F150 Off-road Shock Kit
M-18000-F15A

Please visit www. performanceparts.ford.com for the most current instruction and warranty information.

PLEASE READ ALL OF THE FOLLOWING INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION. AT ANY TIME YOU DO NOT UNDERSTAND THE INSTRUCTIONS, PLEASE CALL THE FORD PERFORMANCE TECHLINE AT 1-800-367-3788

Kit includes:

2 - Front shock/spring assembly (includes 6 nuts and 4 bolts)
2- Rear shock
8 – W520214-S440 Upper ball joint/rear shock/stab bar link nuts12mm
2 – W520215-S440 Tie rod end
2 – N802827-S100A Halfshaft nut
4 – W506545-S439 Rear shock bolts 12mm X 70mm

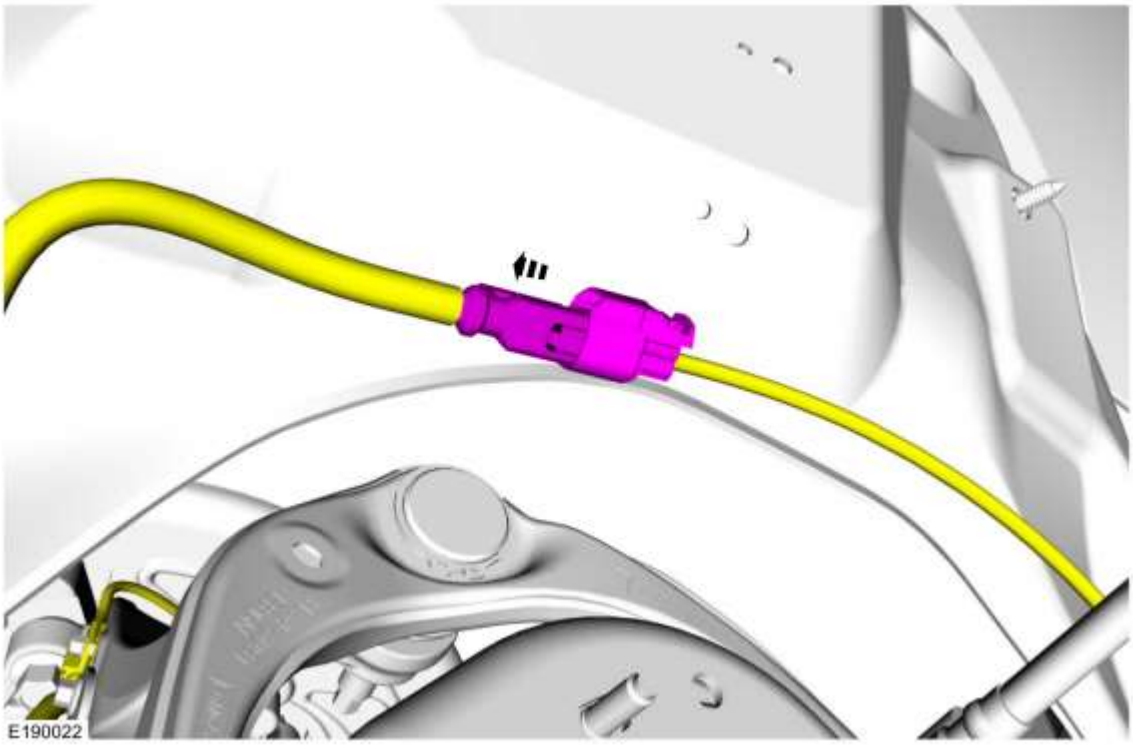
Front Shock Removal

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.

Remove wheel and tire

NOTE: *The wheel speed sensor electrical connector is located in the engine compartment secured to the fender apron.*

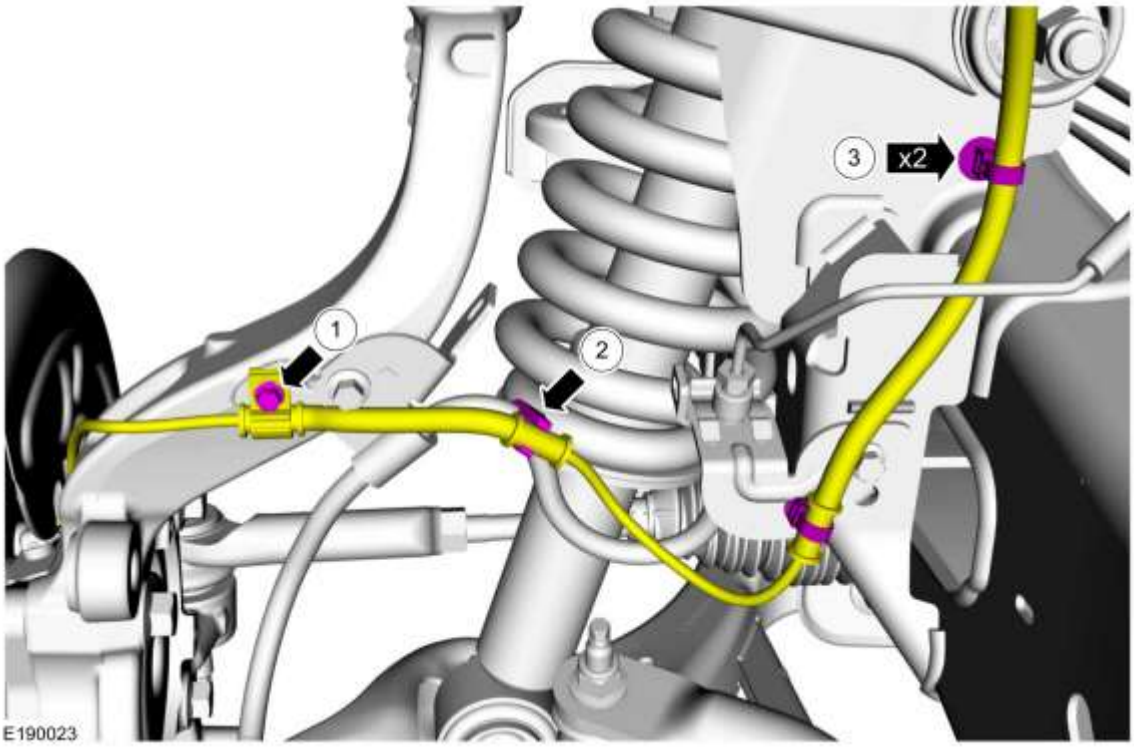
Disconnect the wheel speed sensor electrical connector.



Remove the wheel speed sensor wire bracket bolt.

Unclip the wheel speed sensor wire from the brake hose.

