F1224 Installation Instructions
2018-2023 Ford Expedition (Including CCD)
2" Strut / Preload Spacer Front Lift / 1-1/4" Rear Strut Spacer Lift System

Read and understand all instructions and warnings prior to installation of product and operation of vehicle.

Zone Offroad Products recommends this system be installed by a professional technician. In addition to these instructions, professional knowledge of disassembly/ reassembly procedures and post installation checks must be known. Minimum tool requirements include the following: Assorted metric and standard wrenches, hammer, hydraulic floor jack and a set of jack stands. See the "Special Tools Required" section for additional tools needed to complete this installation properly and safely.

» Product Safety Warning

Certain Zone Suspension Products are intended to improve off-road performance. Modifying your vehicle for off-road use may result in the vehicle handling differently than a factory equipped vehicle. Extreme care must be used to prevent loss of control or vehicle rollover. Failure to drive your modified vehicle safely may result in serious injury or death. Zone Offroad Products does not recommend the combined use of suspension lifts, body lifts, or other lifting devices.

You should never operate your modified vehicle under the influence of alcohol or drugs. Always drive your modified vehicle at reduced speeds to ensure your ability to control your vehicle under all driving conditions. Always wear your seat belt.

» Technical Support

www.zoneoffroad.com may have additional information about this product including the latest instructions, videos, photos, etc.

Send an e-mail to ***tech-zone@ridefox.com*** detailing your issue for a quick response.

888.998.ZONE Call to speak directly with Zone tech support.

» Pre-Installation Notes

1. Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.
2. Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
3. Larger rim and tire combinations may increase leverage on suspension, steering, and related components. When selecting combinations larger than OE, consider the additional stress you could be inducing on the OE and related components.
4. Post suspension system vehicles may experience drive line vibrations. Angles may require tuning, slider on shaft may require replacement, shafts may need to be lengthened or trued, and U-joints may need to be replaced.
5. Secure and properly block vehicle prior to installation of Zone Offroad Products. Always wear safety glasses when using power tools.
6. If installation is to be performed without a hoist, Zone Offroad Products recommends rear alterations first.
7. Due to payload options and initial ride height variances, the amount of lift is a base figure. Final ride height dimensions may vary in accordance to original vehicle attitude. Always measure the attitude prior to beginning installation.

Difficulty Level

easy 1 (2) 3 4 5 difficult

Estimated installation: 2-3 hours

Special Tools Required

Strut Compressor

Cut Off Wheel

Basic Hand Tools

Special Service Tool: 204-592 Separator

Tie Rod End Separator

Tire/Wheel Fitment

- 285/50R22 on Stock 22” Wheels
- 285/55R20 on 20x9 with 5” BS
- 295/55R20 on 20x9 with 5.75” BS (Running boards removed)

F1224 Kit Contents

Qty	Part
2	Front Strut Spacer
2	Front Preload Spacer
1	Bolt Pack 475
6	10mm-1.50 x 35mm Bolt
12	10mm-1.50 Prevailing Torque Nut
6	3/8" USS Washer
6	3/8" SAE Washer
1	Driver Front CCD Sensor Bracket
1	Passenger Front CCD Sensor Bracket
1	Driver Rear CCD Sensor Bracket
1	Passenger Rear CCD Sensor Bracket
2	Rear Tall Strut Spacer
1	Bolt Pack 629
6	10mm-1.50 Prevailing Torque Nut
6	3/8" USS Washer

IMPORTANT

It is required that ride height measurements be taken before and after installation. Measure from the **WHEEL AXLE CENTER** up to the **FENDER LIP** of the wheel opening. Do this for all 4 wheels. Record measurements below.**

BEFORE:

*LF*_____ *RF*_____ *LR*_____ *RR*_____

AFTER:

*LF*_____ *RF*_____ *LR*_____ *RR*_____

***These ride heights will be required if you have any ride height concerns after installation. Please be prepared to provide these to Technical Support.*

INSTALLATION INSTRUCTIONS

Pre-Installation Notes

1. If desired the preload spacer can not be installed, this will result in around 3/4" lower ride height than the advertised 2" front lift.
2. Wider tires on stock wheels will need clearance checked to the steering knuckle / UCA.
3. To aid in alignment, Alignment Cam kits are recommended such as MOOG K100010.
4. Will fit models with 4 Auto that do not have the 4WD actuator hub assembly.

Front Disassembly

1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Raise the front of the vehicle and support with jack stands at the frame rails.
3. Remove the front wheels.
4. Disconnect the power steering control module connector (EPAS Electronic Power Assist Steering) to avoid arching of the contacts in the internal power relay from a hammer blow or impact wrench.
5. Disconnect the driver's and passenger's side front sway bar links from the LCA.
   Figure 1

Figure 1

Step 5 Note:

Do not use power tools to remove the stabilizer bar link nut. Damage to the stabilizer bar link ball joint or boot may occur.

