckle hub bearing.



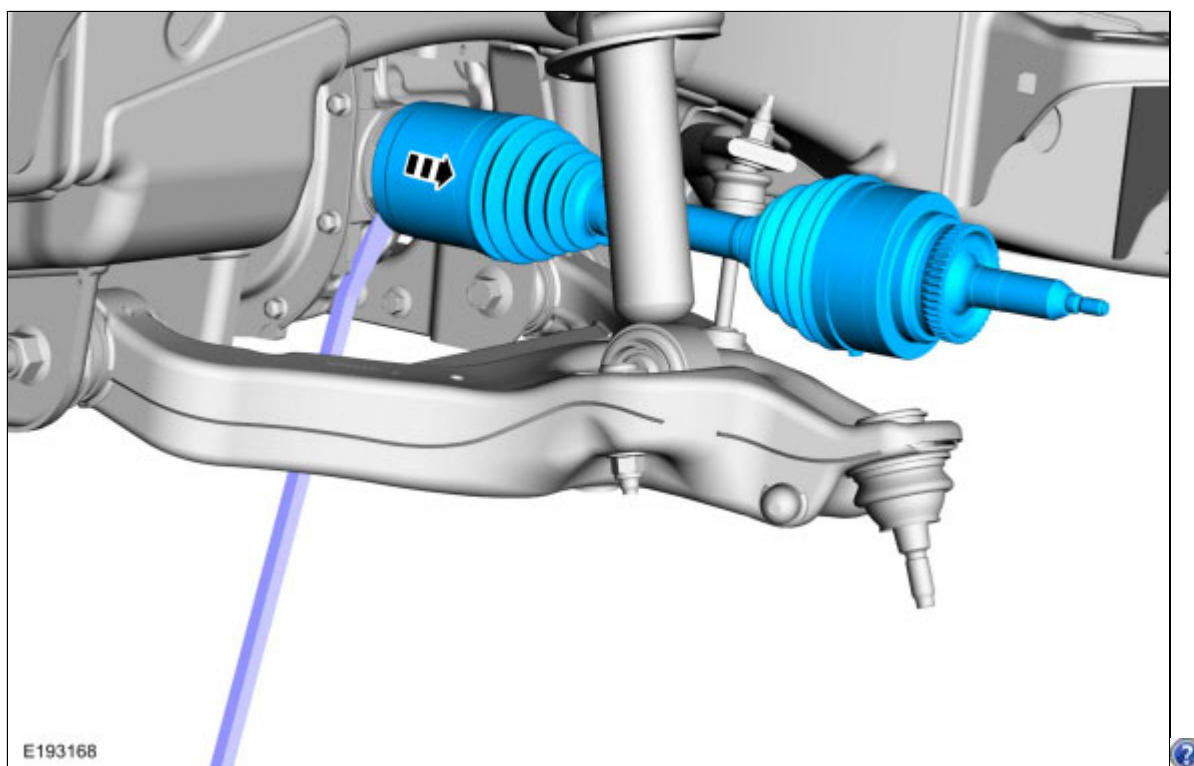
16. **NOTICE:** For installation, apply 24 inches of vacuum (24 inHg) to the large port/supply port of the IWE. Hold the vacuum until the IWE bolts are installed.

Remove the IWE disconnect from the outboard CV joint housing.



