



## F1605 Installation Instructions 2017-2020 Ford Super Duty F250/350 4WD 6" Suspension Lift

### 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](http://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](mailto: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: 4-6 hours

#### Special Tools Required

30mm (1-3/16") Socket

46mm (1-13/16") Socket

Heavy Duty Floor Jack and Stands

Pitman Arm Puller

#### Tire/Wheel Fitment

Tire:

37 x 12.50

Wheel:

9" Wide with 4.5" backspacing

## Kit Contents

### Front Coil Springs- 6" Diesel (ZONF1613)

Qty	Part
2	Front Coil Spring

### Front Coil Springs- 6" Gas (ZONF1623)

Qty	Part
2	Front Coil Spring

### Rear Box Kit- 2017-2019 6" kits (ZONF1609)

Qty	Part
1	5" Tapered Superduty Block w/ Wing - DRV
1	5" Tapered Superduty Block w/ Wing - PASS
4	5/8" x 3-1/8" x 19" or 16" semi-round u-bolt
2	1" x 3" Bolt on Block
2	7/16" x 6" Center Pin
8	5/8" washer
8	5/8" high nut
1	E-Brake Relocation BRKT
1	E-Brake Clamp BRKT
1	Bolt Pack E-Brake BRKTS

### Rear Box Kit- 2020 6" kit (ZONF1608)

Qty	Part
1	6" Tapered Superduty Block w/ Wing - DRV
1	6" Tapered Superduty Block w/ Wing - PASS
4	5/8" x 3-1/8" x 19" or 19" semi-round u-bolt
8	5/8" washer
8	5/8" high nut
1	E-Brake Relocation BRKT
1	E-Brake Clamp BRKT
1	Bolt Pack E-Brake BRKTS

### Optional Add-A-Leaf Box Kit (2017-2019 Trucks)

Qty	Part
2	Add-a-leaf
4	Clamp Sleeve
1	Bolt Pack - Clamps
4	Clamp Bracket
4	Round Anti-Friction Pad

### Single Steering Stabilizer Box Kit (ZONF7302)

Qty	Part
1	Steering Stabilizer
2	Bushings
1	Sleeve
1	P Pack
1	Stabilizer Bracket
2	5/16" x 1-1/4" x 2" U-Bolt
1	Bolt Pack - U-Bolts
1	Bolt Pack - Stabilizer Mounting

### Front Box Kit (ZONF1605)

Qty	Part
1	Pitman Arm
1	Drv Brakeline Bracket - 2017 SD
1	Pass Brakeline Bracket - 2017 SD
2	Front Bump Stop Extension - 4"
1	Sway Bar Drop - Drv
1	Sway Bar Drop - Pass
1	Track Bar Bracket
2	Ball Joint Cam
2	Radius Arm Drop Bracket
1	Bag Kit
1	CV Boot Clamp
2	Track Bar Cam Washer
2	Bolt Pack - ABS Wire Clamp
1	Bolt Pack - Sway Bar Drop Bracket
2	Bolt Pack - Bump Stop Extension
1	1/8" x 1-1/4" cotter pin
4	Zip Tie
2	Push Pin Zip Tie
1	Loctite

# INSTALLATION INSTRUCTION

## » PRE-INSTALLATION NOTES

1. Ford recommends replacement of the pitman arm nut after each time it has been removed.
2. These vehicles, especially diesel models, are very heavy. Be sure that proper jacks/stands are used that are rated to handle the weight of the vehicle. Ensure that the vehicle is well supported before beginning the installation.
3. The factory front track bar bolt requires 405 ft-lbs of torque to be installed properly. Be sure you have the means of removing and installing this hardware properly. It is possible to install the hardware and torque to a more modest range (200 ft-lbs or so) and take the vehicle to a shop with the means to torque the hardware properly immediately after the installation is complete.
4. As a result of the location of the long radius arm suspension, support locations are limited. Use your best judgment while supporting the vehicle with sufficient strength stands at appropriate locations. The radius arms will need to move freely during this installation.
5. Larger tires on stock wheels are not recommended due to brakeline clearance required. Use recommended specifications listed in tire and wheel fitment section.
6. Ensure the correct U-bolt length and optional add-a-leaf kit are ordered for the rear suspension configuration on your vehicle. Use the information provided below along with the diagram shown in Figure A to determine your rear leaf spring setup.

Bottom overload, 2 leaf main pack, no top overload*	16" U-Bolt
Bottom overload, 2 leaf main pack, with top overload*	19" U-bolt
Bottom overload, 3 or more** leaf main pack, no top overload	16" U-bolt
Bottom overload, 3 or more** leaf main pack, with top overload	19" U-bolt

\*2 leaf main pack will require add-a-leaf kit to be ordered separately for proper stance

\*\* Variations with additional add-a-leaves or larger top mounted overload spacer may require longer u-bolts than provided, order separately.



Figure A

## Important—measure before starting!

Measure from the center of the wheel up to the bottom edge of the wheel opening

LF \_\_\_\_\_ RF \_\_\_\_\_

LR \_\_\_\_\_ RR \_\_\_\_\_

## » FRONT INSTALLATION

1. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
2. Disconnect the track bar from the driver's side frame mount. Save hardware.