Complete this portion of the installation on one side at a time

6. Disconnect the front brake line and ABS line from the steering knuckle. **Figure 2**

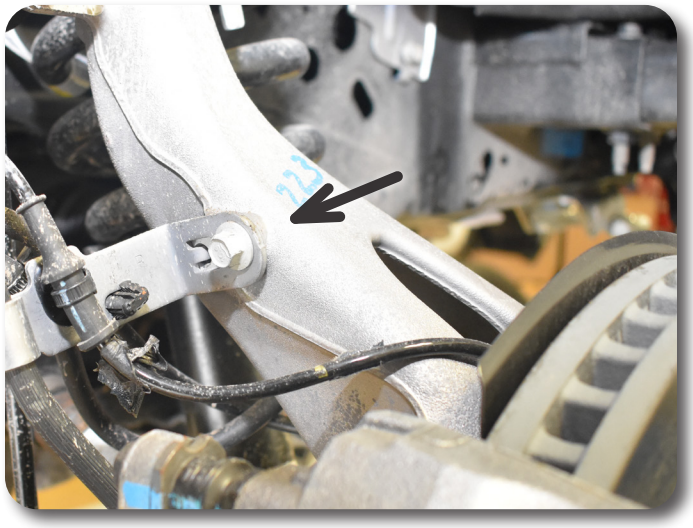

Figure 2

7. Disconnect the front brake line bracket from the frame. **Figure 3**

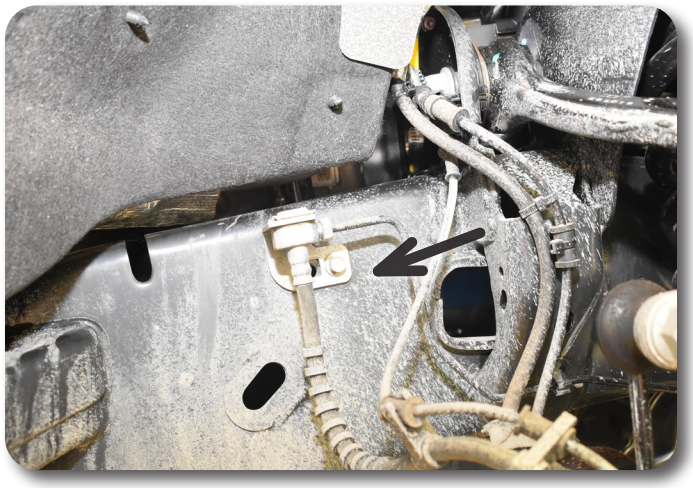

Figure 3

8. Remove the CV retaining nut. **Figure 4**

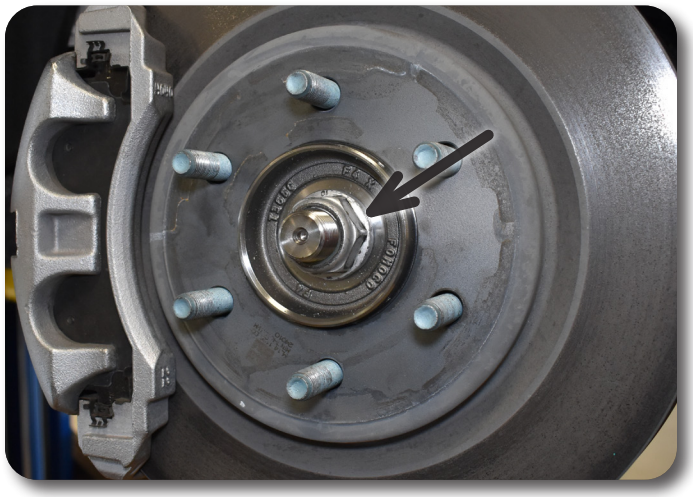

Figure 4

9. Remove the steering tie rod end nut from the tie rod end at the steering knuckle. Avoid hitting the aluminum steering knuckle, use appropriate tool to remove tie rod end from steering knuckle. Take care not to strike the tie rod end, or damage the threads Figure 5

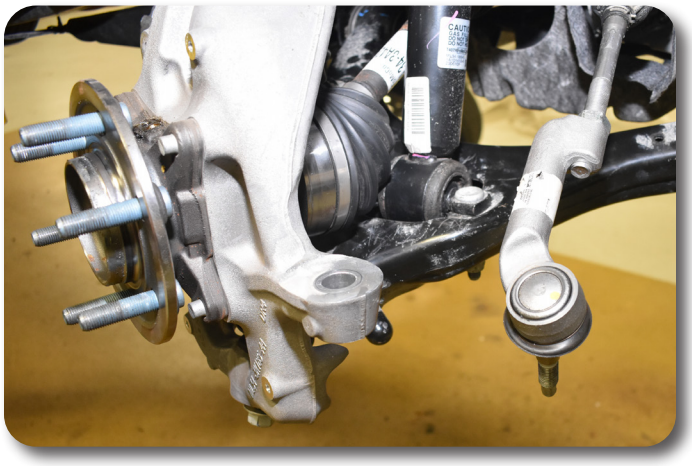

Figure 5

Step 9 Note:

Use a tie rod end separator to release the taper from the steering knuckle.

10. Unseat the upper ball joints from the knuckle, refrain from hitting the aluminum steering knuckle, use appropriate tool to separate ball joints, avoid damaging the threads. Figure 6 Allow the knuckle to rest back away from the front strut.

