



ATTENTION

OE STRUT STUD CUTTING WARNING

The factory studs on the top of the struts MUST be trimmed to be flush or below the top surface of the strut spacer part numbers 05113 and 05115.

Failure to trim these studs will result in broken strut top spacers.

Details about the strut stud trimming can be found in the attached instruction sheet.



F1221 Installation Instructions 2021-2025 Ford Bronco 2 Door / 4 Door 2" Strut Spacer / Spring Perch Lift Kit

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.
8. Highly recommended to install this kit with aftermarket upper control arms (ZONF2302).

Difficulty Level

easy 1 **2** 3 4 5 difficult

Estimated installation: 2-3 hours

Special Tools Required

Strut Compressor

Air Hammer (Recommended)

35mm Axle Nut Socket

27mm Socket

17mm Chrome / Thin Walled Socket

OTC 204-592 Ball Joint Separator (Recommended)

Tie Rod End Separator (Recommended)

Tire/Wheel Fitment

275/70 w/ stock 18" Outer Banks Wheels

275/80 w/ stock 17" Black Diamond Wheels

315/70 w/ stock 17" Sasquatch Wheels

285/70 w/ stock 17" Badlands Wheels

35" x 11.2" on 6" to 5" BS, 9" wide wheels

35" x 12.50" on 5-1/2" to 5" BS, 9" wide wheels

See more information at end of instructions.

BS = Backspacing

All tire/wheel fitment is with intrusion beams removed.

F1221 Kit Contents

Qty	Part
2	Front Upper Strut Spacer
2	Front Spring Perch Spacers
2	Front Bump Stop Extension
2	Rear Upper Strut Spacer
1	Bolt Pack 368
24	10mm-1.50 Prevailing Torque Nut, Clear Zinc
24	10mm Washer, Clear Zinc
6	10mm-1.50 x 45mm Bolt, Clear Zinc
6	10mm-1.50 x 50mm Bolt, Clear Zinc
1	Bolt Pack 1037
6	10mm Washer, Clear Zinc
6	M10-1.25 Prevailing Torque Nut, Clear Zinc

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. This kit is designed to lift the front of the vehicle 2" and rear 1". Can ONLY be used with yellow body (Bilstein model) struts.
2. CAN be used with Sasquatch Suspension Package vehicles.
3. CAN be used with Badlands Suspension Package vehicles.
4. CV axle nut may need to be loosened and tightened on the ground with the weight the vehicle.
5. Does not fit Bronco Sport models.

»» 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 driver's and passenger's side front sway bar links from the lower control arm. **Figure 1A** Another option is to remove the 2 bolts and 2 nuts attaching the sway bar to the frame on the driver and passenger while still leaving the sway bar links attached to the lower control arm **Figure 2B**. Allow the sway bar to rest out of the way for the front end disassembly. Thread locker will be required if disassembled from the mounts to the frame.

Step 4 Note:

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



Figure 1A

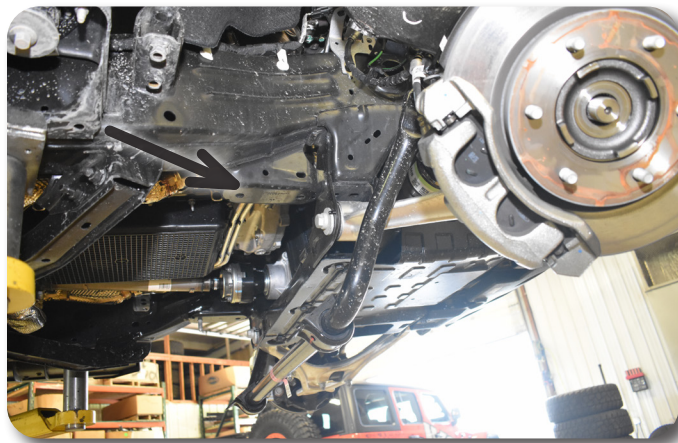


Figure 1B

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

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

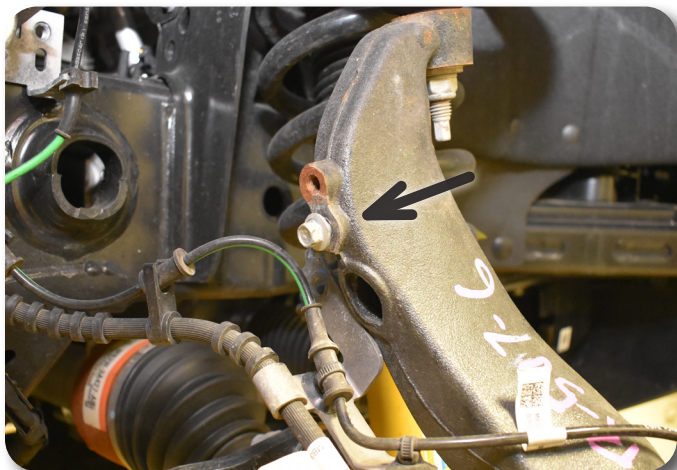


Figure 2

6. Disconnect the front brake line from the frame. **Figure 3**

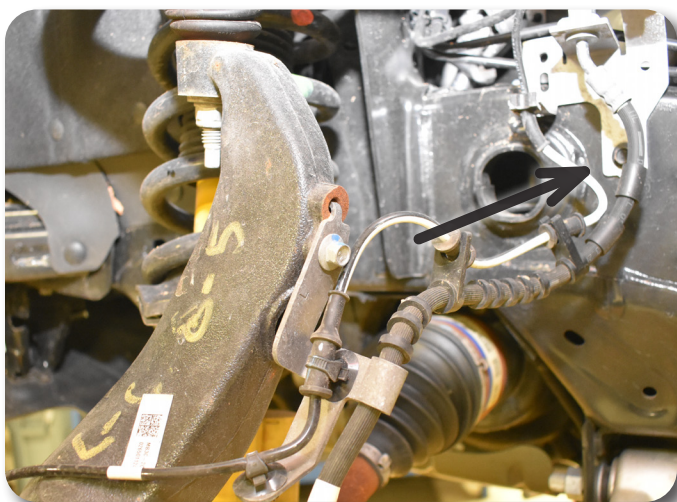


Figure 3

7. Remove the steering tie rod end nut from the tie rod end at the steering knuckle. Use a tie rod end remover to dislodge the tie rod end from the knuckle. Be careful not to damage the boot. **Figure 4** Remove the tie rod end from the knuckle.



Figure 4

8. Remove the upper ball joint nut and thread back on a couple of turns by hand. Use a ball joint separator tool to dislodge the upper ball joint from the knuckle (204-592 tool recommended). Be careful not to damage the boot. **Figure 5**
Remove the nut and remove the ball joint from the knuckle. Allow the knuckle to rest back away from the front strut.

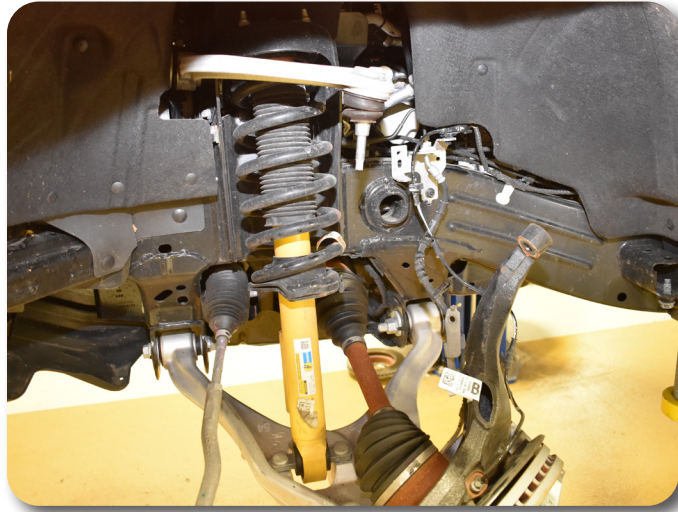


Figure 5

9. **Optional:** Remove the CV retaining nut. **Figure 6**

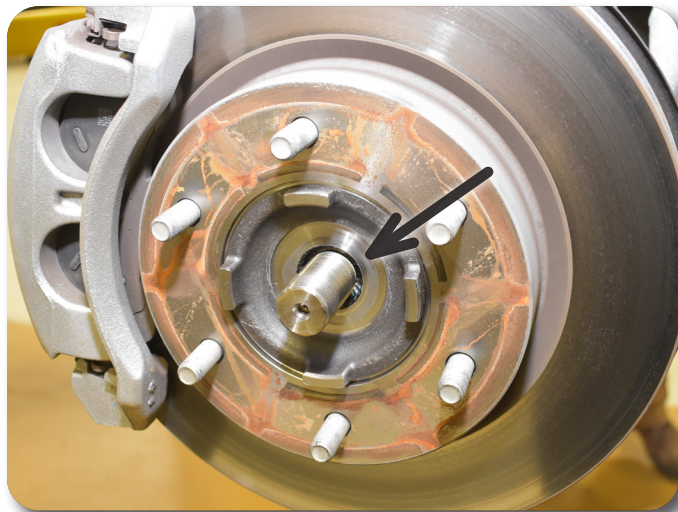


Figure 6

Step 10 Note:

Be careful not to hit the threads on the CV shaft

A punch and hammer can also be used to dislodge the CV shaft from the hub..

10. **Optional:** Use an air hammer to dislodge the CV shaft from the hub **Figure 7**. This step is optional, but will make it easier to remove the strut from the vehicle.