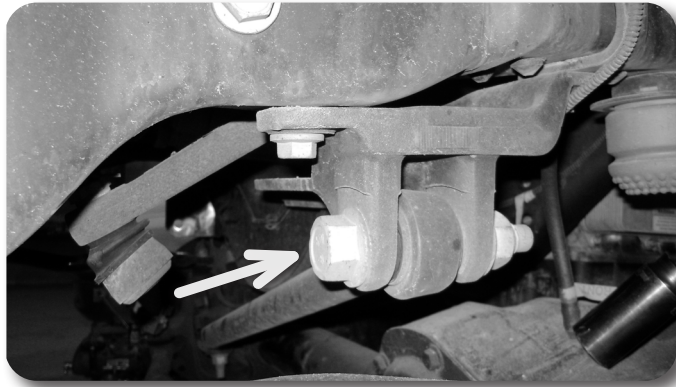


Figure 1

3. Raise the front of the vehicle and proper support with jack stands under the frame rails - See Pre-Installation Note 3.
4. Remove the front wheels.
5. Support the front axle with a hydraulic jack.
6. Disconnect the front brake line brackets from the axle **Figure 2**. Save hardware.

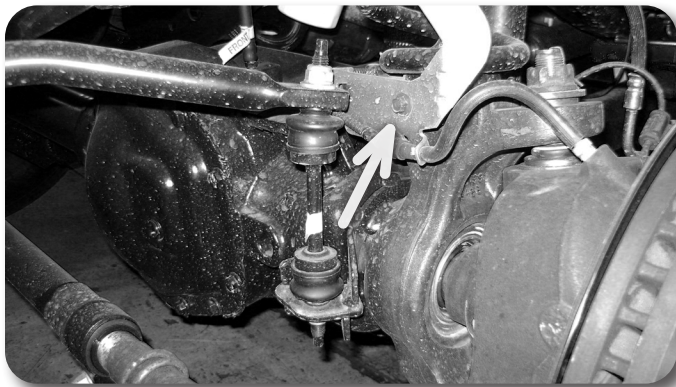


Figure 2

7. Remove the front axle hub vacuum lines retaining clips from the axle/radius arm. **Figure 3A,B**



Figure 3A

### Step 10 Note

Use a small pitman arm puller to remove the steering stabilizer taper.



Figure 3B

### Step 12 Note

Use a small pitman arm puller to remove the drag link joint taper.

8. Remove the clips holding the front brake lines to the brackets on the frame. Carefully cut the factory bracket so that the brake line can be removed without breaking loose the fittings. Remove the factory brackets from the vehicle. Do not damage the brakeline! Figure 4A,B

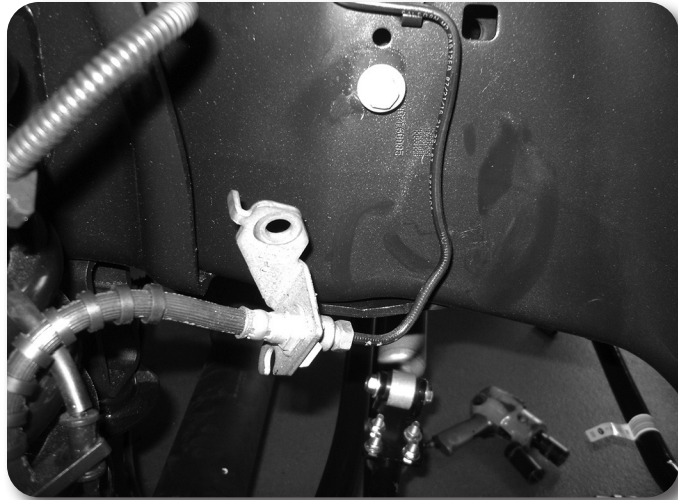


Figure 4A

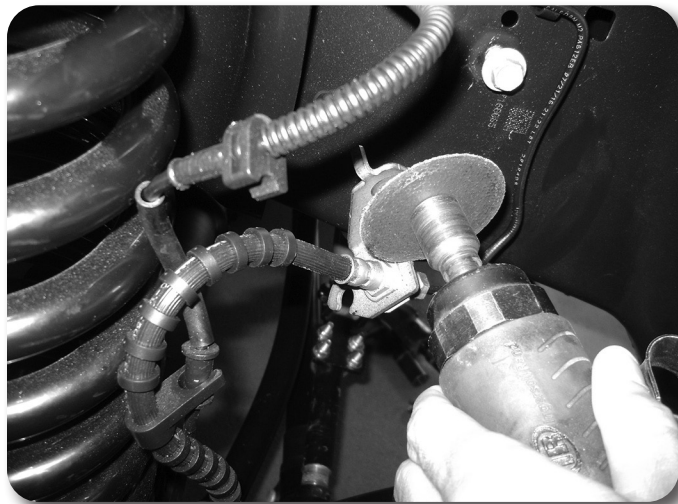


Figure 4B

9. Disconnect the front sway bar from the frame. Swing the sway bar down and allow it to rest on the steering during the installation. Save frame mount hardware.
10. Disconnect the OE steering stabilizer from the frame mount. The factory frame mount can be removed or remain on the frame. Disconnect the stabilizer from the factory drag link.
11. Disconnect the (5) bolts mounting the OE track bar bracket to the frame. Remove bracket and retain hardware. **Figure 5**