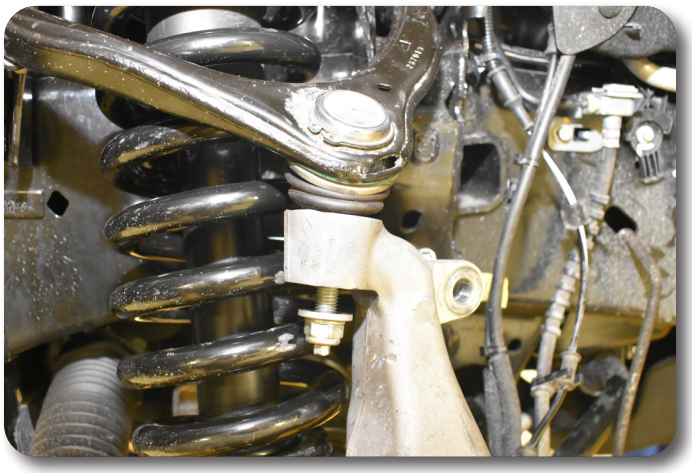

Figure 6

Step 10 Note:

Use Special Service Tool: 204-592 Separator to release the taper from the steering knuckle.

11. If equipped, Disconnect the CCD sensor wires from the connectors on the frame and lower control arm. The wires need to be removed such that the strut can be removed from the vehicle and the wires are not over extended when the lower control arm is dropped to remove the strut. Figure 7A, 7B

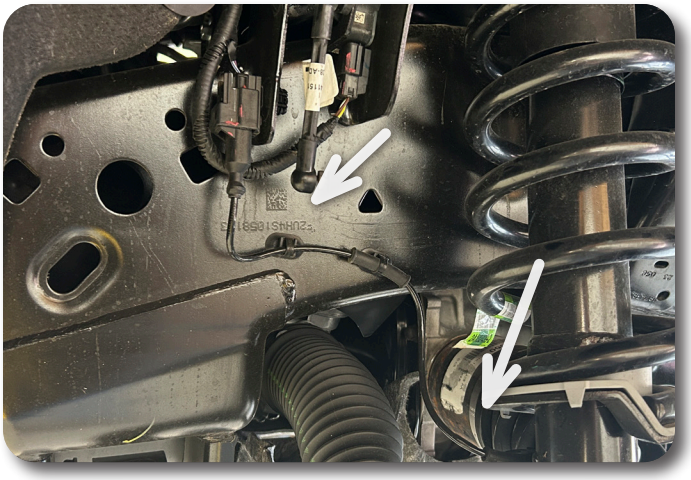

Figure 7A

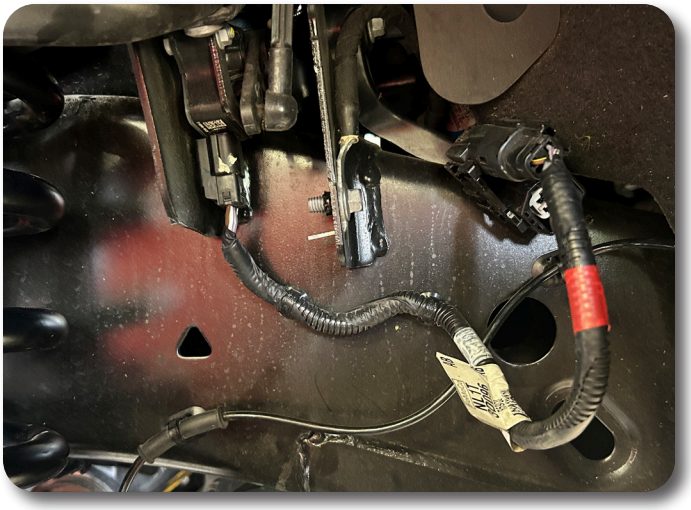

Figure 7B

12. Support the lower control arm with an appropriate jack. Remove the three upper strut mounting nuts at the frame. Figure 8 DO NOT remove the center strut rod nut. Discard nuts.

Figure 8

13. Remove the lower strut mount nuts at the lower control arm. Lower the control arm and remove the strut from the vehicle.

Strut Spacer Installation

14. Due to lower bar pin angle in the strut, the top plate of the strut assembly must be rotated 180 degrees. Place alignment marks on the upper strut mount, isolator, spring, strut body and lower coil seat for reference when the strut is assembled. Compress the coil spring slightly and rotate the upper plate 180 degrees. Figure 9A, B, C.

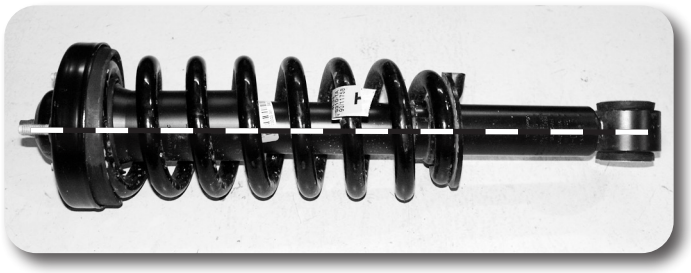

Figure 9A

Figure 9B

Figure 9C

Caution *Coil Spring is under extreme pressure. Improper removal/installation of coil spring could result in serious injury or death. Use only a high-quality spring compressor and carefully read and follow the manufacturer's instructions.*

15. Using an appropriate strut compressor, compress the coil spring and remove the upper strut nut **Figure 10**. Remove the strut and upper strut mount/isolator from the coil spring.