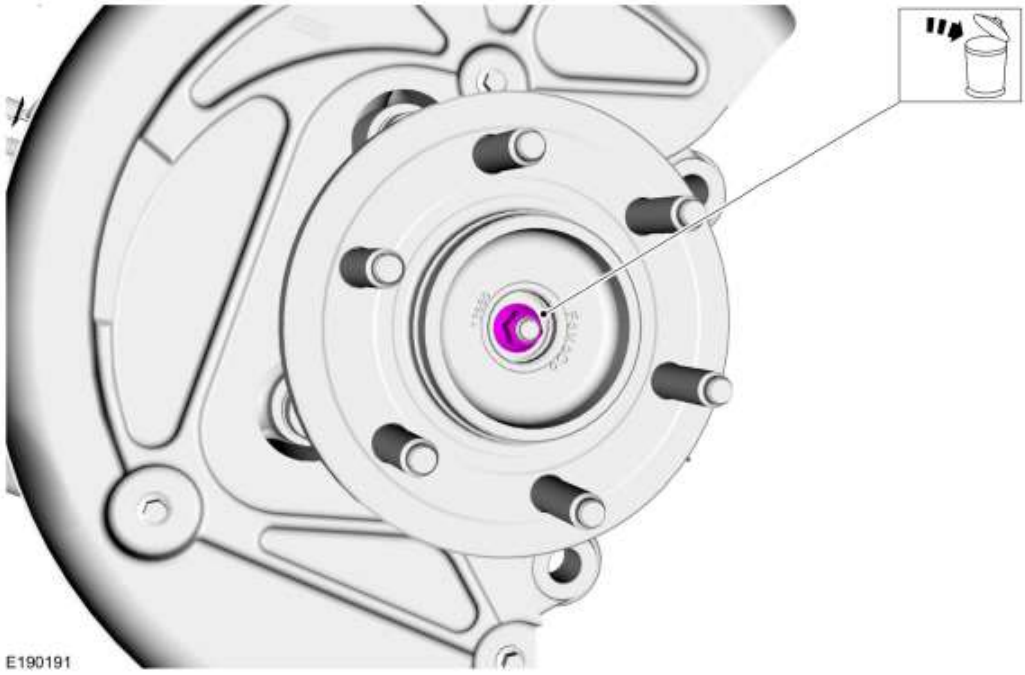
Unclip the 2 wheel speed sensor wire retainers and position aside the wheel speed sensor wire.



Remove the wheel hub nut dust cap.

E190190

Remove and discard the wheel hub nut.

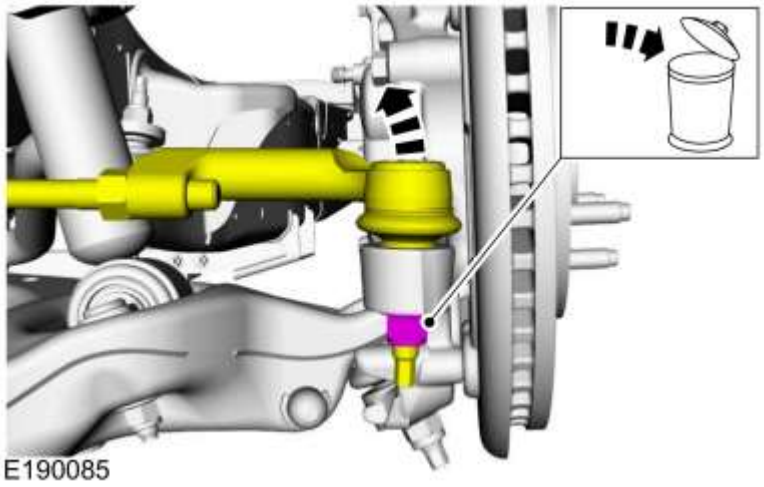


E190191

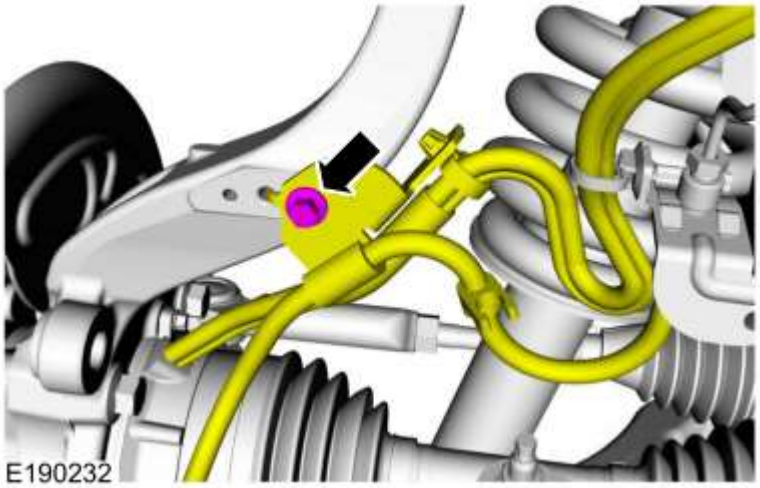
NOTICE: Do not use a hammer to separate the outer tie-rod end from the wheel knuckle or damage to the wheel knuckle may result.

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

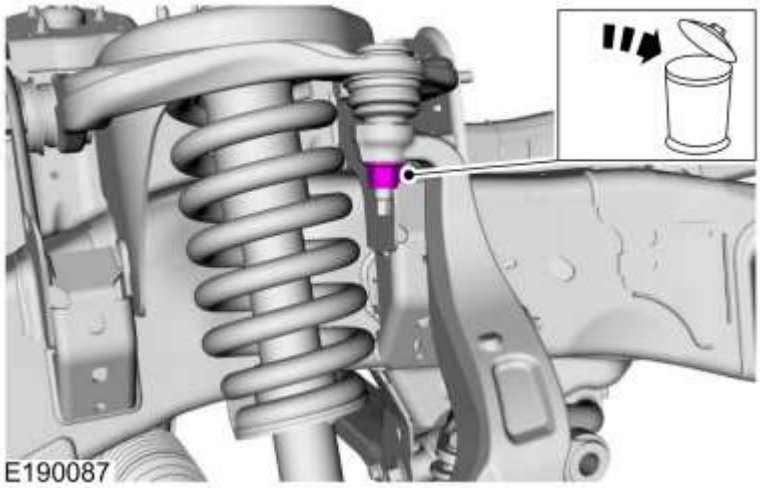
Remove and discard the tie rod end nut and separate the tie rod end from the wheel knuckle.
Use Tie Rod End Remover


E190085

Remove the brake hose bracket bolt and position the brake hose bracket aside.

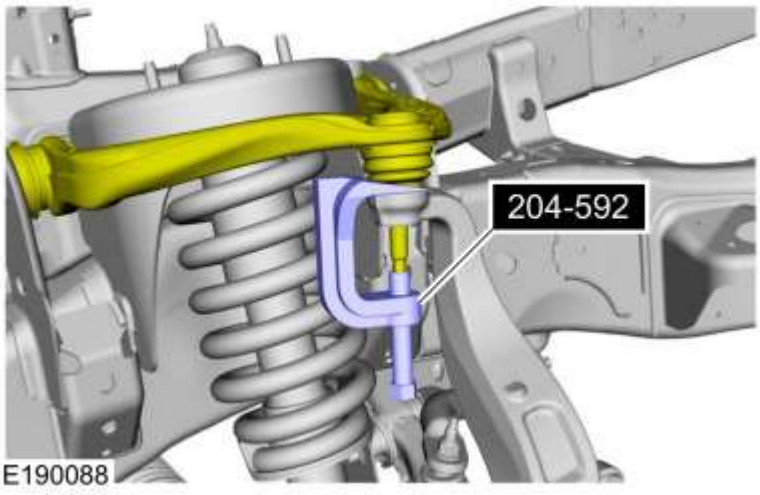

E190232

Loosen the upper ball joint nut. Do not remove completely.