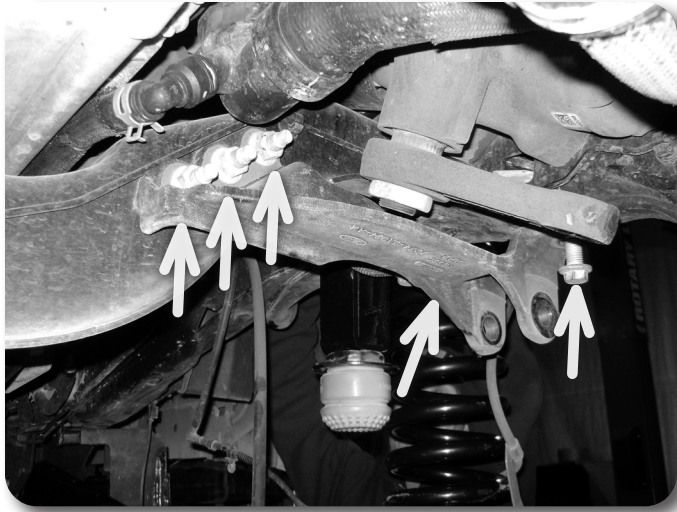


Figure 5

12. Disconnect the steering drag link from the pitman arm. Remove the cotter pin and castellated nut cap. Remove the nut and thread back on by hand a couple turns. Strike the end of the pitman arm near the drag link end to dislodge the taper from the pitman arm. **Figure 6** Remove the nut and the drag link from the pitman arm. Save all hardware.



Figure 6

13. Remove the pitman arm nut. Note the indexing of the pitman arm in relation to the steering sector shaft and remove the pitman arm from the steering box using the appropriate puller.
14. Remove all of the dri-lock compound on the threads of the OE nut and steering sector shafts. This is important to ensure that the new thread lock compound will adhere properly.
15. Apply a bead of the supplied thread lock all the way around the threads of the OE nut.
16. Install the new pitman arm (indexed the same as the OE) and fasten with the OE nut. Torque the nut to 350ft-lbs.
17. Install the new track bar bracket using the stock mounting hardware as it was removed **Figure 7**. Torque all (5) mounting bolts to 129 ft-lbs. Do not install track bar at this time, it will be installed once the vehicle is on the ground.

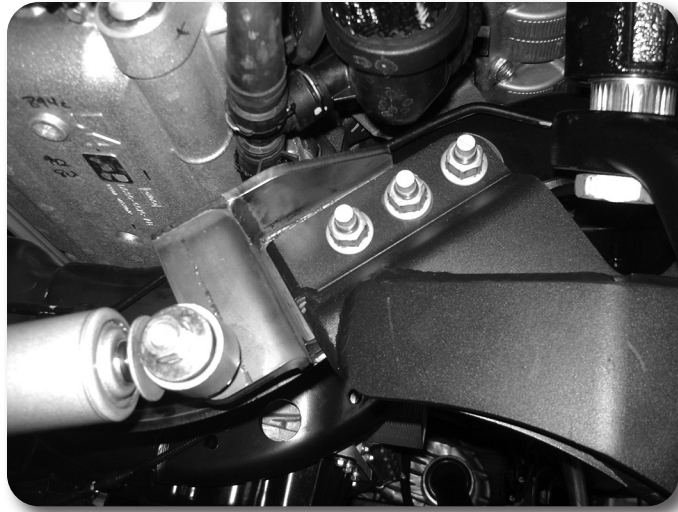


Figure 7

18. With the axle still well supported with a jack, disconnect the front shocks from the axle mounts. Leave the shocks attached to the frame, they will be used for added axle support during the next portion of the installation. Save axle hardware.
19. Disconnect the front driveshaft from the axle. Keep factory hardware for reinstallation later. Failure to do so, will damage the front driveshaft CV joint at the transfer case output.
20. Carefully lower the axle and remove the factory front springs. Take care not to over-extend any lines/hoses. Save the upper spring isolator to be reinstalled with the new springs.
21. Reconnect the shocks to the axle with the original hardware. The shocks will help support the axle during the radius arm bracket installation.
22. Remove the factory bump stops from the retainer cups on the frame. **Figure 8A**  
Remove the bolt holding the retainer cup to the frame and remove from vehicle. **Figure 8B**



Figure 8A





Figure 8B

23. Reinstall the retainer cups on the frame along with the provided 4" tall bump stop spacers. Fasten with a provided 8mm x 100mm bolt and washer. **Figure 9** Apply Loctite to the bolt and torque to 15 ft-lbs. Reinstall the factory bump stop into the retainer cup.



Figure 9

24. Locate and loosen the 4 radius arm mounting bolts at the axle. **Figure 10** Once again make sure that the axle is well supported by a jack.

### Step 22 Note

The bump stop extension hardware is located in the B1420 Bag Kit provided.

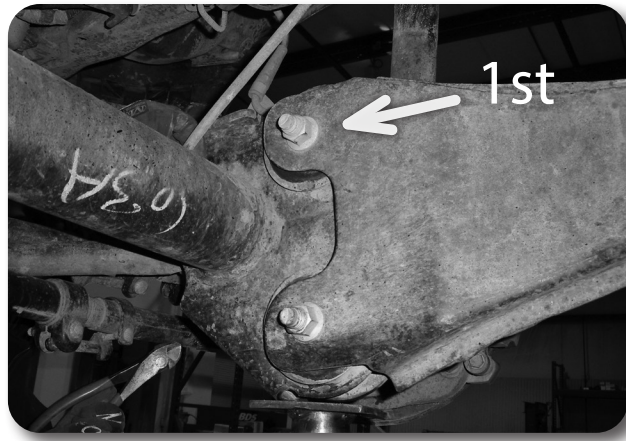


Figure 10

25. Starting with the passenger's side, 1st remove the upper radius arm mounting bolt at the axle. 2nd, remove the radius arm bolt at the frame and lower the radius arm from the frame bracket. Figure 11 Save hardware.