Figure 10

16. Working on the upper strut mount, remove the rubber isolator **Figure 11A** from the strut mount and install the provided preload ring, **Figure 11B**. Reinstall the rubber isolator and line up the align marks made earlier.

Figure 11A

Figure 11B

17. Rotate the ***only*** top plate 180 degrees. This will allow the lower bar pin to reassemble in the lower control arm smoothly. Note the before and after strut pictures.
18. Reassemble the strut. Make sure to line up all of the alignment marks other than the top plate will be rotated 180 degrees. Fasten the strut rod with the original nut. Torque the strut nut to 41 ft-lbs.
19. Mark and cut the three top plate factory studs on the strut to 3/4". **Figure 12A & B**

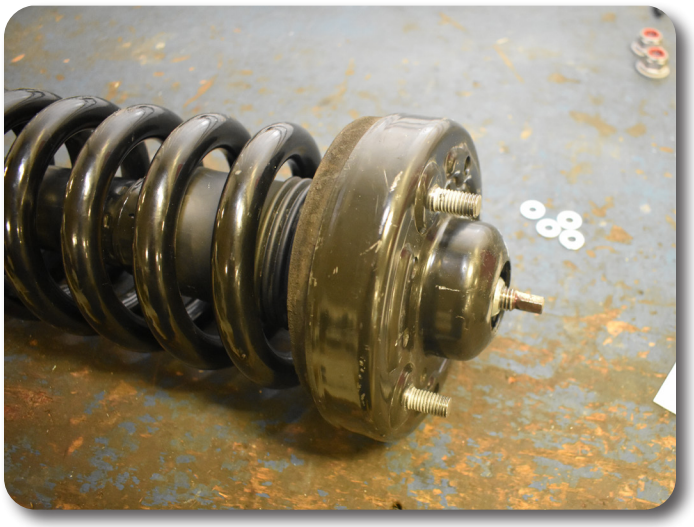

Figure 12A

Step 19 Note:

Run a 10mm-1.50 die down the threads of the studs after they have been cut to clean up the threads. If you do not have a die, thread the factory 10mm strut nuts on the studs before cutting them. After the studs are cut, when removing the nuts they will help to clean up the threads as they are unthreaded.

Figure 12B Note:

Shown with strut spacer installed. The studs must sit flush / below the surface of the strut spacer.

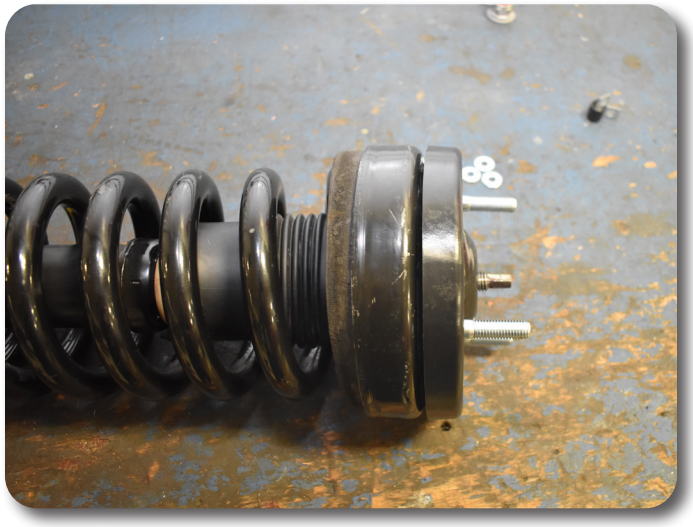

Figure 12B

Step 20 Note:

Hardware for the strut spacer is in Bolt Pack 475

20. Install the 10mm bolts through the hex holes on the bottom of the strut spacer. Attach strut spacer on top of the factory strut, the strut spacer will only install one way. Tighten to the top plate using the provided 10mm nuts and 3/8" SAE washer (smaller diameter) to **35 ft-lbs.** Figure 13A, B, C, D. DO NOT EXCEED 35 ft-lbs when tightening the spacer to the strut. DO NOT USE an impact to tighten the spacer to the strut.

Figure 13A

Figure 13B

Figure 13C

Fig 13C Note

Modified strut assembly on top, stock strut on bottom, notice lower bar pin angle is the same.

Figure 13D

Figure 13D Note:

Verify the studs are cut flush / below the surface of the strut spacer.