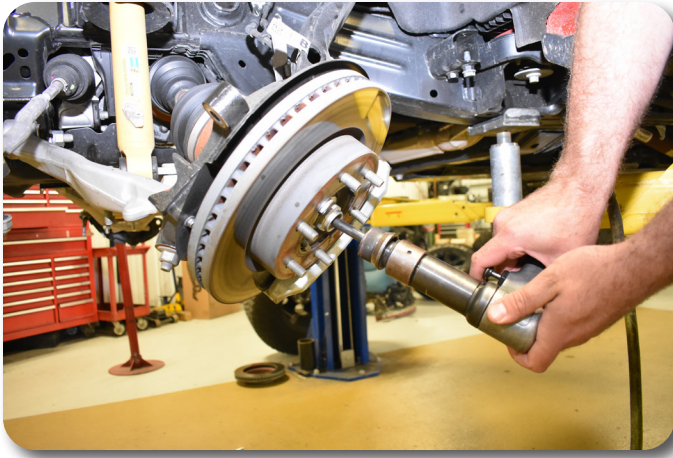


Figure 7

Step 11 Note:

Be sure to support the lower control arm / knuckle assembly when removing the strut.

11. Support the lower control arm with an appropriate jack. Remove the lower strut mount nuts at the lower control arm. **OPTIONAL:** This can be done to make the strut easier to be removed. Use an air hammer to dislodge and remove the strut studs in the lower strut mounts Figure 8.

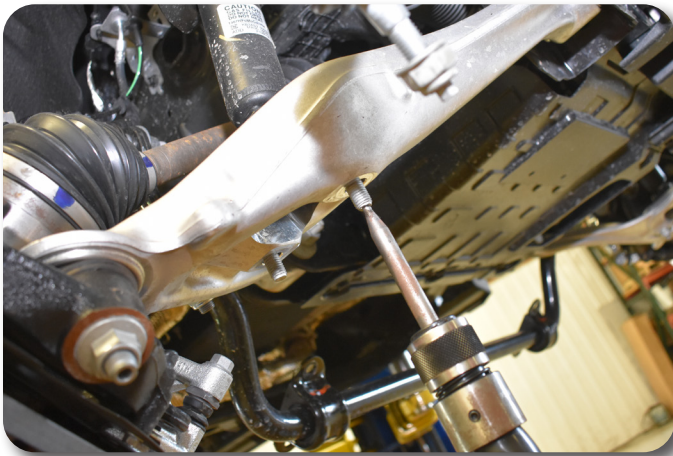


Figure 8

Step 11 Note:

A punch and hammer can also be used to dislodge the studs from the lower strut mount.

12. Remove the three upper strut mounting nuts at the frame. Figure 9 DO NOT remove the center strut rod nut.

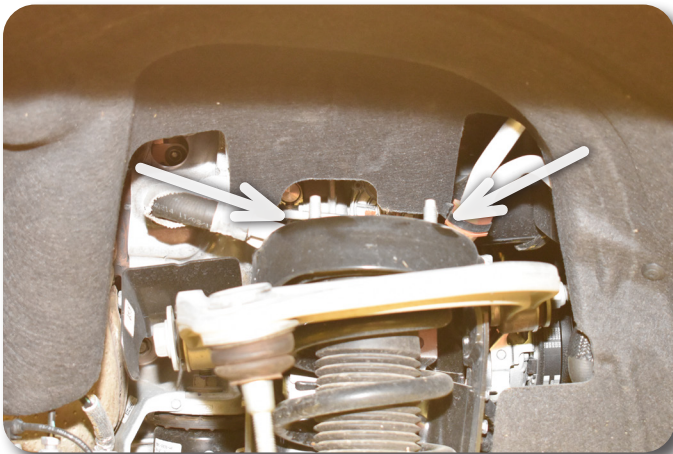


Figure 9

Step 13 Note:

Be sure to support the lower control arm / knuckle assembly when removing the strut.

13. Using the jack, lower the lower control arm / knuckle assembly and remove the strut from the vehicle Figure 10.



Figure 10

Step 14 Note:

! 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.

» STRUT SPACER INSTALLATION

14. Remove the pin in the strut top hat Figure 11.



Figure 11

15. Place alignment marks on the upper top hat, isolator, spring, strut body and lower coil seat for reference when the strut is assembled Figure 12. **Spring rotation is critical and the spring position must not change relative to the lower strut body alignment marks, just rotate the metal top hat and not the spring isolator.**



Figure 12

16. While still using the strut compressor, compress the coil spring and remove the upper strut nut Figure 13.



Figure 13

17. Remove the lower strut assembly from the strut compressor, the top hat and spring can remain in the strut compressor.
18. Remove the strut washer, dust boot, bump stop, plastic or metal cap, and the lower spring seat from the strut body Figure 14A & B. After fully disassembled the strut should be the same as Figure 14D.