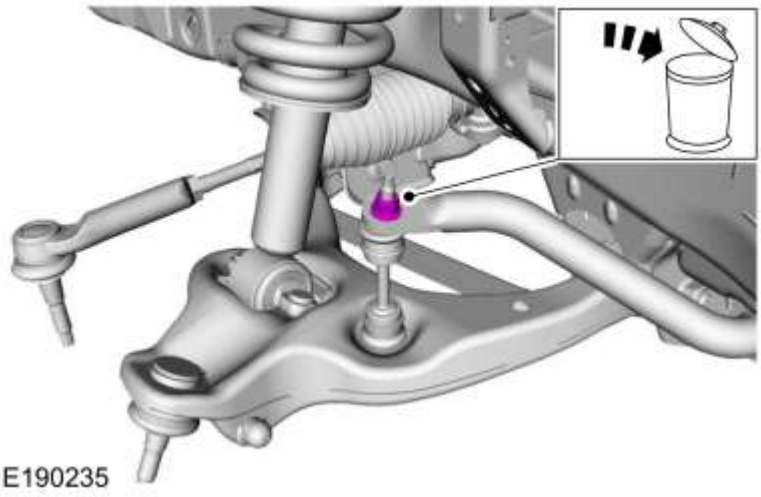


NOTE: *Be sure not to damage the ball joint boot when installing the Ball Joint Separator.*

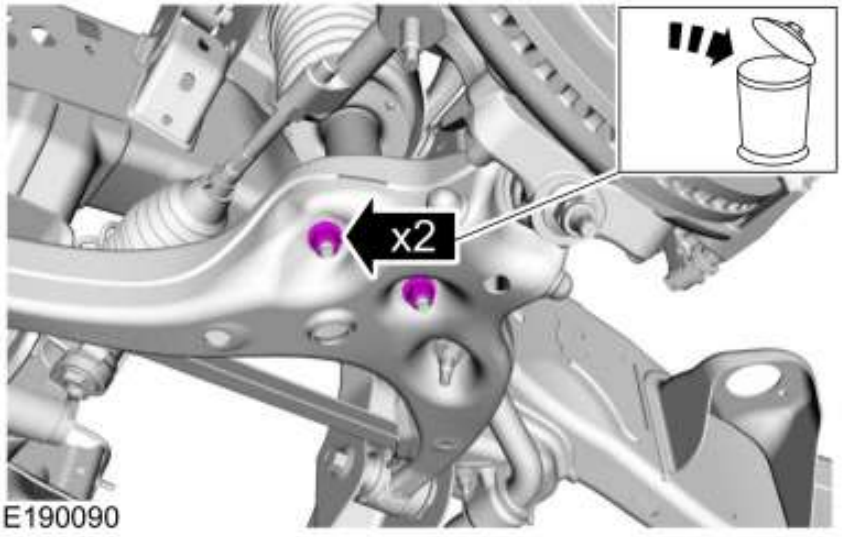
Separate the upper ball joint from the wheel knuckle.



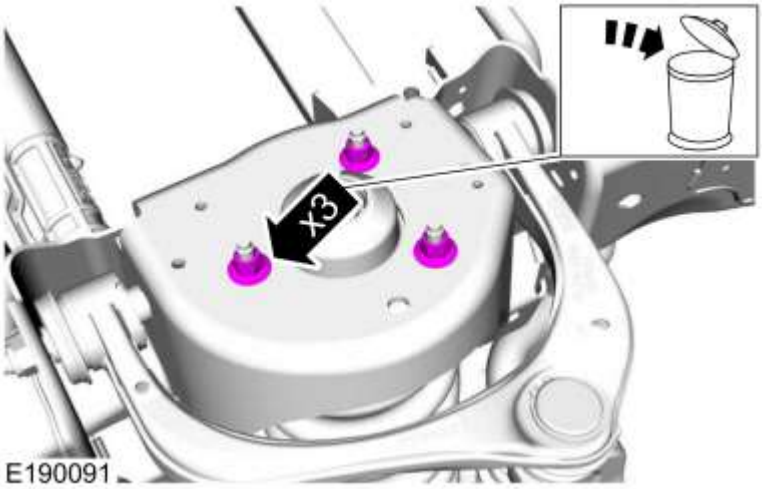
Remove and discard the front stabilizer bar link upper nut. (wheel knuckle removed for clarity)



Remove and discard the 2 shock absorber and spring assembly lower nuts.



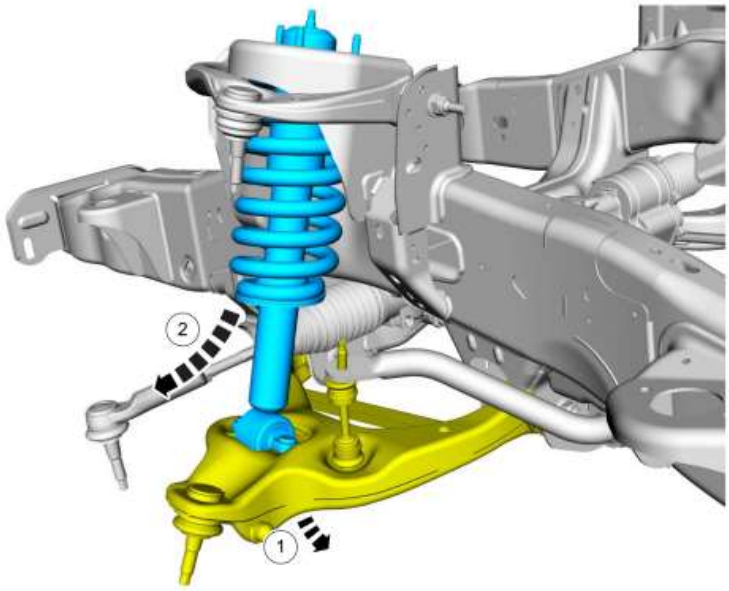
Remove and discard the 3 shock absorber and spring assembly upper nuts.



Prior to releasing the nut from the upper control arm ball joint completely, be sure to support the wheel knuckle so that it does not fall and cause damage. Disconnect upper control arm from the wheel knuckle.

Position the lower arm down to gain clearance for removing the shock absorber and spring assembly.

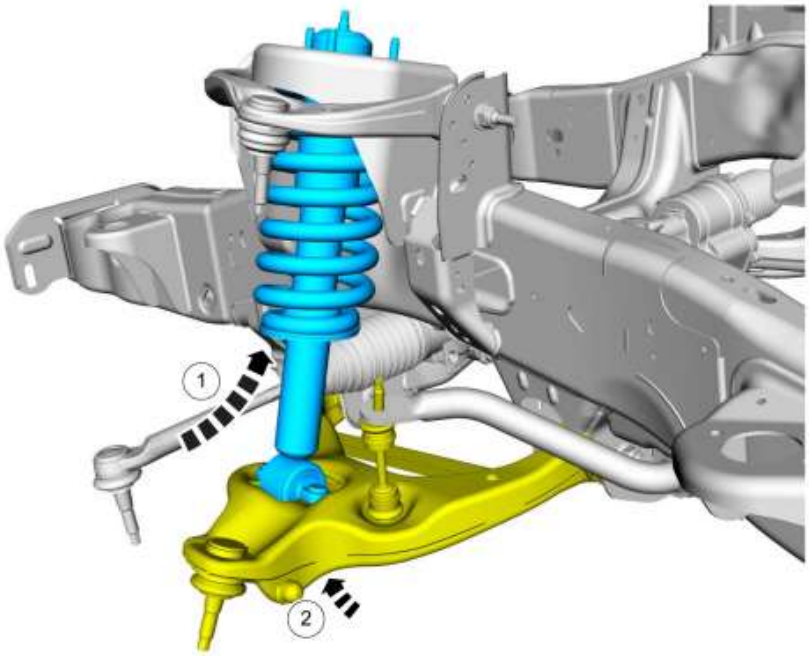
Remove the shock absorber and spring assembly. (wheel knuckle removed for clarity)