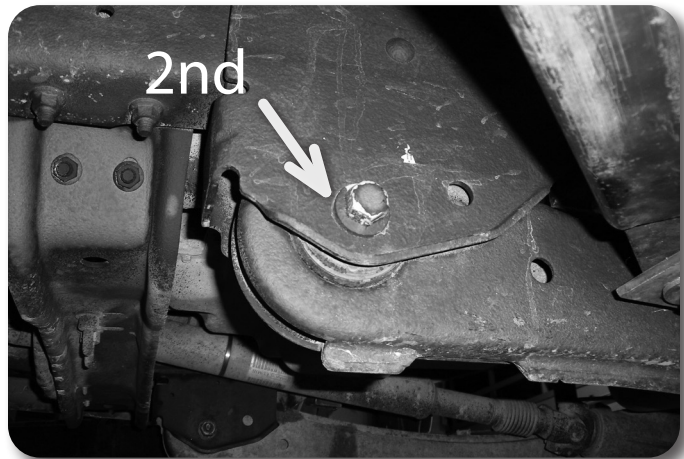


Figure 11

26. Install the new provided radius arm bracket into the factory frame bracket. Align the hole in the bracket with the factory mount holes and install 3/4" x 5" bolts, nuts and washers in the holes. Figure 12 With both bolts installed, torque hardware to 250 ft-lbs.

### Step 25 Note

Radius arm bracket hardware is located in hardware pack #430.

The new bolts will fit tight in the factory bracket. Installing them simultaneously will help to align the bracket holes. In some cases, because of varying tolerance the front factory bracket hole may need to be clearanced slightly.

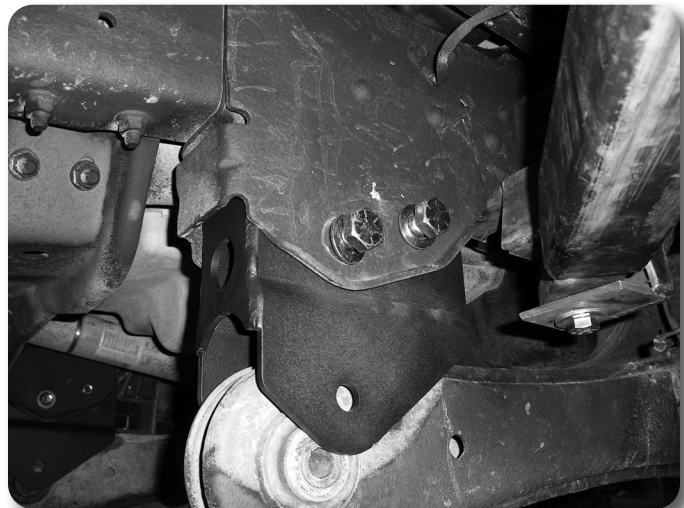


Figure 12

27. Swing the passenger's side radius arm up into the new bracket and fasten with the factory hardware. Leave hardware loose.
28. Repeat the bracket installation on the driver's side.
29. With both brackets installed, reattach the upper radius arm mount to the axle with the factory hardware. Leave hardware loose. All radius arm hardware will be tightened with the weight of the vehicle on the suspension.
30. With the axle still well supported, disconnect the shocks from the axle and frame. Save the axle mount hardware.
31. Lower the axle just enough to install the new coil springs along with the factory upper rubber isolator. Once installed, rotate the coil so it seats properly in the axle mount. Raise the axle until the coil is seated in the upper mount.
32. Locate the new front shocks, bushings and sleeves. Install the bushings and sleeves into the shock eyes. Install the shocks using the factory lower hardware and provided stem hardware.
33. Torque shock hardware at axle to 100 ft-lbs. Tighten stem hardware until bushings deform.
34. Locate the new sway bar drop brackets. Install the brackets on the frame with the original sway bar mount hardware. When installed the brackets should offset toward the front of the vehicle and the open face point to the inside. **Figure 13** Leave hardware loose.