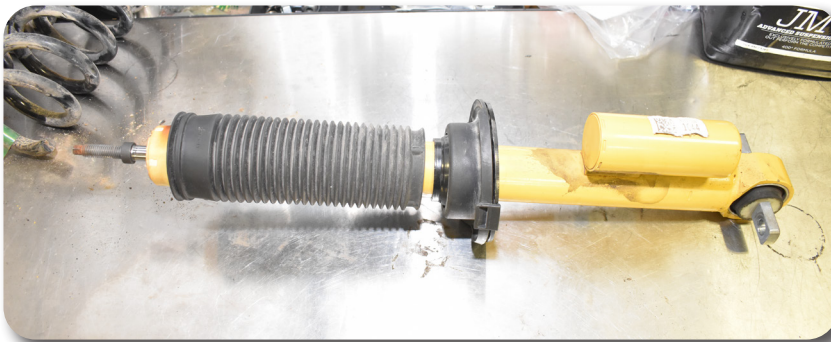


Figure 14A



Figure 14B

Step 16 Note:

! 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.

Step 18 Note:

A punch / chisel may be needed to remove the strut washer.

See Figure 14C



Figure 14C



Figure 14D

19. Install the provided preload spacer ring on the strut body such that the groove in the preload spacer goes over the snap ring on the strut body **Figure 15**.



Figure 15

20. Reinstall the lower coil seat, plastic or metal cap, bump stop, and dust boot in reverse order **Figure 16A & B**.

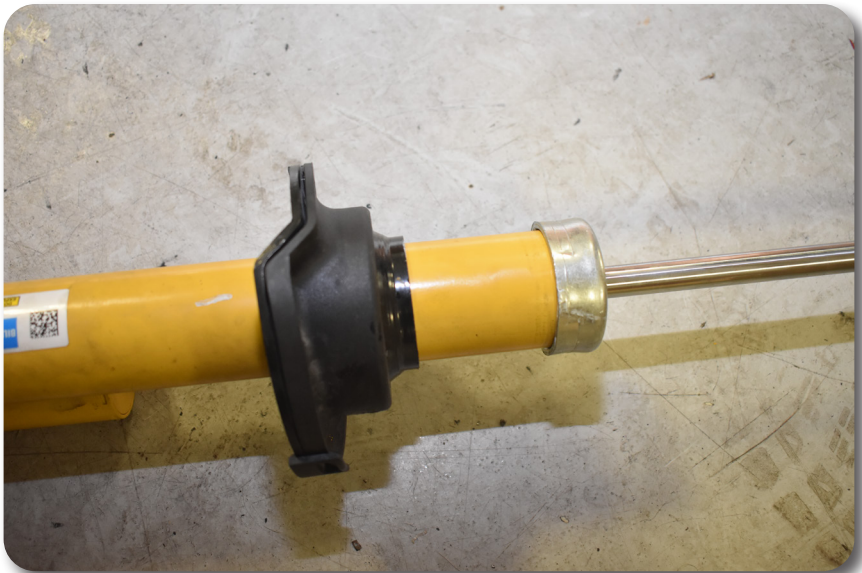


Figure 16A



Figure 16B

21. Install the provided bump stop extension on top of the bump stop followed by the strut washer as shown in Figure 17.

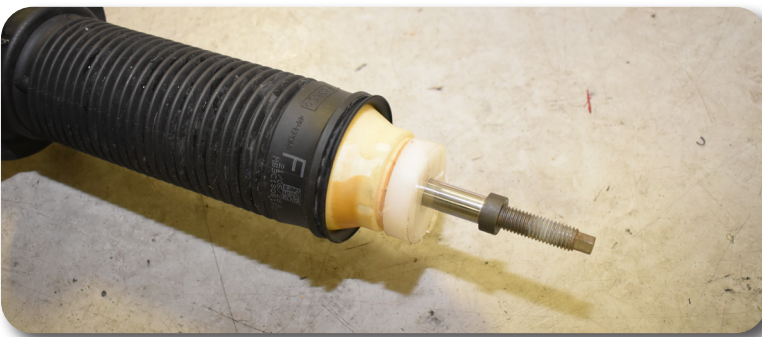


Figure 17

22. Reassemble the lower strut assembly with the top hat and spring. Due to lower bar pin angle in the strut, the top plate of the strut assembly must be rotated 180 degrees. Figure 18. This will allow the lower bar pin to reassemble in the lower control arm smoothly. Spring rotation is critical and the spring position must not change, just rotate the metal top hat and not the spring isolator.

Step 22 Note

More preload will need to be put into the spring to reinstall the strut nut.



Figure 18 (Strut on the right has the top hat rotated 180 degrees, strut on the left is stock orientation with the bar pin angle the same)

Step 23 Note:

IMPORTANT!

FAILURE TO FOLLOW STUD TRIMMING STEP WILL RESULT IN STRUT SPACER DAMAGE.

23. The studs will need to be trimmed for the strut spacer to be installed. The studs must be 13/16" tall from the mounting surface. Install the strut spacer and make sure the studs sit flush / to barely below the surface. Do not trim the studs too short or the prevailing torque nut will not "lock" Figure 19.