E190236

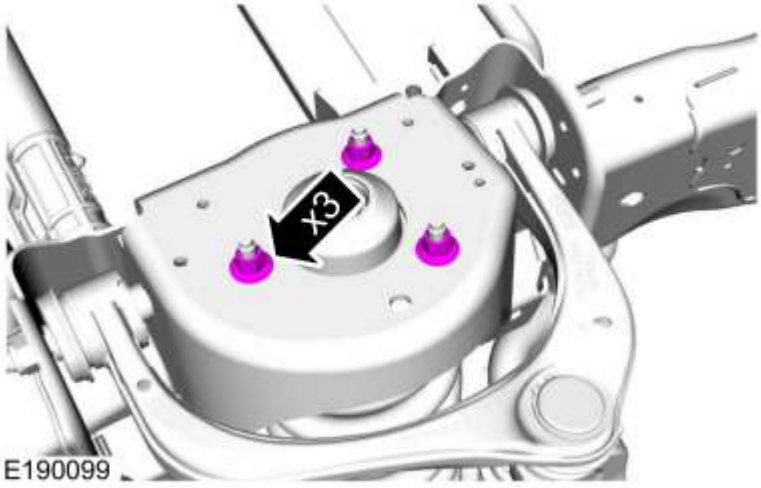
Install the shock absorber and spring assembly. (wheel knuckle removed for clarity)

Position the lower arm up.

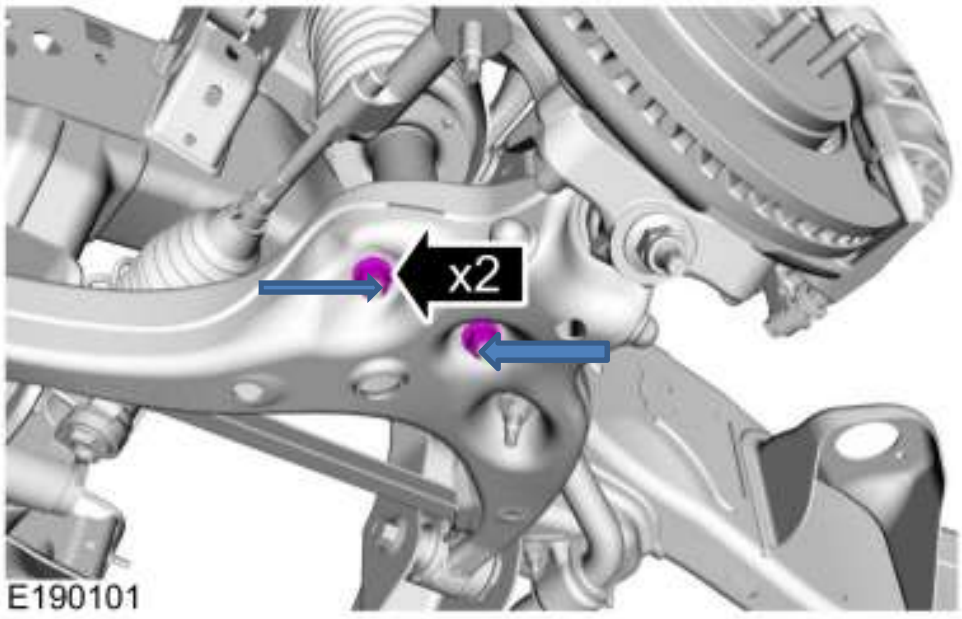


E190237

Install the 3 new shock absorber and spring assembly upper nuts.
Torque: 24 lb.ft (33 Nm)

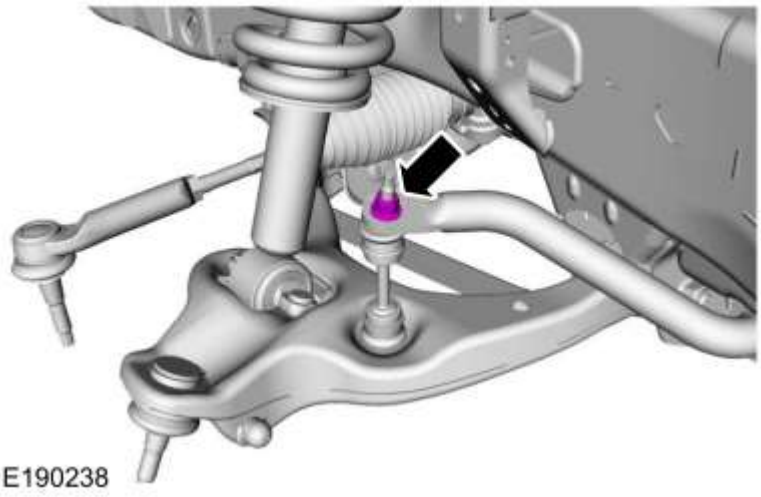


Install the 2 new shock absorber and spring assembly using the 2 supplied bolts and washers. Apply blue medium strength thread locking compound, install bolts from below through control arm into shock assembly.
Torque: 50 lb.ft (68 Nm)

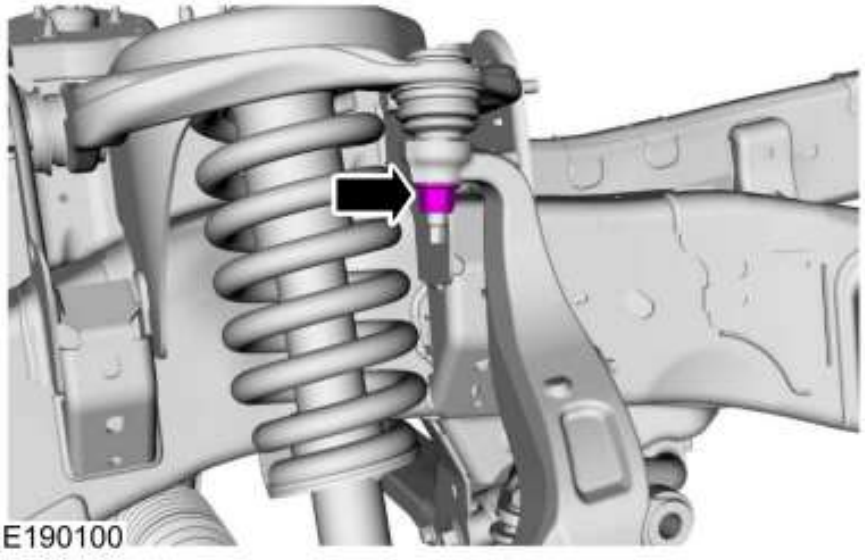


NOTE: *Use the hex-holding feature to prevent the stud from turning while installing the nut.*

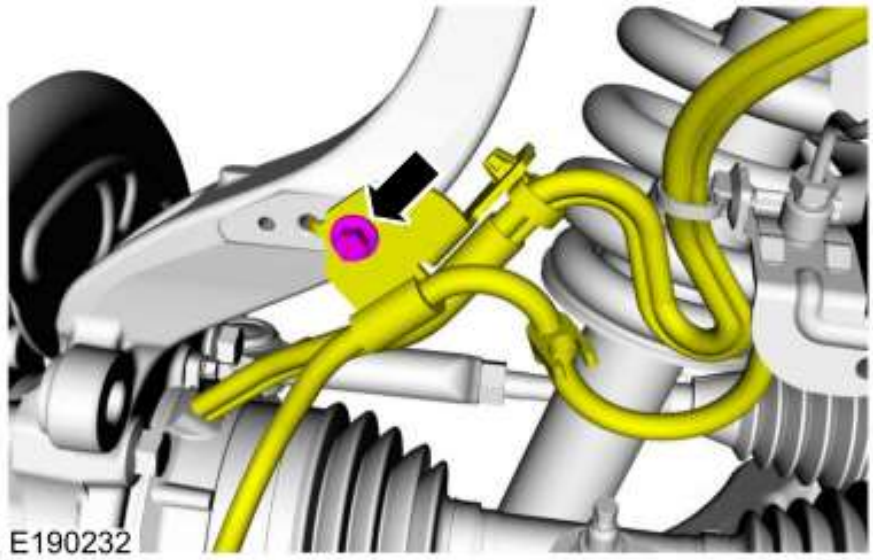
Install the new front stabilizer link upper nut. (wheel knuckle removed for clarity)
Torque: 59 lb.ft (80 Nm)