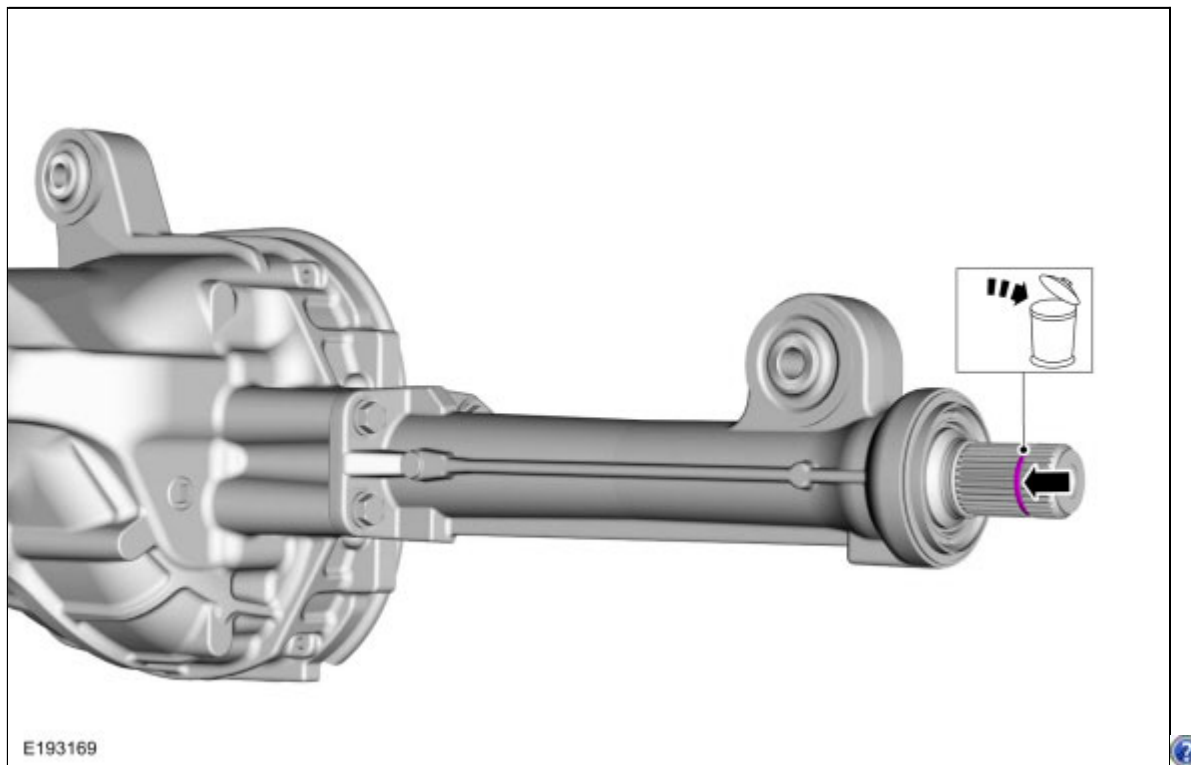
17. **NOTE:** Use care to not cause damage to the components.

Using the tire lever, remove the halfshaft from the differential and the intermediate shaft.
Use the General Equipment: Tire Lever