» Front Strut Installation

21. Install the modified strut assembly into the upper frame mount by aligning the studs in the new spacer with the original mounting holes. Loosely fasten the strut with the provided 10mm nuts and 3/8" USS washers (Larger diameter).
22. Install the bottom of the strut back into the original mount with the factory hardware, torque to 66 ft-lbs. With the lower hardware installed, go back and torque the new upper strut hardware to **35 ft-lbs**. DO NOT EXCEED 35 ft-lbs when tightening the strut to the frame. DO NOT USE an impact to tighten the strut to the frame.
23. With the strut installed, reconnect the knuckle to the upper ball join. Replace with factory hardware. While connecting the upper ball joint, be sure that the CV shaft properly aligns into the hub. Figure 14 Torque the upper ball joint nut to 46 ft-lbs.

Step 21 Note:

Hardware for the strut spacer is in Bolt Pack 475

Figure 14

» Front Installation

24. Be sure the CV is properly seated in the hub. Replace the CV nut with factory hardware and torque nut to 30 ft-lbs. Reinstall the hub dust cap by tapping in place with a small hammer. *Note: Trucks that do NOT have the IWE / 4wd actuator hub assembly, that DO have the large diameter axle nut, torque the nut to 221 ft-lbs.*
25. Reconnect the brake line and ABS line to the steering knuckle and replace with factory hardware. Torque brake line bolt to 22 ft-lbs and ABS line bolt to 106 in-lbs.
26. Attach the steering tie rod end to the steering knuckle and replace with factory hardware. Torque to 76 ft-lbs.
27. With both sides complete, reconnect the sway bar links to the knuckle and replace with factory hardware. Torque to 59 ft-lbs.

Step 27 Note:

Do not use power tools to attach the stabilizer bar link nut. Damage to the stabilizer bar link ball joint or boot may occur.

» Front Sensor Bracket Installation

28. Remove the factory CCD Sensor Bracket from the front UCA and sensor linkage, retain the OE hardware attaching the sensor to the UCA and the linkage to the bracket. Figure 15

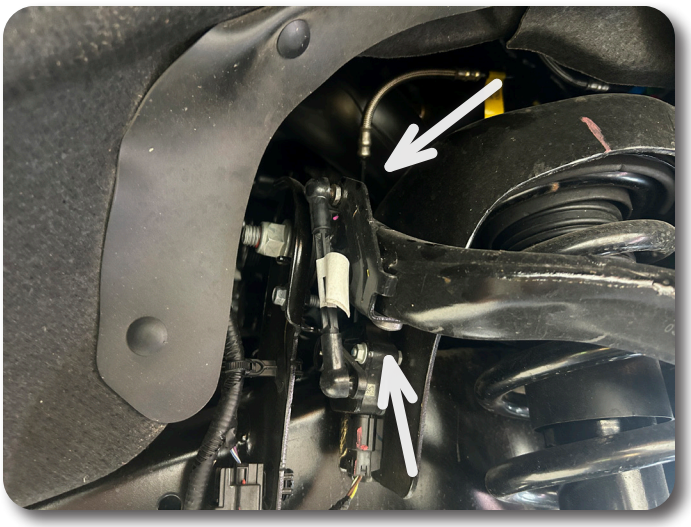

Figure 15

29. Install the new provided CCD Relocation sensor bracket in the same orientation as the factory bracket using the OE hardware to attach the sensor bracket to the UCA and attach the sensor linkage to the bracket. Tighten the bolt to the UCA to 177 in-lbs. Figure 16

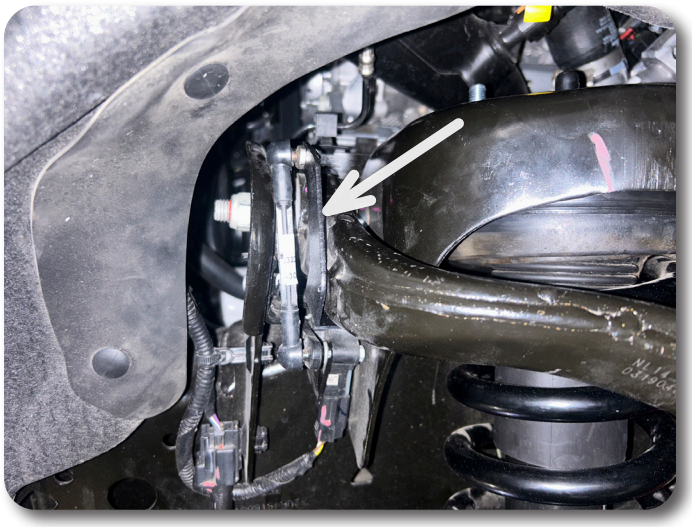

Figure 16

Final Front Installation

30. Install the wheels and lower the vehicle to the ground.
31. Torque lug nuts to 150 ft-lbs in a crossing pattern.
32. Check all hardware for proper torque.

Rear Disassembly

1. Park the vehicle on a clean, flat surface and block the front wheels for safety.
2. Raise the rear of the vehicle and support with jack stands at the frame rails.
3. Remove the rear wheels.