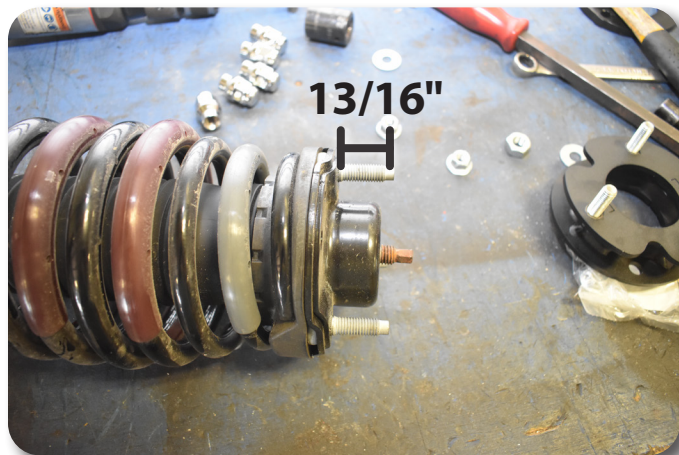


Figure 19

Step 24 Note:

Hardware for the strut spacers is in Bolt Pack 368.

Use a 17mm "thin walled" / "chrome" socket to tighten the spacer to the strut.

The "Made in the USA" / 05113 is on the high / thick side of the taper and will face outwards towards the tire when installed.

24. Install the shorter 10mm bolts through the hex holes on the bottom of the front strut spacer (05113). The front strut spacer will have a slight taper to it. Attach strut spacer on top of the factory strut with high side of the taper towards the outside of the vehicle. Tighten to the top plate using the provided 10mm washers and provided 10mm nuts to 35 ft-lbs. In Mid-year 2022 the thread pitch for the upper strut nuts changed. Verify the correct thread pitch is being used between a coarse thread 10mm-1.50 thread in 2021-Mid-year 2022 and a fine thread 10mm-1.25 starting in Mid-year 2022. DO NOT EXCEED 35 ft-lbs when tightening the spacer to the strut.



Figure 20A

In towards
frame (low side of
the taper)



Out towards tire
(high side of the
taper)

Figure 20B

In towards frame
(low side of the taper)



Out towards tire
(high side of the
taper)

Figure 20C

25. Reinstall the strut assembly into the upper frame mount by aligning the studs in the new spacer with the original mounting holes and aligning the lower studs with the mounting holes in the lower control arm **Figure 21A**. It is important to note that the outer winding of the coil spring must face the outside (tire side) of the vehicle **Figure 21C & D**. This is to ensure proper "bowing" of the coil spring. Verify the coil spring position and adjust accordingly using a strut compressor.

Step 25 Note:

Hardware for the strut spacers is in Bolt Pack 368.

The thick part of the spacer will be pointing towards the out side of the vehicle as shown in **Figure 20C**.

The studs will be just at the surface for the frame mount when installing the strut into the vehicle. A magnet can be used to pull the studs up. This is done to make installation easier when the lower barpin studs are not removed.

Driver Side: The lower end tip faces front of the vehicle. Figure 21B

Passenger Side: The lower end tip faces rear of the vehicle. Figure 21B

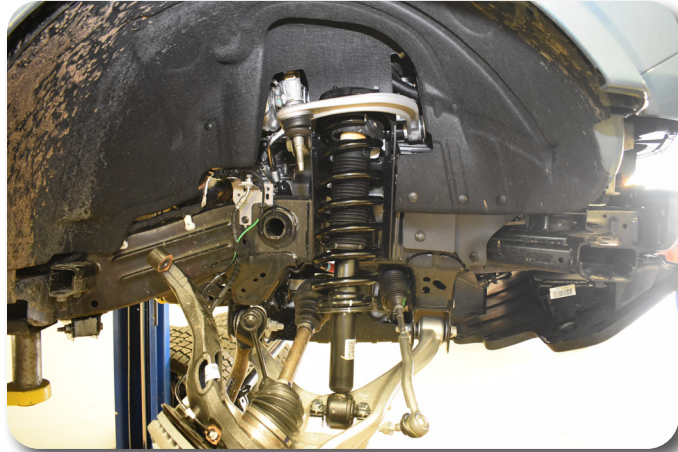


Figure 21A

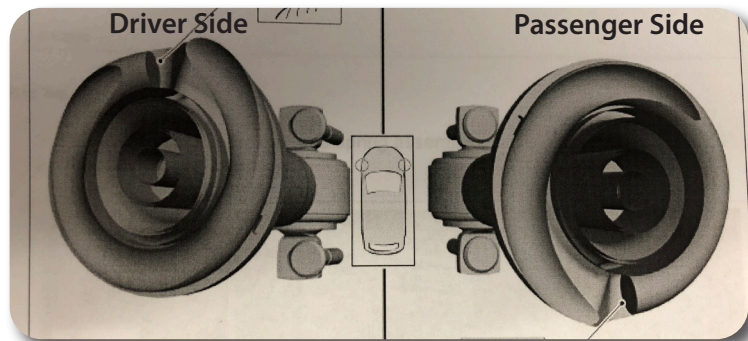


Figure 21B



Figure 21C (Driver Side viewed from the front)