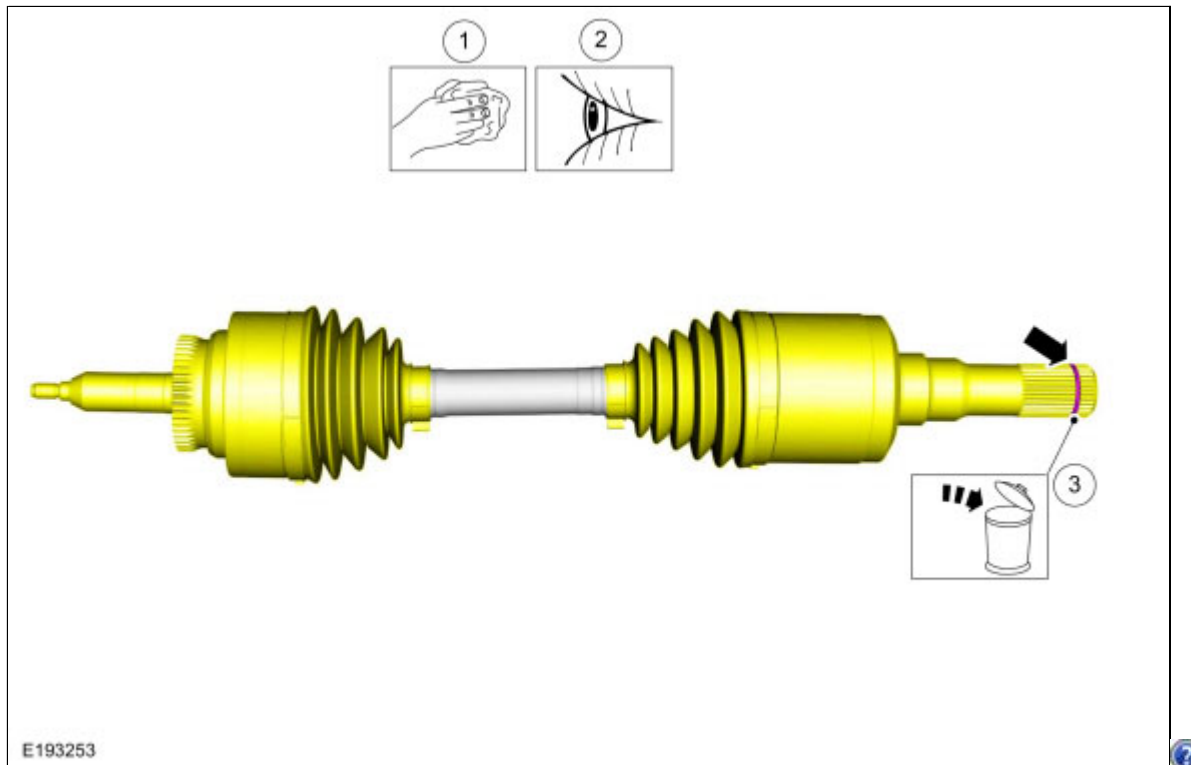
18. **NOTE:** RH side.

Remove and discard the circlip.