Complete this portion of the installation on one side at a time

4. Remove the sensor linkage from the bracket attached to the rear lower control arm. Remove the sensor bracket bolt from the lower control arm. Discard the sensor bracket. Figure 17

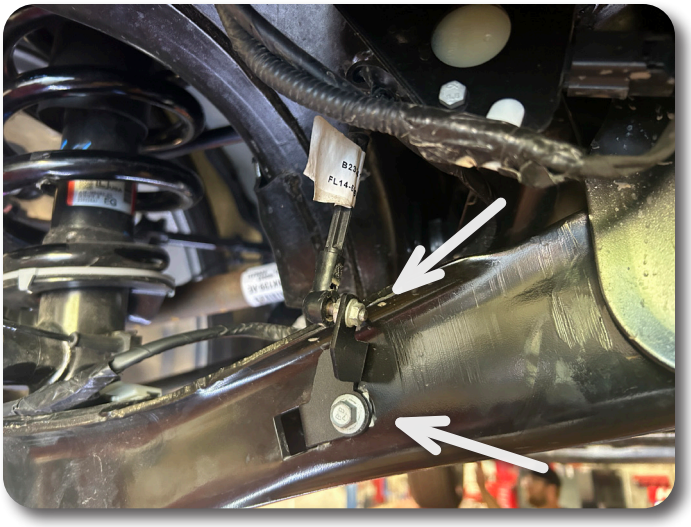

Figure 17

Step 6 Note:

Connectors may be hidden behind fender well liners.

5. Remove the sensor bracket attaching it to the lower control arm.
6. Disconnect the ABS and CCD sensor wires from the frame connectors and rear lower control arm. The wires need to be removed such that the strut can be removed from the vehicle and the wires are not over extended when the rear lower control arm is dropped to remove the strut. Figure 18A, B

Figure 18A

Figure 18B

7. To aid in removing the strut, disconnect the rear sway bar link from the sway bar on each side of the vehicle. Retain hardware for later installation. Figure 19

Figure 19

8. Ensure the wheel end knuckle of the vehicle is supported with a jack. To aid in removing the strut, loosen but do not remove the 2 frame mounted trailing arm bolts. Figure 20

Step 7 Note:

Use the hex-holding feature to prevent the stud from turning while removing the nut..