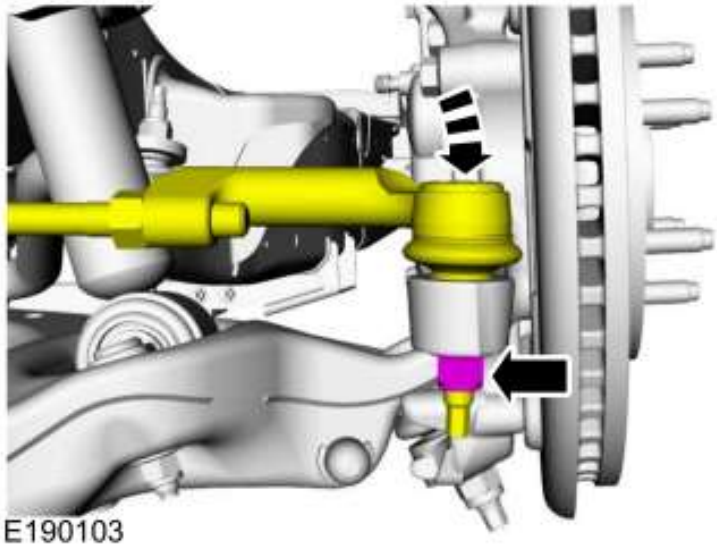
Install the new upper ball joint nut.
Torque: 46 lb.ft (63 Nm)



Position the brake hose bracket and install the brake hose bracket bolt.
Torque: 22 lb.ft (30 Nm)

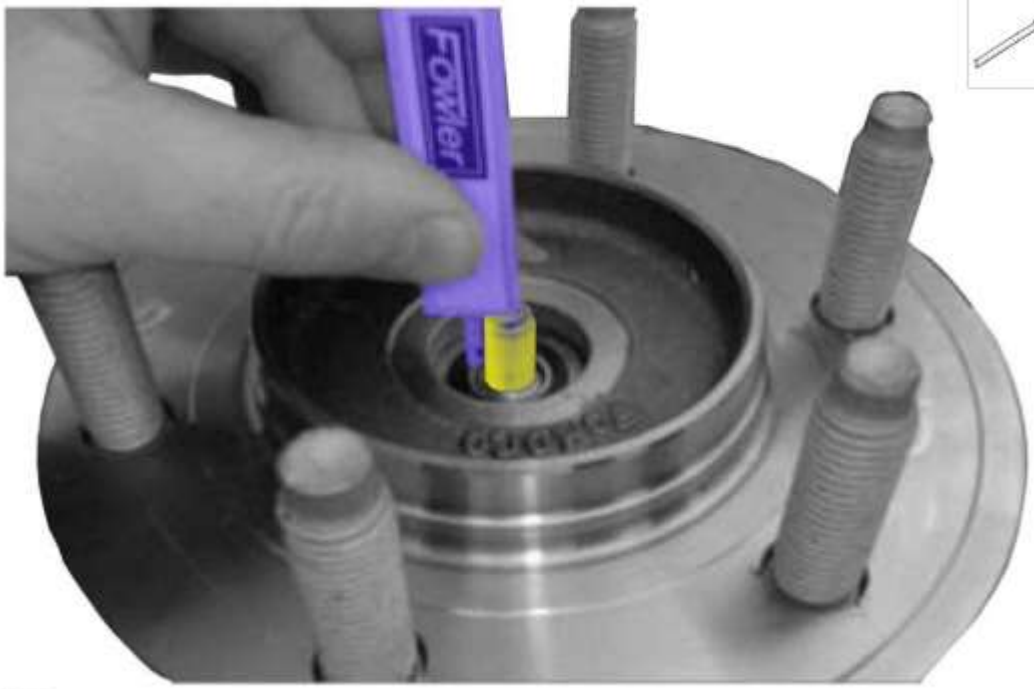


Position the tie rod end and install the new tie rod end nut.
Torque: 76 lb.ft (103 Nm)


E190103

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.

Measure the CV shaft threaded end to the inner bearing race.



E190195

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

Install the new the axle nut.
Torque: 30 lb.ft (40 Nm)

Verify free rotation of the hub with no CV joint rotation. No clicking or grinding noise should be present.

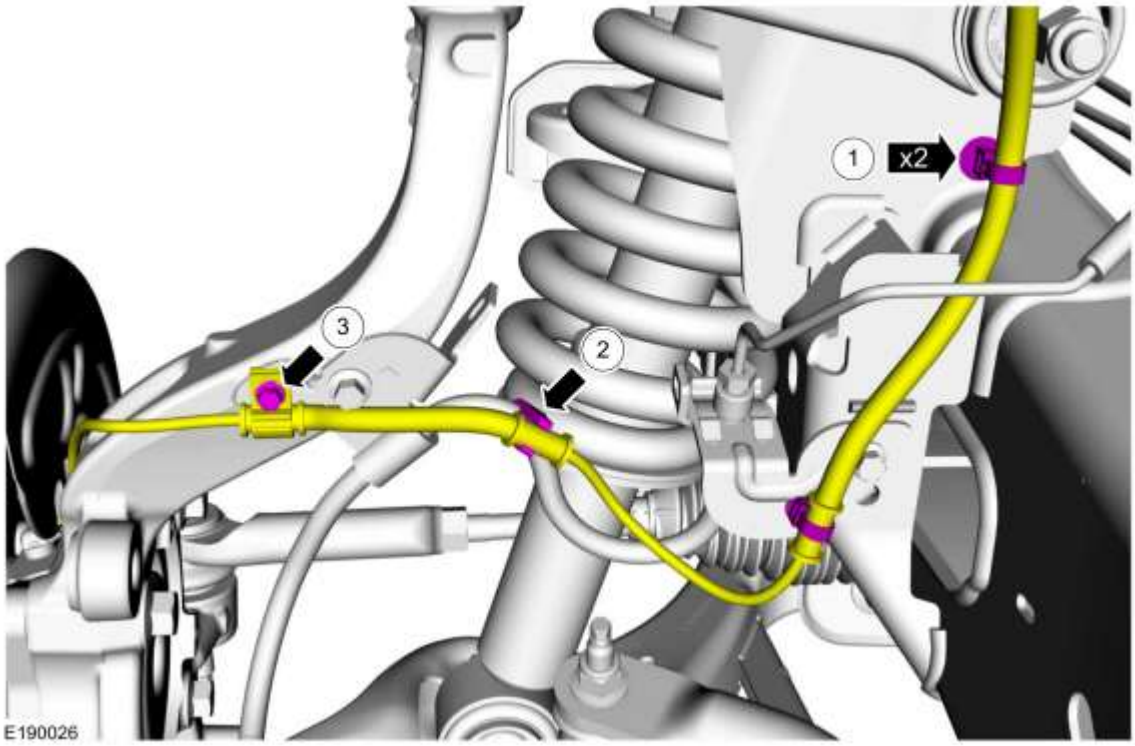
NOTE: *If the dust cap to bearing interface is damaged, damaged parts must be replaced.*

Install the dust cap.