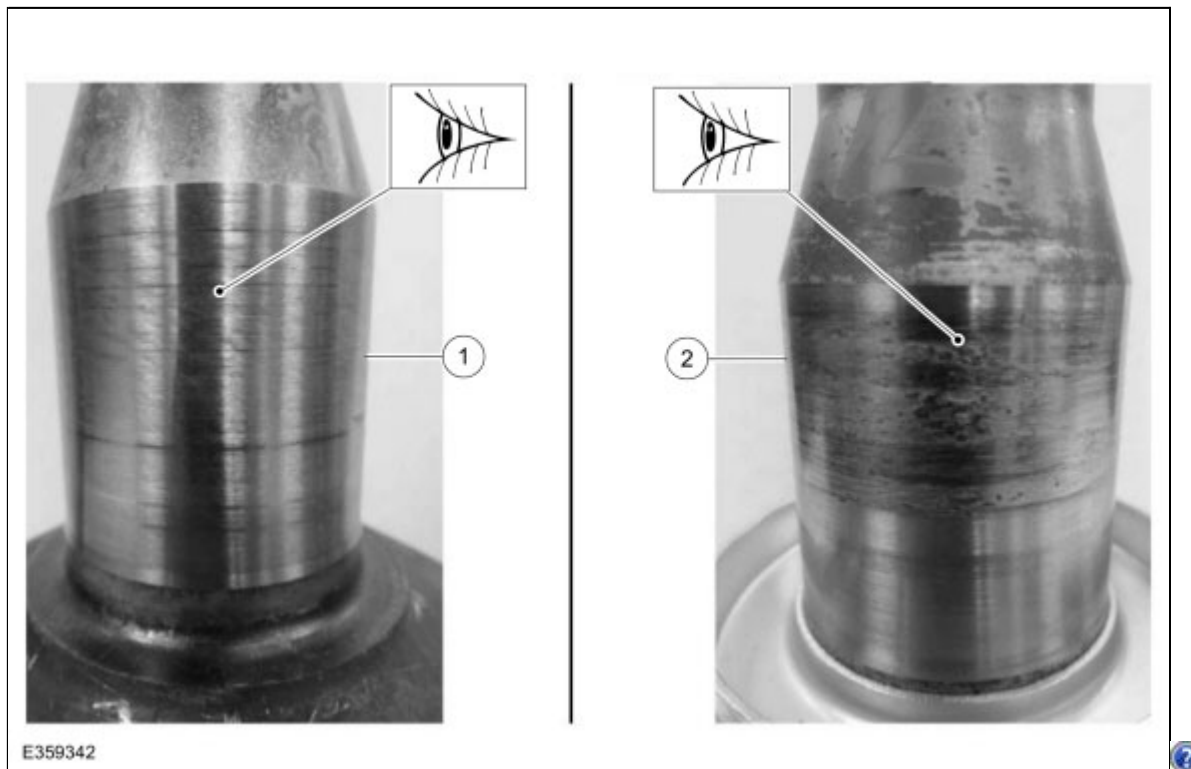


19. **NOTE:** LH side shown RH side similar.

1. Clean the inner and outer halfshaft ends.
2. Inspect the inner and outer halfshaft ends.
3. Remove and discard the circlip.

