



## **D1403 Installation Instructions**

### **2019-2023 Ram 2500**

### **2019-2021 Ram 3500**

### **4" Gas & 4.5" Diesel Replacement Radius Arm 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: 7-8 hours

#### **Special Tools Required**

Pitman Arm Puller

Boot Clamp Pliers

#### **Tire/Wheel Fitment**

*37x12.50 w/9" wide 5-1/2" Back-spacing*

*35x1250 w/9" wide 4-1/2" Back-spacing*

## 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.*

**\*Important\* Verify you have all of the kit components before beginning installation.**

D1403 Kit Contents		1/1	Brakeline Bracket (DRV/PASS)
Qty	Part	1	Loctite
2	Coil Spring (Diesel Only) <i>or</i>	2	Zip Tie
2	Coil Spring (Gas only)	1/1	Drive Shaft Boot Clamps
2	Radius Arm	1	Bolt Pack
4	Radius Arm Bushing	2	14mm-2.00 x 35mm bolt - 10.9 Clear Zinc
2	Radius Arm Sleeve	4	14mm Flat Washer - Clear Zinc
2	Bump Stop	2	14mm-2.00 Prevailing Torque Nut - Clear Zinc
1	Pitman Arm	1	Bolt Pack
1	4" Zone Track Bar Bracket	2	1/4" USS Washer - Clear Zinc
		2	5/16"-18 Prevailing Torque Nut - Clear Zinc

» **PRE-INSTALL NOTES**

- Notes: Separate instructions are provided with the Index ring & Rear Box kits.*
- INSTALLATION INSTRUCTIONS**
1. Park vehicle on clean, flat, and level surface. Block the rear wheels for safety.
  2. Remove the front trackbar bolt from the frame rail. Retain all hardware. **Figure 1**

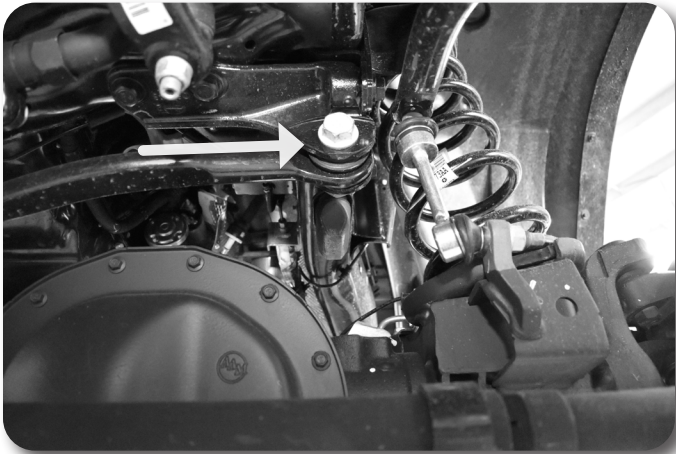


Figure 1

3. Raise the front of the vehicle and support the frame rails with jack stands. Do not support on the radius arms, they will be removed during the installation.
4. Support the front axle with a hydraulic jack.
5. Remove the factory wheels, remove the retaining clips that hold the rotor on and may interfere with aftermarket wheels.
6. Disconnect the front drive shaft from the front axle. Hang the drive shaft from the frame. Retain all hardware
7. Break the nut loose on the adjusting sleeve of the drag link. **Figure 2**



Figure 2

8. Disconnect the tie rod from the pitman arm, do not damage the tie rod boot. Mark the orientation of the pitman arm and remove the pitman arm from the sector shaft. **Figure 3**

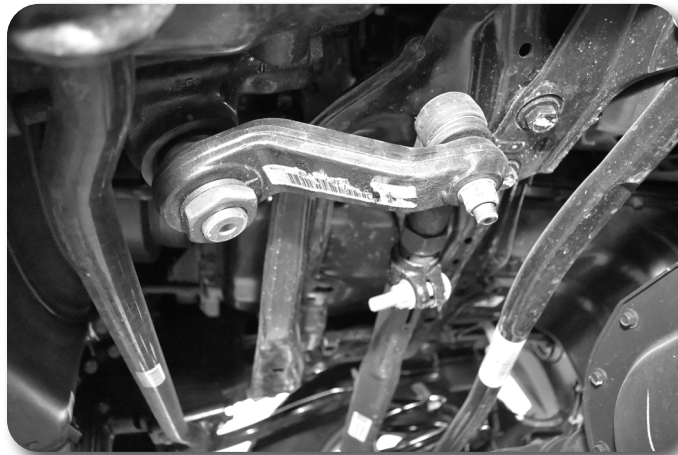


Figure 3

9. Disconnect the sway bar links from the sway bar. Keep the nuts. **Figure 4**



Figure 4

10. Disconnect the brake line bracket from the top of the radius arm mount on the axle, retain bolt, discard bracket. **Figure 5**





Figure 5

11. Disconnect the factory shock from the lower shock mount. **Figure 6** Lower the front axle and remove the coil springs.