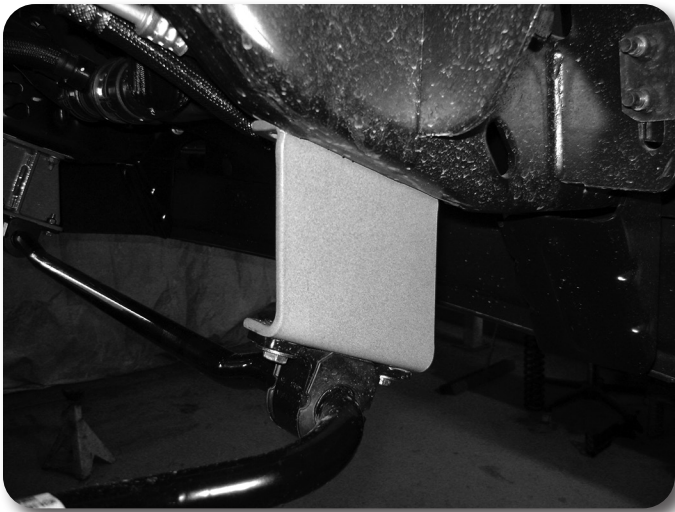


Figure 13

35. Attach the sway bar to the new drop brackets with the provided 3/8" hardware. Torque the factory hardware and new 3/8" hardware to 30 ft-lbs.
36. Reattach all vacuum lines. Use the provided zip ties where needed.
37. Install the new brake line brackets, brackets are side specific. Brake lines will need to be reformed to reach the new mounting position. It may be necessary to slightly twist the brakeline fittings in relation to the hardline to get adequate clearance to the frame / wheel and tire. **Figure 14 A, 14B** Tighten to 101 in-lbs.

### Step 34 Note

Sway bar drop hardware is located in hardware pack #422

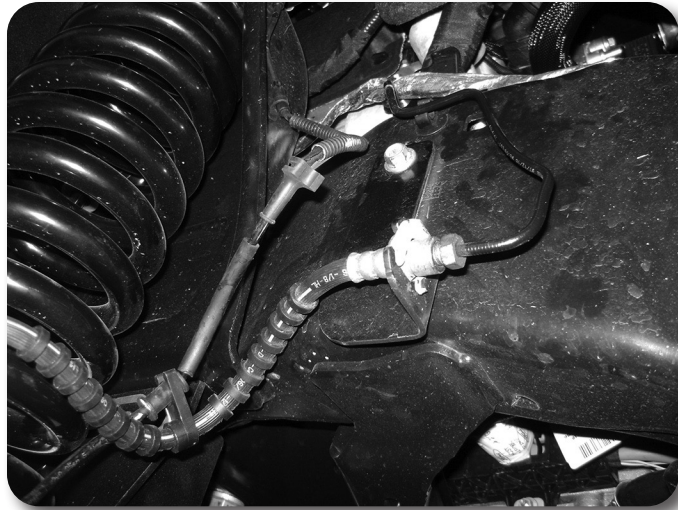


Figure 14A (Passenger's Side)

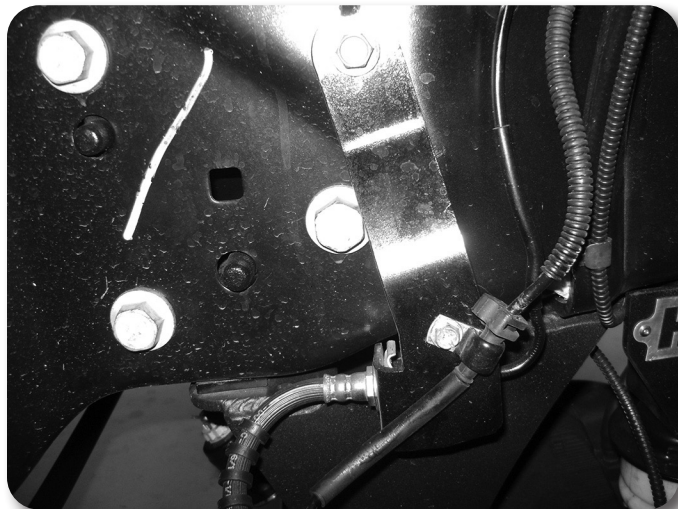


Figure 14B (Driver's Side)

38. Attach the ABS wire to the driver's side with 1/4" hardware with rubber coated cable clamp **Figure 14B** Tighten to 101 in-lbs.
39. Center the steering wheel. Extend the steering stabilizer 4-1/2" to 4-3/4" and attach to the frame end with stud pack in the stabilizer box kit. Attach stabilizer bracket to the drag link with the included u-bolts, washers, and nuts. Attach stabilizer to bracket with 3/8" hardware. Tighten 5/16" hardware to 30 ft-lbs, 3/8" to 35 ft-lbs, 7/16" Stud nut to 45 ft-lbs, and 1/2" stud nut to 65ft-lbs. **Figure 15A,B**



Figure 15A

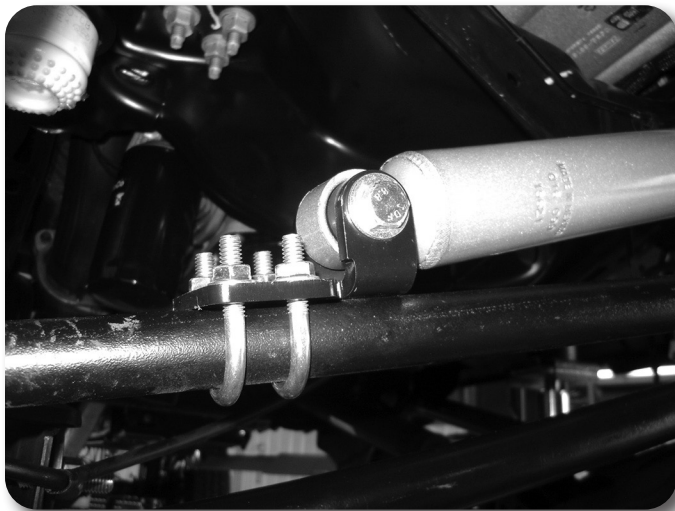


Figure 15B

### Step 42 Note

Slide the CV style joint boot clamp back to relieve stress on the boot at full droop!