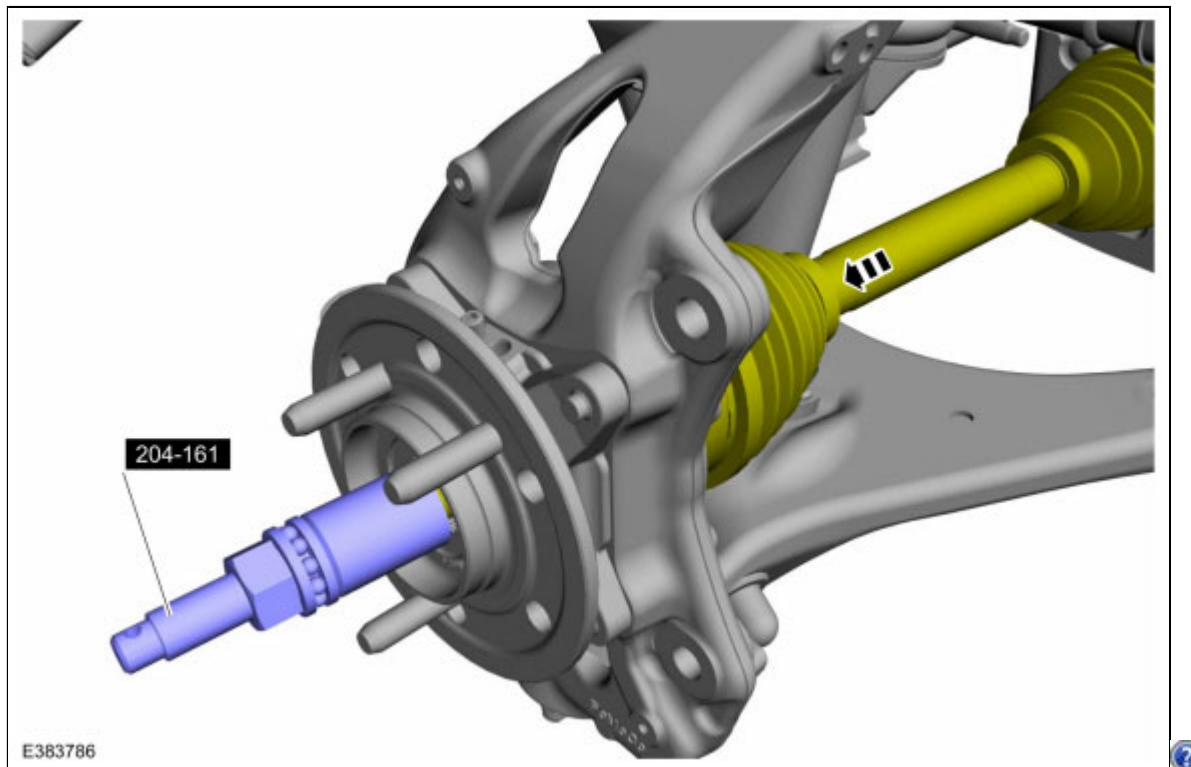


20. Inspect the inner CV housing.
1. Normal or acceptable wear.
 2. Abnormal or excessive wear.



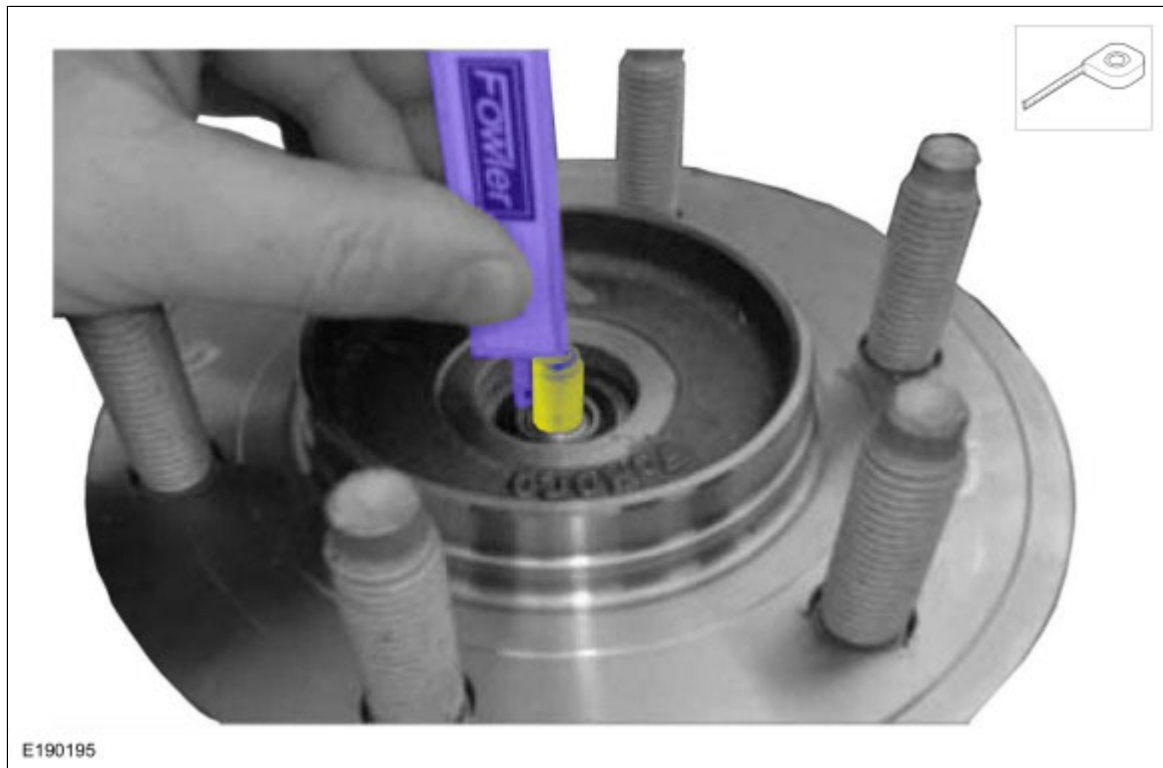
Installation

1. If the LH halfshaft is removed, replace the LH axle shaft seal.
2. Pull the halfshaft into the front wheel bearing and wheel hub.
Use *Special Service Tool* : 204-161 (T97P-1175-A) Installer, Halfshaft



3. **NOTICE:** Measure the depth of the CV shaft threaded end to the inner bearing race (shown in illustration). The minimum depth is 15.5 mm (0.61 in). If the depth is less than 15.5 mm (0.61 in) rotate the CV shaft to clear a binding condition between the IWE and CV splines. Installing the axle nut and tightening without the proper depth of protrusion will result in damage to the IWE.