Position the wheel speed sensor wire and clip the 2 wheel speed sensor wire retainers.

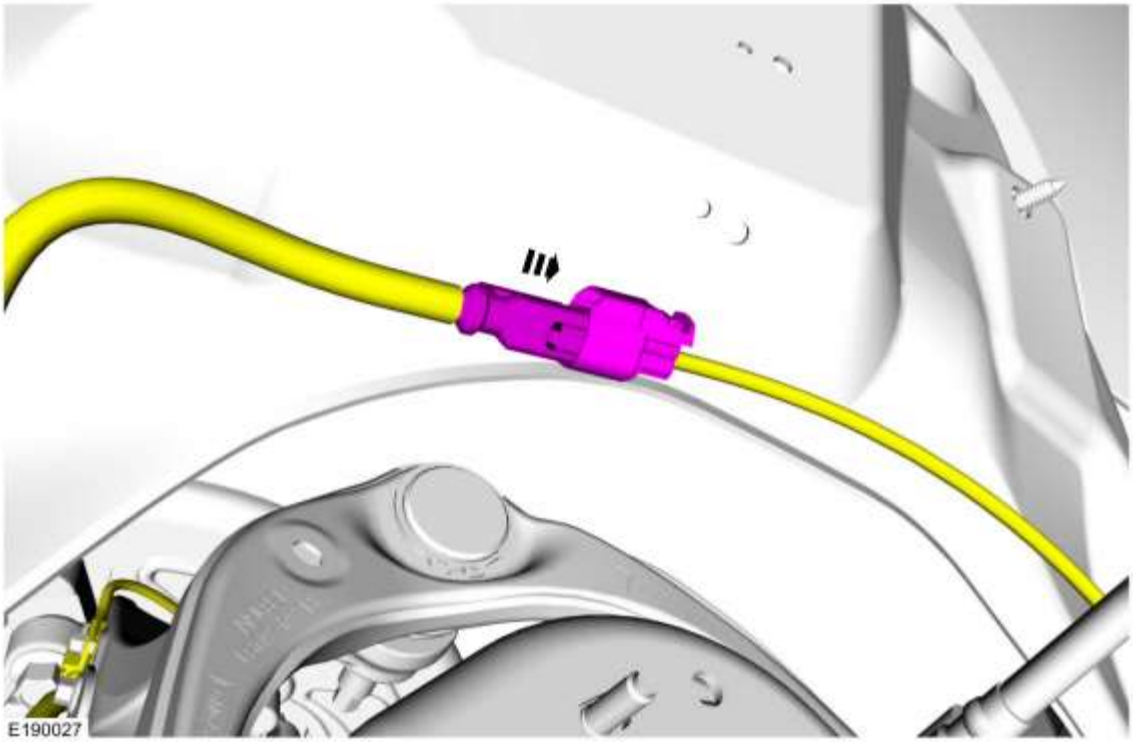
Clip the wheel speed sensor wire to the brake hose.

Install the wheel speed sensor wire bracket bolt.
Torque: 106 lb.in (12 Nm)



NOTE: *The wheel speed sensor electrical connector is located in the engine compartment secured to the fender apron.*

Connect the wheel speed sensor electrical connector.



Rear Shock Absorber Removal

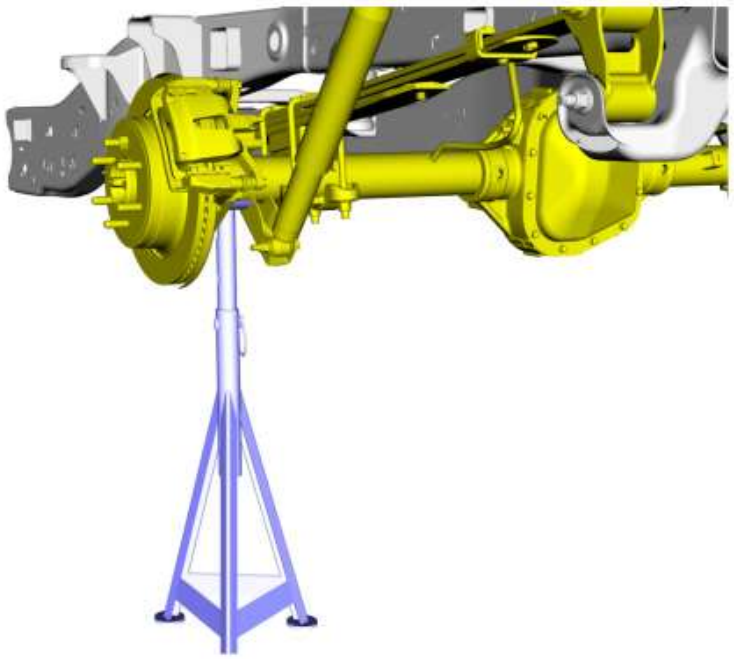
WARNING: Do not apply heat or flame to the shock absorber or strut tube. The shock absorber and strut tube are gas pressurized and could explode if heated. Failure to follow this instruction may result in serious personal injury.

WARNING: Keep all body parts clear of shock absorbers or strut rods. Shock absorbers or struts can extend unassisted. Failure to follow this instruction may result in serious personal injury.

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.*

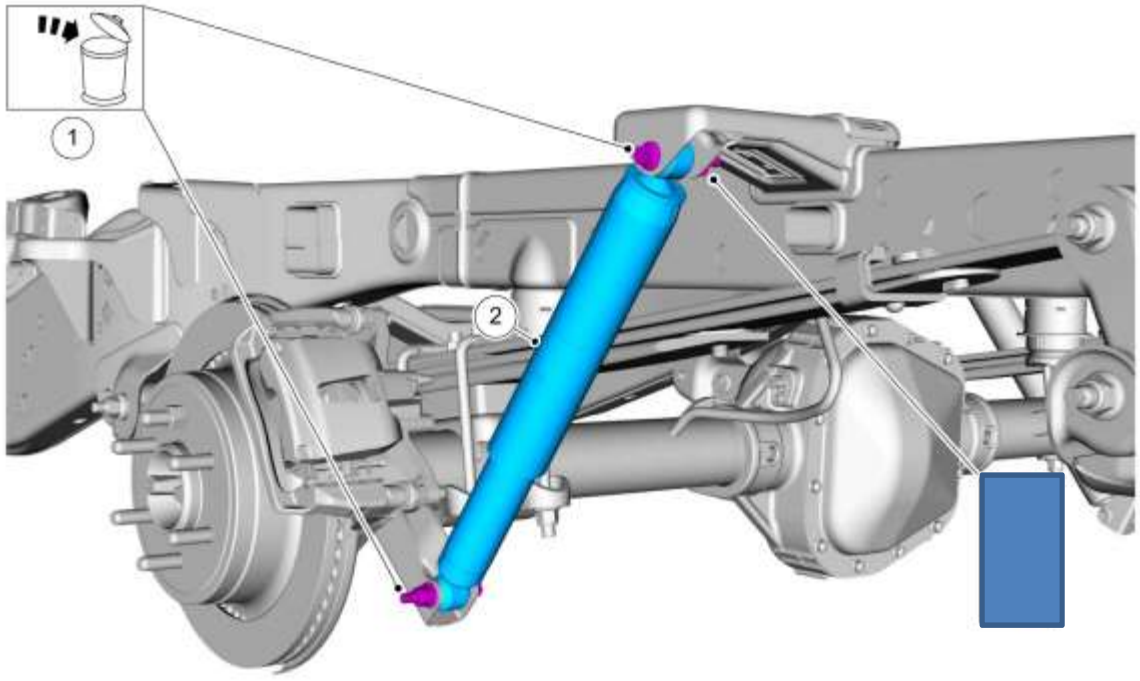
Support the rear axle assembly.