40. Properly bleed the brake system of air if the brakelines were disconnected at any point in the installation, and top off the brake fluid reservoir with the proper type of fluid (see owners manual).
41. Reattach the steering drag link to the pitman arm. Torque nut to 148 ft-lbs. Install the original castellated nut cap and new 1/8" cotter pin.
42. Reattach the front driveshaft to the front differential with factory hardware. Tighten to 55 ft-lbs. Remove the factory CV joint clamp at the front transfer case output. Slide the end of the boot up approximately 1/4" and reclamp with new CV joint boot clamp. **Figure 16**

### Step 41 Note

New cotter pin is located in the provided Bag Kit

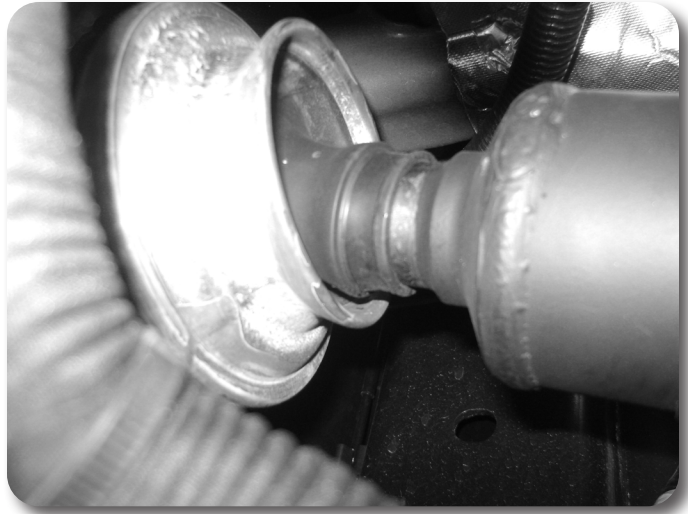


Figure 16

### ***Alignment Cam Installation***

43. Remove the cotter pin from the upper ball joint.
44. Loosen the upper ball joint stud until the nut is level with the top of the stud. Strike the axle "ear" near the upper ball joint to release the ball joint to sleeve taper. Figure 17

***Note:*** The top of the stud can also be struck using a soft blow hammer to aid in loosening the taper. Take care not to damage the stud/nut threads.



Figure 17

45. Remove the OE ball joint sleeve from the axle using the appropriate removal tool (SPC #41550 or equivalent). Figure 18



Figure 18

46. Install the new sleeve with the arrow on the top of the sleeve pointing toward the front of the vehicle. 2 different sleeves are included. The sleeve marked “2.3 degrees” should be used on the driver’s side and the sleeve marked 2.6 degrees should be used on the passenger’s side. Using the old sleeve, pound down on the new sleeve to seat it on the ball joint taper. Make sure that the flat of the sleeve is flush with the flat of the axle. **Figure 19**



Figure 19

47. Install and torque the OE ball joint nut to 69 ft-lbs. Install the cotter pin. Note: Do not loosen the nut to install the cotter pin.
48. Install the front wheels and lower the vehicle to the ground. Torque lug nuts to 165 ft-lbs.
49. Attach the track bar to the new bracket with the OE hardware. Turn the steering wheels to aid in aligning the track bar in the bracket. Install the provided cam washers between the alignment tabs on the bracket. Position the cam washers so that the hole is closer to the passenger’s side for 6” kits. **Figure 20** Torque hardware to 405 ft-lbs.



Figure 20

50. Bounce the front of the vehicle to settle the suspension. Torque all factory radius arm hardware to 220 ft-lbs.

51. Check all hardware for proper torque.

## » REAR INSTALLATION

1. Block the front wheels for safety.
2. Raise the rear of the vehicle and support with jack stands under the frame rails just ahead of the spring hangers.
3. Remove the wheels.
4. Support the axle with a hydraulic jack.
5. Remove the factory shocks. Retain all mounting hardware.
6. Remove the factory lift block. It will not be reused.

### 2017-2019 Models

7. Clamp the main leaf pack together with c-clamps. Remove the center pin nut and center pin.
8. All Rear Leaf Spring Configurations:
9. All springs when completed will have 3 main leaves, lower overload, and 1" bolt on block below the overload. Certain springs may have top mounted overloads, the center pin provided will only work for single top mounted overloads with a 1" spacer block inbetween. Variations from this will require custom center pins, or a 7/16" x 7" socket head cap screw can be substituted in place of a center pin.
10. *2 main leaf factory package only:*
11. Install the hendricks clamps onto the add-a-leaf to the bottom side of the leaf spring. Install the anti-friction pads into the add-a-leaf. **Figure 21**



Figure 21

12. Allow the C-Clamps to expand. Remove the locating dowel that holds the overload to the bottom main spring. Discard the locating dowel, it will not be reused.
13. Install the add-a-leaf below the main leaf pack and above the overload. The add-a-leaf has 2 holes in it. Position add-a-leaf so there is 22" between the center pin hole and the front, and 23" to the rear from the center pin hole.
14. Assemble the leaf spring as shown. Use the 1" bolt on block, overload, add-a-leaf, main leaf pack, and top mounted overload springs if equipped (not shown), and upper u-bolt plate. Tighten center pin nut to 20 ft-lbs. **Figure 22**

### 2017-2019 Note

The factory rear block and leaf package will vary depending on the vehicle model and GVRW. F-250s will typically have 2 leaf main packs that require add-a-leaf kits. F-350s will typically have 3 leaf packs that will not require the add-a-leaf kit.