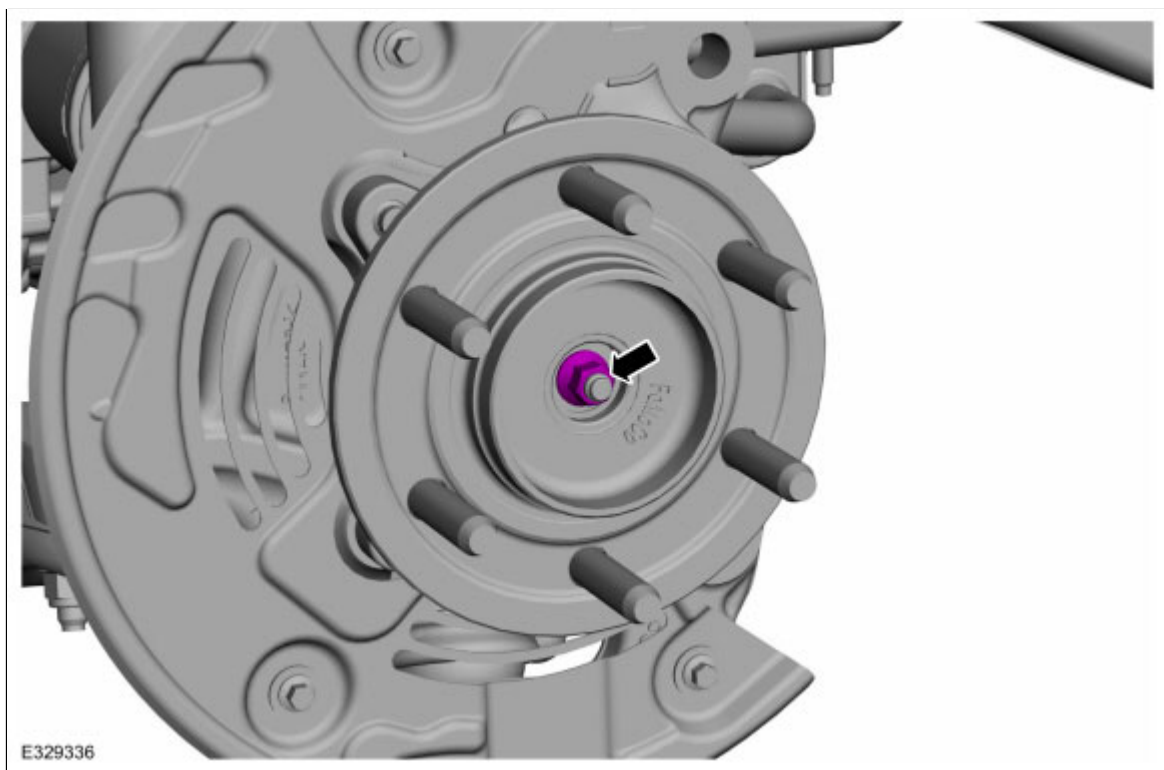
When installing the halfshaft, measure the CV shaft threaded end to the inner bearing race.



4. **NOTICE:** Verify the spline engagement by checking for spline lash before installing the wheel hub nut or component damage may occur.

NOTE: With vacuum still applied to the IWE.

1. Install the new the axle nut.
Torque : 30 lb.ft (40 Nm)
2. Verify free rotation of the hub with no CV joint rotation. No clicking or grinding noise should be present.
3. Release vacuum and rotate bearing slightly to engage actuator (may hear single click when IWE system engages). Verify hub and CV joint rotate together.



5. To install, reverse the removal procedure.
6. Check the front differential fluid level.
Refer to: [Differential Fluid Level Check](#) (205-03 Front Drive Axle/Differential, General Procedures).