E192663

Remove and discard the rear shock absorber upper and lower bolts and nuts.
Torque: 66 lb.ft (90 Nm)

Remove the rear shock absorber.



E271340

Installation

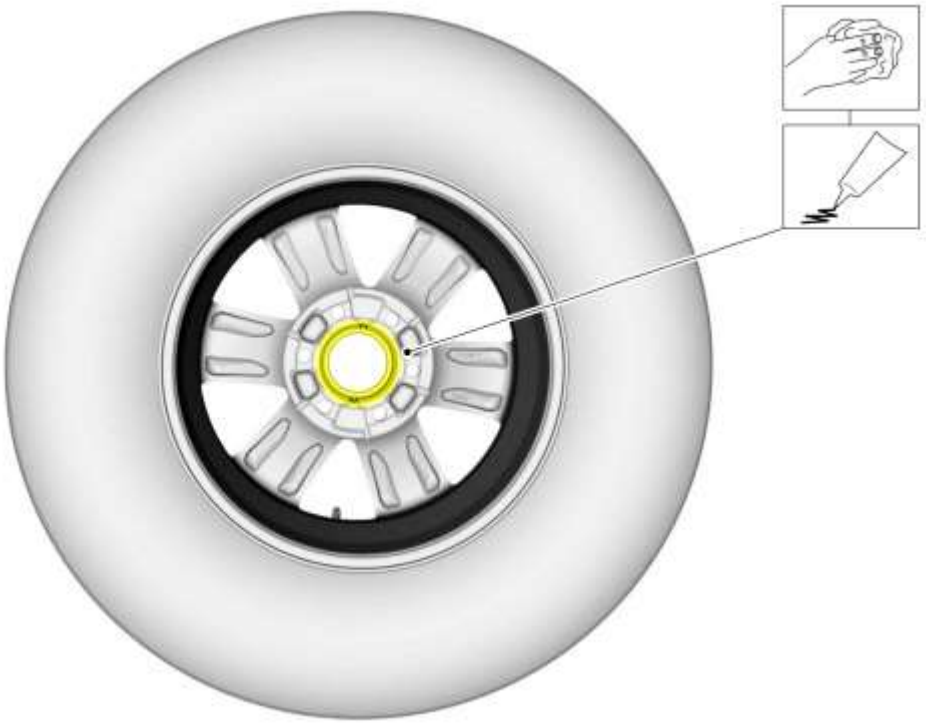
To install, reverse the removal procedure. (conventional 12mm nuts used all 4 positions)

Tire and wheel installation

WARNING: When a wheel is installed, always remove any corrosion, dirt or foreign material present on the mounting surface of the wheel and the mounting surface of the wheel hub, brake drum or brake disc. Make sure that any fasteners that attach the rotor to the hub are secured so they do not interfere with the mounting surfaces of the wheel. Failure to follow these instructions when installing wheels may result in the wheel nuts loosening and the wheel coming off while the vehicle is in motion, which could result in loss of control, leading to serious injury or death to vehicle occupant(s).

NOTICE: Make sure to apply a thin coat of anti-seize lubrication only to the interface between the wheel pilot bore and the hub pilot. Do not allow the anti-seize to make contact with the wheel-to-brake disc/drum mounting surface, wheel studs, wheel nuts, brake pads or brake disc friction surfaces or damage to components may occur.

Clean the mounting surfaces. Apply anti-seize lubrication.
Material: Motorcraft® High Temperature Nickel Anti-Seize Lubricant / XL-2



E190251

NOTE: *Only tighten the nuts finger tight at this stage.*

Install the wheel and tire and install the wheel nuts.

E250927

WARNING: Retighten wheel nuts within 160 km (100 mi) after a wheel is reinstalled. Wheels can loosen after initial tightening. Failure to follow this instruction may result in serious injury to vehicle occupant(s).

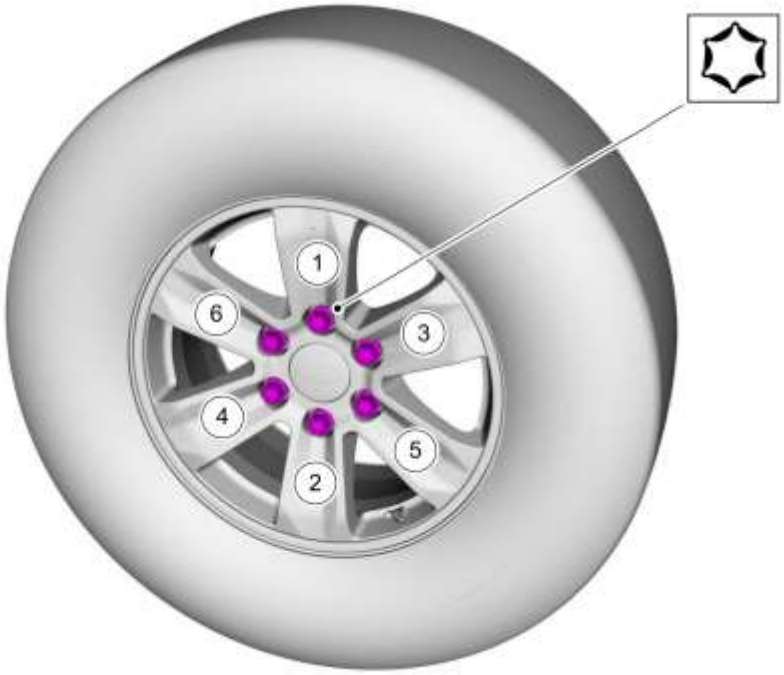
NOTICE: Failure to tighten the wheel nuts in a star/cross pattern can result in high brake disc runout, which accelerates the development of brake roughness, shudder and vibration.

NOTE: *The wheel nut torque specification is for clean, dry wheel stud and wheel nut threads.*

NOTE: *Use metric hexagonal socket.*

NOTE: *Final tightening to be performed with vehicle resting on tires.*

Tighten the wheel nuts
Torque: 150 lb.ft (204 Nm)



E190252

Check alignment, adjust as necessary.