### Step 12 Note

The locating dowel will be discarded and will NOT go into the add-a-leaf



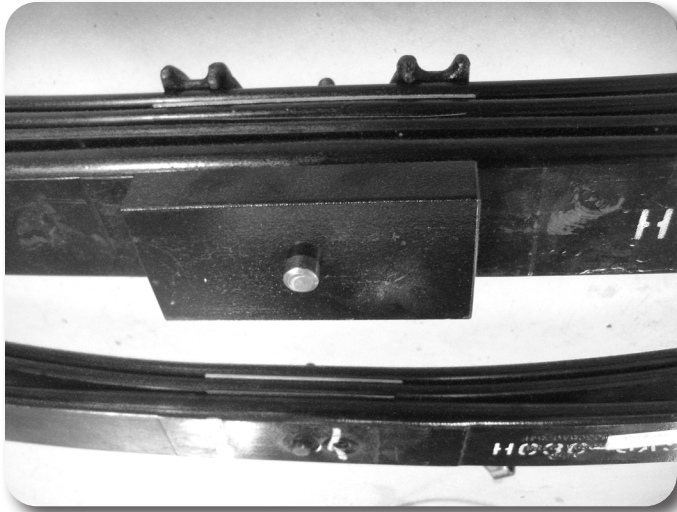


Figure 22

15. *3 main leaf factory package only:*
16. Allow the C-Clamps to expand. Remove the center pin.
17. Attach 1" bolt on block to the bottom of the main leaf pack with new center pin. Tighten to 20 ft-lbs. See Fig 22 above.

*All Models*

18. Lower the axle enough to place the provided lift block between the axle and the leaf spring. Position the block so the bump stop wing faces inward, and the small side of the block faces forward. Figure 23



Figure 23

19. Raise the axle to engage the block spring alignment pins. Fasten the entire assembly with the provided u-bolts, washers, and nuts. Snug but do not torque the u-bolts at this time. Figure 24

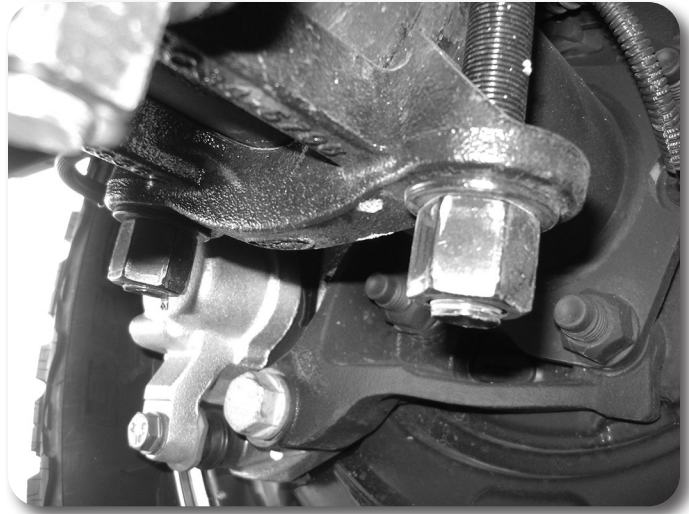


Figure 24

20. Repeat block installation of the driver's side. Take care not to over extend the brake lines.
21. Parking brake cable relocation:
22. Remove cables from the rear bracket that attaches just behind the front leaf spring mount, remove bracket, it will not be reinstalled. Figure 25

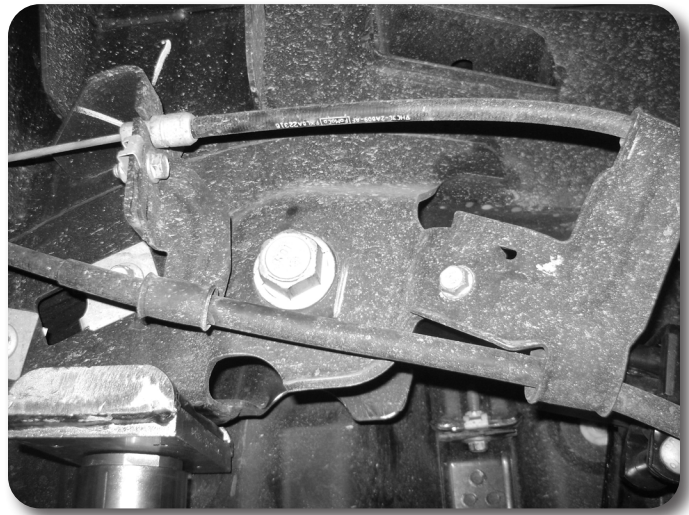


Figure 25

23. Disconnect front bracket and install the relocation bracket Figure 26a, 26b. Tighten the 1/2" hardware to 60 ft-lbs and then tighten the 5/16" hardware to 15 ft-lbs.