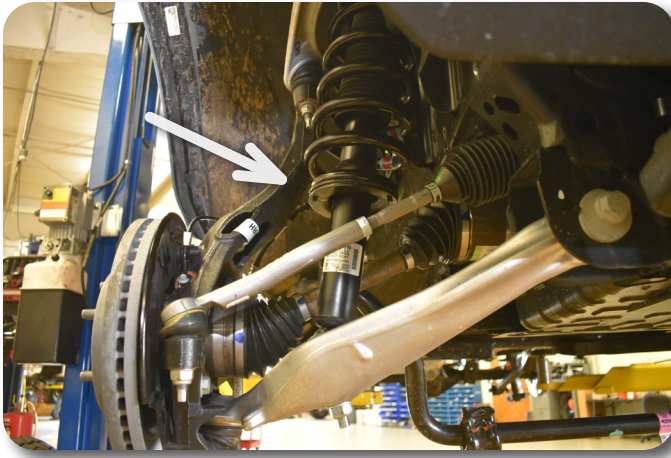


Figure 21D (Passenger Side viewed from the front)

26. Loosely fasten the strut to the upper frame mount with the provided 10mm nuts and 10mm washers.
27. Loosely fasten the strut to the lower control arm replacing the nuts onto the studs. If the studs were removed earlier for ease of removal of the strut, replace the studs and nuts.
28. Tighten the upper frame mount nuts to **35 ft-lbs**. DO NOT EXCEED 35 ft-lbs when tightening the spacer to the strut.
29. Tighten the two lower strut stud / nuts to 66 ft-lbs. If the lower strut studs were removed, ensure that the stud is fully seated into the lower bar pin on the strut after torquing.

» FRONT INSTALLATION

30. If installing recommended Zone Upper Control Arms (ZONF2302), do so at this time. Follow instructions provided with the upper control arms for installation.
31. With the strut installed, reconnect the knuckle to the upper ball joint. Replace with factory hardware **Figure 22A**. While connecting the upper ball joint, be sure that the CV shaft properly aligns into the hub **Figure 22B**. Torque the upper ball joint nut to 46 ft-lbs.



Figure 22A

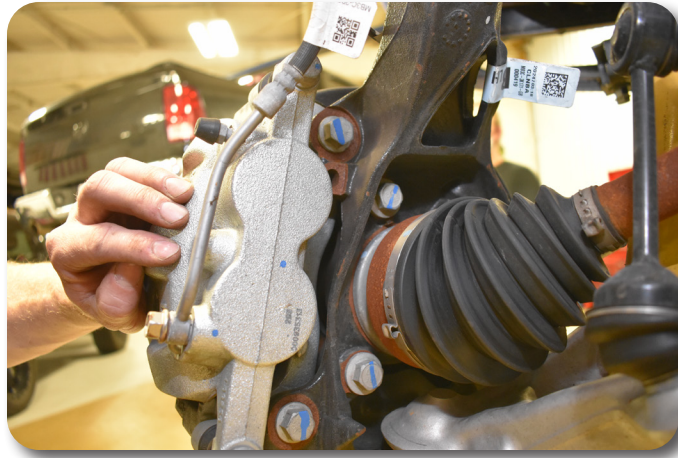


Figure 22B

Step 32 Note:

CV axle nut may need to be torqued on the ground with the weight of the vehicle.

32. Be sure the CV is properly seated in the hub and replace with the factory CV axle nut. Torque the CV axle nut to 221 ft-lbs.
33. Reconnect the brake line bracket and ABS line to the steering knuckle and frame with the factory bolts. Torque hardware to 159 in-lbs.
34. Attach the steering tie rod end to the steering knuckle and replace with factory nuts. Torque to 46 ft-lbs.
35. Complete installation of strut spacers on both sides of the vehicle.

»» FINAL FRONT INSTALLATION

36. With both sides complete, reconnect the sway bar links to the lower control arm and replace with factory hardware. Torque to 111 ft-lbs. If the sway bar was removed from the mounts to the frame, replace the 2 factory bolts and 2 factory nuts to the mounts in the frame. Thread locker must be used on the bolts if removed from the mounts to the frame.
37. Check all brake / ABS lines for proper routing and clearances.
38. Install the wheels and lower the vehicle to the ground. Torque lug nuts to 100 ft-lbs in a crossing pattern.

»» REAR DISASSEMBLY

1. Block the front wheels for safety.
2. **Optional:** Disconnect the track bar from the rear axle mount. Save hardware.
3. Raise the rear of the vehicle and support with jack stands under the frame rails just ahead of the lower control arm mounts.
4. Support the axle with a hydraulic jack.
5. Remove the wheels.