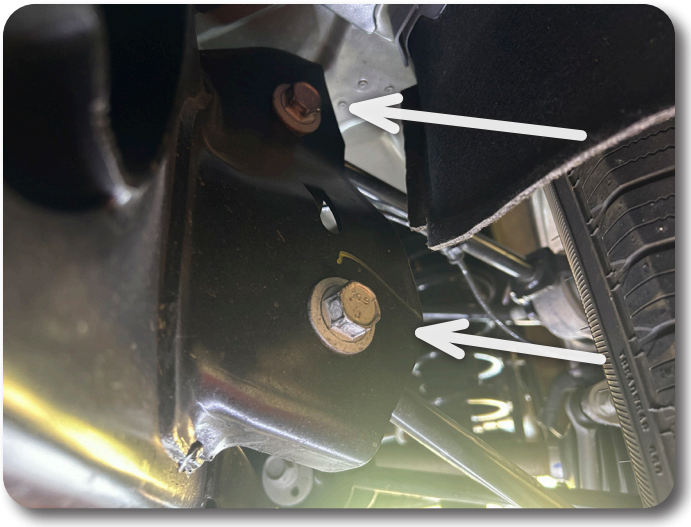

Figure 20

9. Remove the OE lower strut bolt from the lower control arm. **Figure 21**

Figure 21

10. Remove the OE frame mounted lower control arm bolt. **Figure 22A, B**

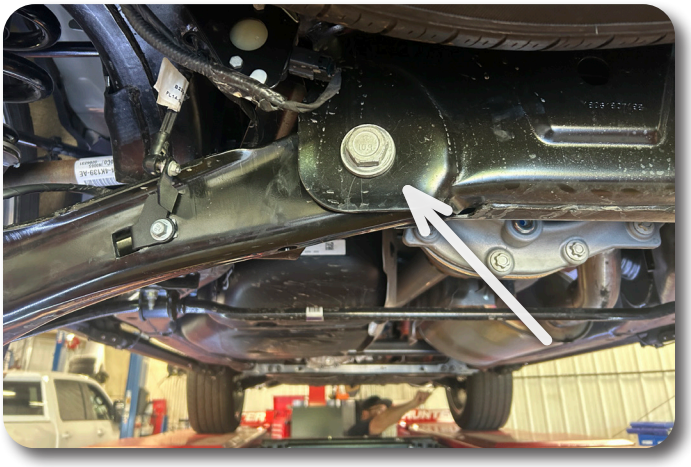

Figure 22A

Figure 22B

11. Swing the lower control arm down and out of the way for rear strut removal. Figure 23

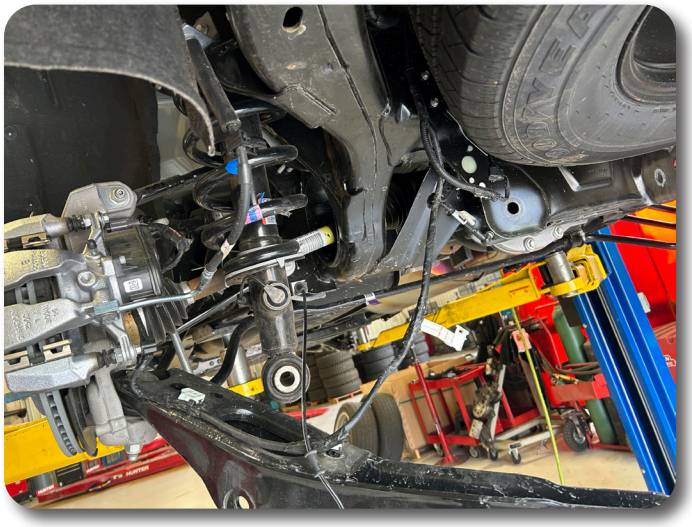

Figure 23

12. Remove the 3 frame mounted upper strut mount nuts. Figure 24

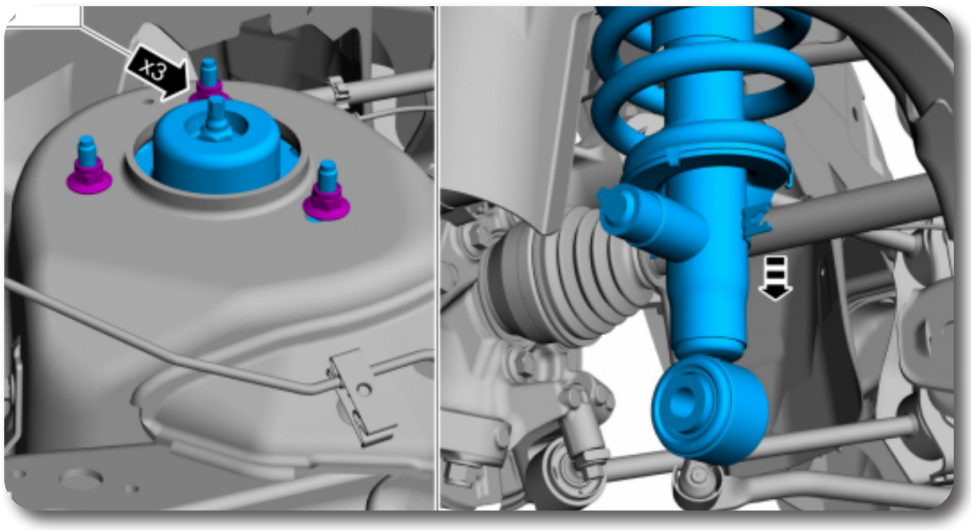

Figure 24

Step 13 Note:

Although not required, the ball joint end of the lower control arm attached to the outer knuckle can be removed. This will allow the entire lower control arm to be removed to aid in removing the strut.

13. Remove the OE strut from the vehicle. Ensure the CCD module on the side of the strut does not hit anything and the wire harness is removed with the strut.

» Rear Strut Spacer Installation

14. Due to the CCD module on the strut, the top plate of the strut assembly must be rotated 180 degrees. Place alignment marks on the upper strut mount, isolator, spring, strut body and lower coil seat for reference when the strut is assembled. Compress the coil spring slightly and rotate the upper plate 180 degrees. Figure 25A, B, C. (***For Non-CCD version skip to step 15.)***

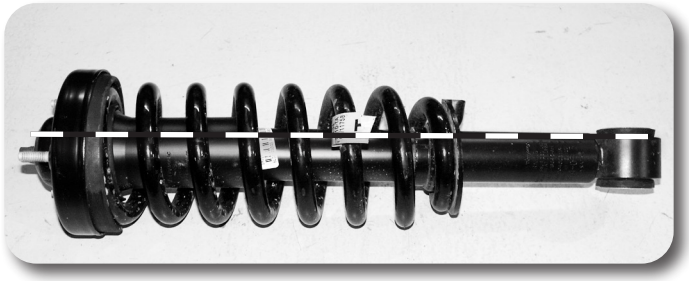

Figure 25A

Figure 25B

Figure 25C

15. For NON-CCD version Mark outside of your strut before removal. Fig. 25D

Figure 25D

16. With strut removed, rotate 180° so that the OUT is in, Install spacer and mark strut studs for trimming flush with top of spacer. Remove spacer, cut (3) strut studs as marked. Studs should be flush with top of spacer. Fig. 25E

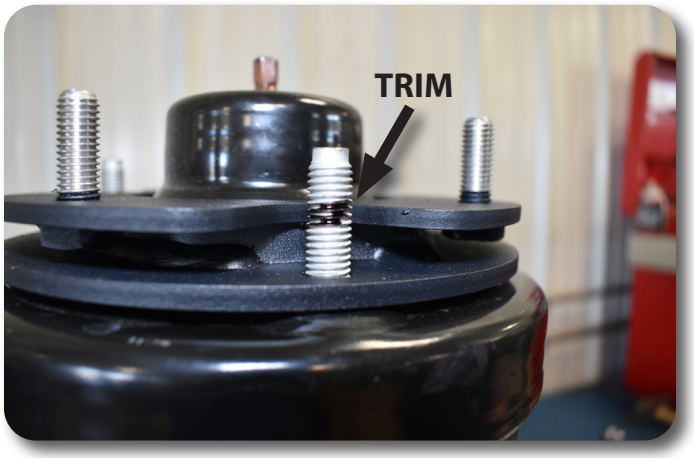

Figure 25E

17. Re-Install spacer with side marked outside to the inside. This is necessary to align the new spacer studs to the strut tower.