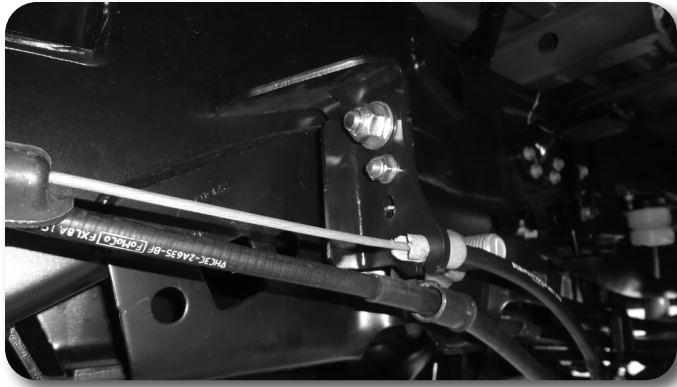


Figure 26a



Figure 26b

24. Attach e-brake cables to the leaf spring clamp with bracket and included cable clamps. **Figure 27** Tighten the 5/16" hardware to 15 ft-lbs.



Figure 27

25. Install the new shocks with the original mounting hardware. Torque the upper shock nut to 52 ft-lbs. Torque the lower shock nut to 111 ft-lbs.
26. If more parking brake cable slack is needed, remove the cable from the rear-most retaining bracket on the frame.
27. Install wheels and lower the vehicle to the ground.
28. With the weight of the vehicle on the axle, torque the u-bolts to 130-150 ft-lbs.

## 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.

## » Post Installation

1. Install wheels, cycle steering to check for brakeline, ABS wire, ETC to tire clearance. With clearance verified lower the vehicle to the ground.
2. Cycle steering to check for brakeline, ABS wire, ETC to tire clearance, rotate the driver's side brakeline on the hardline if necessary.
3. An alignment is recommended, but not necessary.
4. Adjust steering wheel with adjustment on the draglink, do NOT drive the vehicle with the steering wheel off-center or adverse traction control affects may arise. Rotate the clamps once the steering wheel is straight as shown. (Figure 28A - incorrect, clamps will interfere with sway bar, Figure 28B - correct clearance). Torque clamps to 41 ft-lbs. Thread the collar to lengthen the drag link.
5. Adjust headlights.
6. Be sure the brake system has been properly bled and the brake fluid is topped off.
7. Check all hardware for proper torque. Check hardware after 500 miles.



Figure 28A \*Incorrect\*

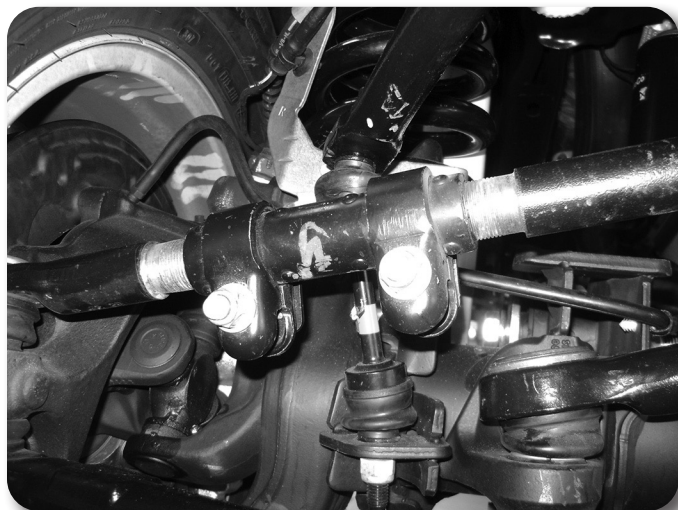


Figure 28B \*Correct\*

<b>Component</b>	<b>Torque (FT-LBS)</b>
<i>Pitman Arm</i>	<i>350</i>
<i>(5) Factory Track Bar Bracket Bolts</i>	<i>129</i>
<i>8mm Bump Stop Spacer Bolts</i>	<i>15</i>
<i>3/4" Radius Arm Drop Hardware</i>	<i>250</i>
<i>Front Upper Shock Hardware</i>	<i>Bushings Deform</i>
<i>Front Lower Shock Hardware</i>	<i>100</i>
<i>Sway Bar Drop Hardware</i>	<i>30</i>
<i>Sway Bar to Sway Bar Drop Hardware</i>	<i>30</i>
<i>ABS Clamp Hardware</i>	<i>101 In-lbs</i>
<i>Front Brake Line Brackets</i>	<i>101 In-lbs</i>
<i>Steering Stabilizer (5/16" Hardware)</i>	<i>30</i>
<i>Steering Stabilizer (3/8" Hardware)</i>	<i>35</i>
<i>Steering Stabilizer (7/16" Hardware)</i>	<i>45</i>
<i>Steering Stabilizer (1/2" Hardware)</i>	<i>65</i>
<i>Drag Link to Pitman Arm</i>	<i>148</i>
<i>Front Driveshaft</i>	<i>55</i>
<i>Ball Joint Nut</i>	<i>65</i>
<i>Lug Nuts</i>	<i>165</i>
<i>Track Bar Hardware</i>	<i>405</i>
<i>Radius Arm Hardware</i>	<i>220</i>
<i>2017-19 Models Center Pin Hardware</i>	<i>20</i>
<i>1/2" Hardware for E-Brake Relocation</i>	<i>60</i>
<i>5/16" and Leaf Spring Clamp Hardware for E-Brake Relocation</i>	<i>15</i>
<i>Rear Upper Shock Hardware</i>	<i>52</i>
<i>Rear Lower Shock Hardware</i>	<i>111</i>
<i>U-Bolts</i>	<i>130-150</i>
<i>Drag Link Adjuster</i>	<i>41</i>