Cruise Control Radar Alignment (if equipped)

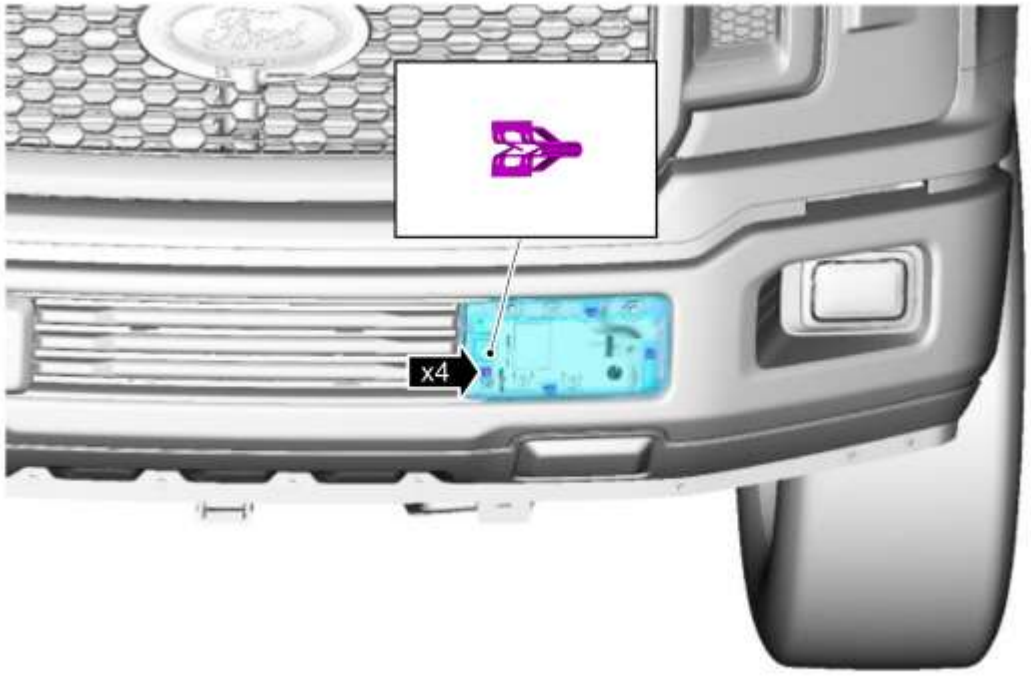
Adjustment

Vertical Alignment

NOTE: *In order to align the CCM, the front bumper trim panel must be removed to access the sensor and the vehicle must be in a wheel alignment bay station so that the vehicle is level.*

NOTE: *Damage to the CCM bracket may affect correct alignment. When aligning the CCM, inspect the CCM bracket for damage and repair as necessary before carrying out the alignment procedure.*

Remove the front bumper trim panel.



E263322

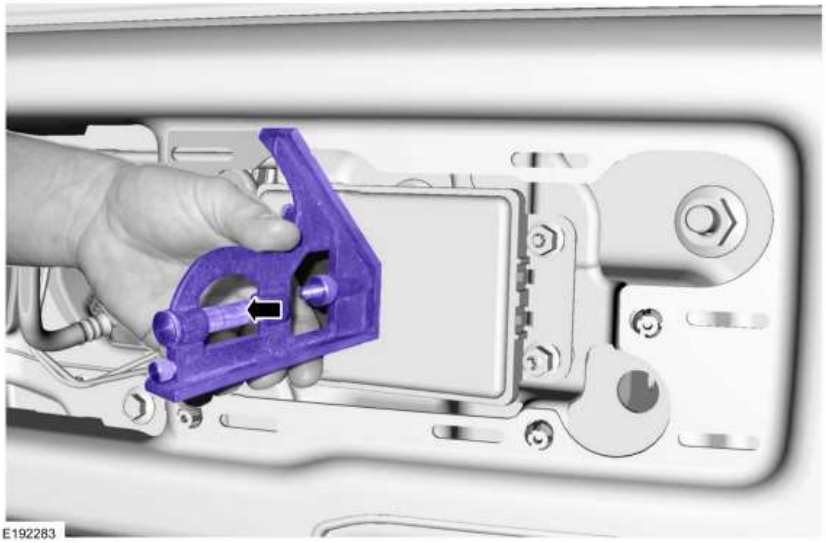
Place the vehicle on a wheel alignment bay station.

Locate the CCM alignment screws.

E263323

NOTE: *Typical application shown.*

Place a combination square level on the face of the CCM and check the alignment.



Keeping the combination square level on the face of the CCM, adjust the pitch by using an E6 Torx® socket to adjust the screws until the CCM is vertical and level.

Install the front bumper trim panel.

Horizontal Alignment

NOTE: *The horizontal alignment for the CCM is a software calibration that checks that the radar is pointed straight. No manual adjustment is needed for this procedure. The scan tool calibrates the CCM through the CCM procedure in programmable parameters.*

NOTICE: The vehicle's engine must be running during the horizontal alignment procedure. Failure to leave the engine running throughout the entire procedure results in the cancellation of the alignment procedure and the system remains non-functional.

Start the engine.

NOTE: *DTCs in the ABS and PCM modules can prevent the calibration from completing.*

Follow the diagnostic scan tool on-screen instructions to carry-out the CCM calibration procedure

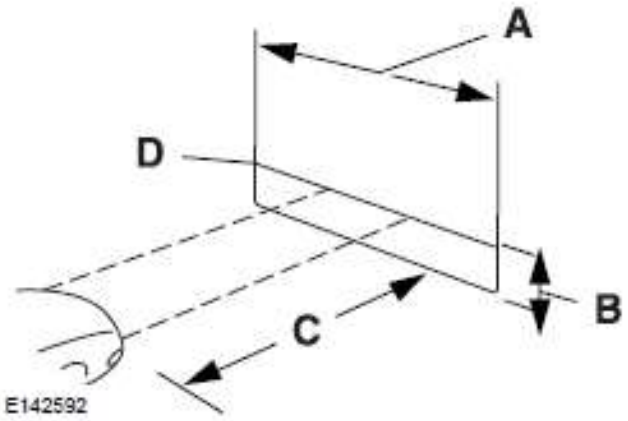
Aim headlights

ADJUSTING THE HEADLAMPS

Vertical Aim Adjustment

The headlamps on your vehicle are properly aimed at the assembly plant. If your vehicle has been in an accident, contact an authorized dealer to check and realign your headlamps.

Headlamp Aiming Target



A	8 feet (2.4 meters).
B	Center height of lamp to ground.
C	25 feet (7.6 meters).
D	Horizontal reference line.

Vertical Aim Adjustment

1. Park your vehicle directly in front of a wall or screen on a level surface, approximately 25 ft (7.6 m) away.

2. Measure the height from the center of your headlamp (indicated by a 3.0 millimeter circle on the lens) to the ground and mark an 8 ft (2.4 m) horizontal reference line on the vertical wall or screen at this height (a piece of masking tape works well).

Note: *To see a clearer light pattern for adjusting, you may want to block the light from one headlamp while adjusting the other.*

3. Switch on the low beam headlamps to illuminate the wall or screen and open the hood. Cover one of the headlamps so no light hits the wall.

E167358

4. **For halogen or LED headlamps:** On the wall or screen you will observe a light pattern with a distinct horizontal edge toward the right. If this edge is not at the horizontal reference line, you will need to adjust the beam so the edge is at the same height as the horizontal reference line.

E163806

5. Locate the vertical adjuster on each headlamp. Use a #2 Phillips screwdriver to turn the adjuster either counterclockwise or clockwise in order to adjust the vertical aim of the headlamp.
6. Repeat Steps 3 through 7 to adjust the other headlamp.
7. Close the hood and turn off the lamps.

Horizontal Aim Adjustment

Horizontal aim is not required for this vehicle and is not adjustable.

Torque specifications

Front stabilizer link upper nut *Torque*: 59 lb.ft (80 Nm)

Upper ball joint nut *Torque*: 46 lb.ft (63 Nm)

Brake hose bracket bolt *Torque*: 22 lb.ft (30 Nm)

Tie rod end nut *Torque*: 76 lb.ft (103 Nm)

Axle nut *Torque*: 30 lb.ft (40 Nm)

Wheel speed sensor wire bracket bolt *Torque*: 106 lb.in (12 Nm)

Rear shock absorber upper and lower bolts and nuts *Torque*: 66 lb.ft (90 Nm)

Wheel nuts *Torque*: 150 lb.ft (204 Nm)

Front shock upper nuts *Torque:* 24 lb.ft (33 Nm)

Front shock lower bolts *Torque:* 50 lb.ft (68 Nm)