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

6. Remove the screws and screw clips attaching the rear inner fenders to the vehicle **Figure 15A & B**. Remove the inner fender from the vehicle. This will allow access to the rear upper strut mounts.

Step 36 Note:

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



Figure 15A



Figure 15B

7. Make sure the rear axle is supported. Remove the three upper strut mounting nuts at the frame. **Figure 15** DO NOT remove the center strut rod nut. Discard the nuts.



Figure 16

8. Remove the lower strut mount bolt from the axle end. **Figure 17**

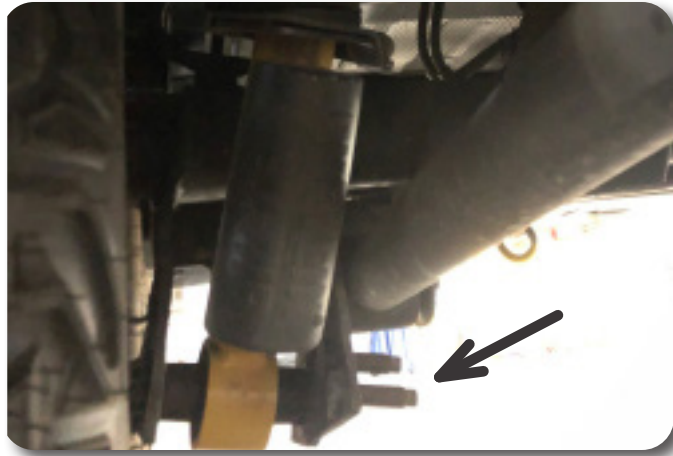


Figure 17

9. Remove the strut assembly from the vehicle Figure 18.



Figure 18

» REAR INSTALLATION

10. Use a strut compressor to compress the coil spring slightly. The strut will not need to be disassembled. Figure 20.



Figure 19

11. Rotate the metal top hat 180 degrees from its initial position. This will allow the new strut spacer to mount to the factory upper strut mount. Remove the strut from strut compressor for strut spacer installation.
12. The rear studs will need to be trimmed for the strut spacer to be installed. The studs must be 1" tall from the mounting surface **Figure 19**.

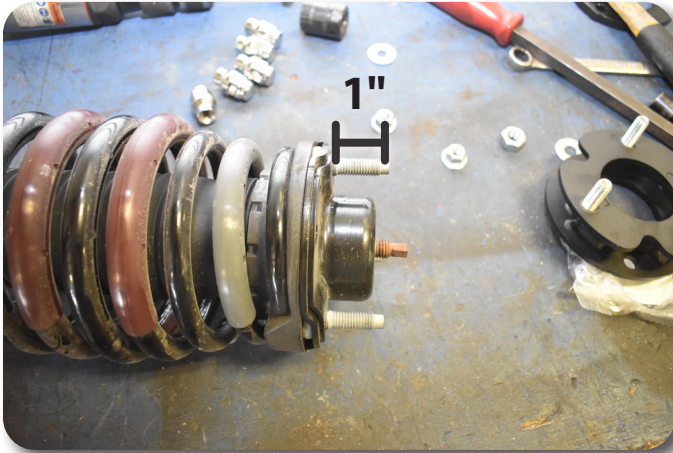


Figure 20

13. Install the longer 10mm bolts through the hex holes on the bottom of the rear strut spacer (05115) **Figure 21A**. Attach strut spacer on top of the factory strut **Figure 21B**. Tighten to the top plate using the provided 10mm washers and OE strut nuts to **35 ft-lbs** as shown in **Figure 21C**. **DO NOT EXCEED 35 ft-lbs** when tightening the spacer to the strut.



Figure 21A

Step 13 Note:

Make sure the OE studs do not stick past the top of the strut spacer.

Hardware for the strut spacers is in Bolt Pack 368.

The rear strut spacers are not tapered and can be installed any direction on the strut.



Figure 21B

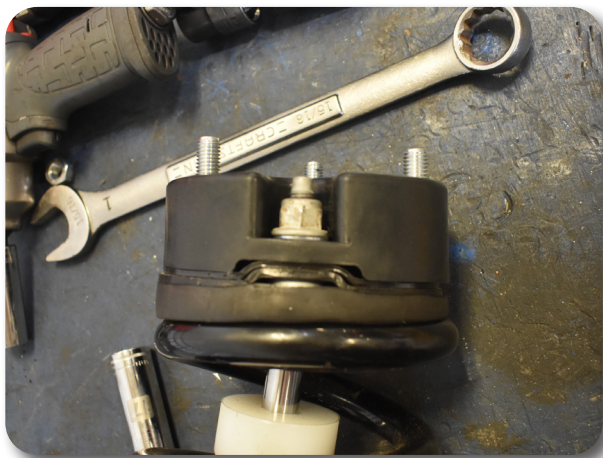


Figure 21C

Step 15 Note:

Hardware for the strut spacers is in Bolt Pack 368.