! Caution *Coil Spring is under extreme pressure. Improper removal/installation of coil spring could result in serious injury or death. Use only a high-quality spring compressor and carefully read and follow the manufacturer's instructions.*

18. Install the provided rear strut spacer using OE nuts to attach the strut spacer to the strut. Torque hardware to 30 ft-lbs.

» Final Rear Installation

19. Install the rear strut to the frame mount with the provided 10mm nuts and 3/8" USS washers. Torque hardware to 30 ft-lbs.
20. Attach the lower control arm to the frame using a OE bolt and flag nut. Snug up this hardware to 37 ft-lbs, but do not fully tighten this hardware at this time. Hardware will be fully torqued with the vehicle on the ground. Figure 26

Step 19 Note:

Hardware for the strut spacer is in Bolt Pack 629

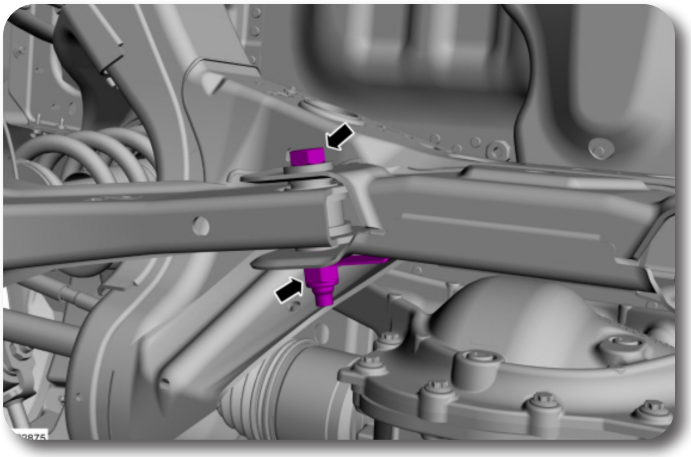

Figure 26

21. Attach the strut to the lower control arm using a OE bolt and nut. Snug up this hardware to 37 ft-lbs, but do not fully tighten this hardware at this time. Hardware will be fully torqued with the vehicle on the ground. **Figure 27**

Figure 27

22. Install the provided relocated sensor bracket to the lower control arm with a OE bolt. Tighten the bolt to 177 in-lbs. **Figure 28**

Figure 28

23. Install the sensor linkage to the relocated sensor bracket using a OE nut. Tighten the nut to 18 in-lbs. Figure 29

Figure 29

24. Install the sway bar link to the sway bar using a OE nut. Tighten the nut to 46 ft-lbs. Figure 30

Figure 30

Step 24 Note:

Use the hex-holding feature to prevent the stud from turning while tightening the nut..

25. Install the wheels and lower the vehicle to the ground.
26. Torque lug nuts to 150 ft-lbs in a crossing pattern.
27. Roll out the vehicle so that the suspension is sitting at the proper ride height.
28. Tighten the rear lower control arm to frame hardware to 166 ft-lbs.
29. Tighten the rear strut to lower control arm hardware to 406 ft-lbs.
30. Tighten the two per side frame mounted trailing arm bolts to 203 ft-lbs. Figure 31

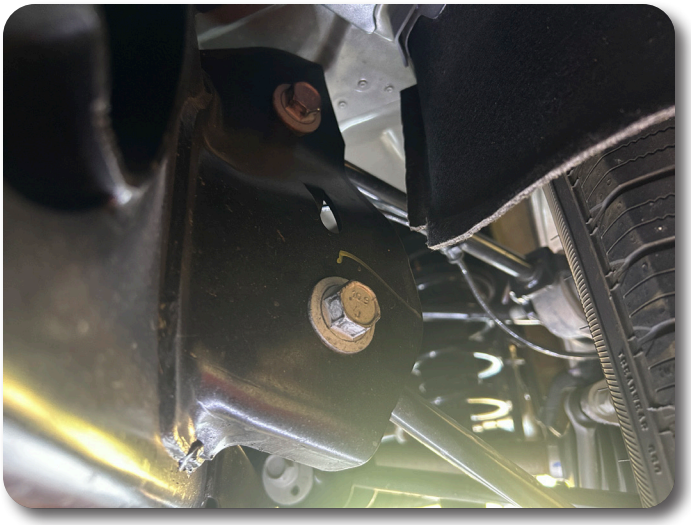

Figure 31

31. Check all hardware for proper torque.

Post-Installation Warnings

1. Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness. Check steering gear for clearance. Test and inspect brake system.

2. Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure.

3. Perform head light check and adjustment.

4. Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

» Final Assembly

1. If equipped, re-connect EPAS control module connector.
2. Check all hardware for proper torque.
3. Adjust head lights.
4. Check hardware after 500 miles.
5. The vehicle will need a complete front and rear end alignment.