14. Reinstall the strut to the vehicle, noting that the strut will be installed 180 deg opposite as it was removed.
15. Use the provided 10mm nuts and 10mm washer to attach the strut to the frame mount **Figure 22**.



Figure 22

16. Attach the strut to the axle using an OE lower strut mount bolt and nut **Figure 23**. Reservoir will still face forward as it did from the factory.

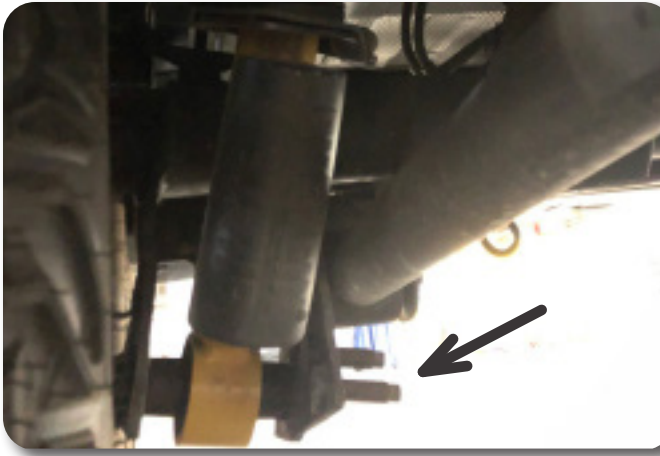


Figure 23

17. Tighten the upper frame mount nuts to **35 ft-lbs**. DO NOT EXCEED 35 ft-lbs when tightening the spacer to the strut.
18. Leave the lower strut bolt / nut loose. Since this is a rubber bushing this will be tighten with the weight of the vehicle on the ground.

»» FINAL REAR INSTALLATION

19. Reinstall the rear inner fender liners using the clips and screws previously removed. Torque any hardware for the inner fender liner to 18 in-lbs.
20. Check all brake / ABS lines for proper routing and clearances.
21. Install the wheels and lower the vehicle to the ground. Torque lug nuts to 100 ft-lbs in a crossing pattern.
22. Bounce the rear suspension to settle it. Tighten the two lower strut bolts / nuts to 350 ft-lbs
23. If removed, replace track bar bolt and and nut and tighten to 159 ft-lbs.

»» FINAL INSTALLATION

24. Adjust head lights.
25. The vehicle will need a complete front end alignment.
26. Check all hardware for proper torque.
27. Check hardware after 500 miles..

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.

Recommend Alignment Specifications

CASTER

$3.18^{\circ} \pm 0.60^{\circ}$

CAMBER

$+0.20^{\circ} \pm 0.50^{\circ}$

TOE

$+0.10^{\circ} \pm 0.15^{\circ}$

Fitment Note:

All Wheel / Tire fitment information is with the front and rear intrusion beams removed same as how a Sasquatch model has them removed.

Tire diameter and width will vary based around tire brands and wheels used. Tire side profile will also affect clearance to the stock UCA and sway bar.

» WHEEL / TIRE FITMENT NOTES

1. Although 37" x 12.50" will work at ride height, the tires will still contact the front body mount (Figure A & B) and possibly rear inner fender (Figure C) through wheel travel and steering lock to lock. If running this size tire and using the full suspension travel, these areas must be addressed.



Figure A



Figure B



Figure C

2. A maximum of 35" x 12.50" tire on a 17x8.5, 17x9, 18x8, 18x9, or 20x9 on 5.5" to 5" back spacing will clear through wheel travel and is recommended for best performance and minimal rubbing Figure D.



Figure D

3. A 275/70R18 is recommended on 18" Outer Banks wheels or other wheels with similar back spacing (6.375" BS). Wider tires may rub the sway bar.
4. A 275/80R17 is recommended on 17" Black Diamond wheels or other wheels with similar back spacing (6.5" BS). Wider tires may rub the sway bar.
5. A 285/70R17 is recommended on 17" Badlands wheels or other wheels with similar back spacing (6.75" BS). Wider tires may rub the sway bar.
6. A 315/70R17 is recommended on 17" Sasquatch wheels or other wheels with similar back spacing (6" BS).
7. A maximum of 35" x 11.20" (285mm width tire) tire on a 17x8.5, 17x9, 18x8, 18x9, or 20x9 on 6" back spacing will clear through wheel travel and is recommended for best performance and minimal rubbing. Wider tires / more aggressive sidewall tires than 285mm width (295-315mm widths) will rub the sway bar and / or UCA on a 6" back space wheel.

20": 285/65R20, 285/60R20

18": 285/75R18, 285/70R18

17": 285/75R17, 285/70R17

8. 35" x 12.50" tire on a stock 17" Badlands, 17" Black Diamond or 18" Outer Banks wheel will NOT clear through wheel travel and will rub on the stock UCA when turning **Figure E** and the sway bar. Any other stock wheel or aftermarket wheel with 6.75" to 6" back spacing will have similar rub issues on a 35" x 12.50" tire.



Figure E