Figure 6

12. Raise the front axle and reattach stock shocks with factory bolt. It is not necessary to put the nut tab back on. The shocks will be there to keep the axle secure. Keep a jack under the axle for extra support.
13. Grease bushings and sleeves, install into the new replacement radius arm. Thread grease fitting into eye with grease fitting facing down. **Figure 7**

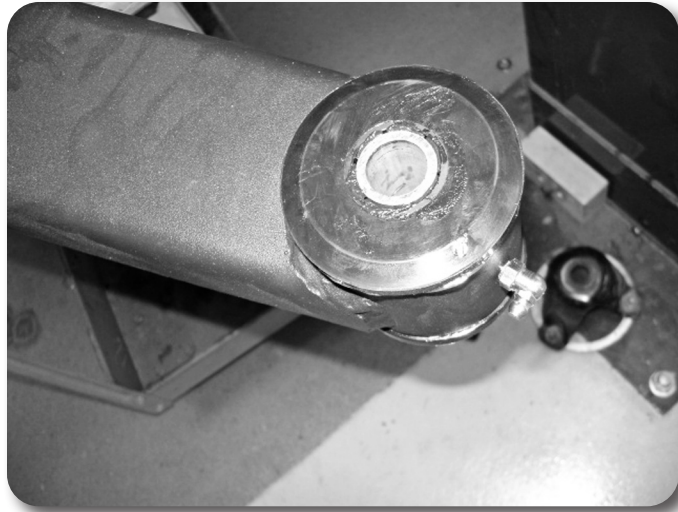


Figure 7

14. Remove the passenger's side radius arm. Retain all hardware. It will be necessary to remove the shock bolt and move the shock out of the way to get the upper hardware out.
15. Install the new radius arm. It may be difficult to hookup all of the hardware at this time. Hook up the upper radius arm bolt at the axle and the frame first. Reattach the front shock for safety. **Figure 8 & 9**

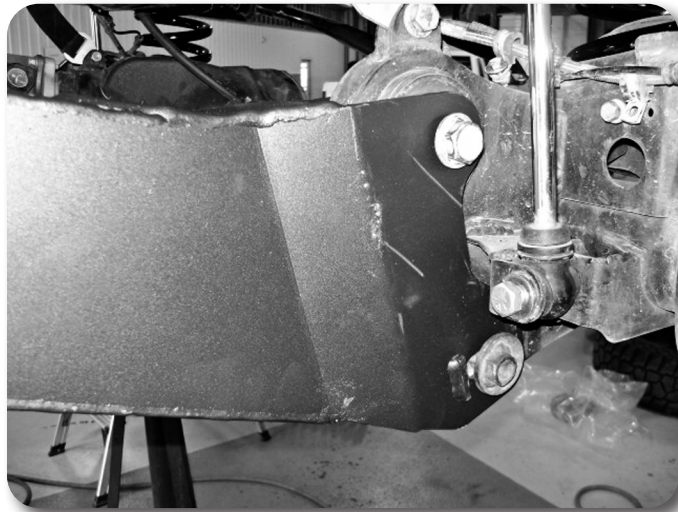


Figure 8

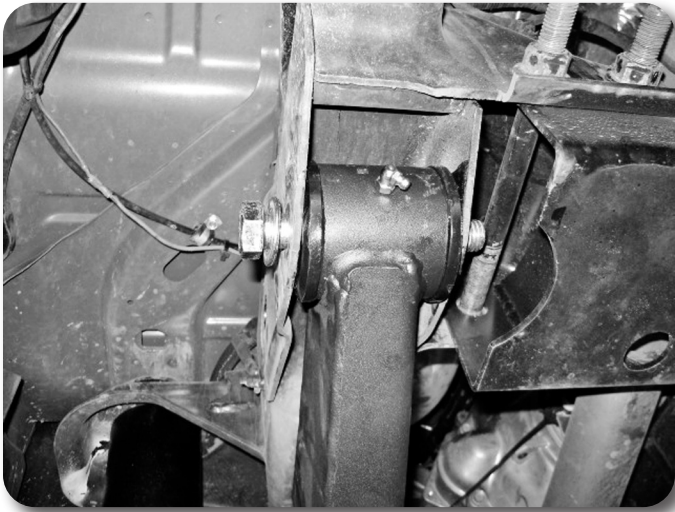


Figure 9

16. Support the pinion, disconnect the driver's side radius arm hardware and remove the stock arm.
17. Install the lower cam bolt on the passenger's side if it was unable to be installed in the previous step.
18. Install new driver's side arm with factory hardware. Reattach the factory shock for safety.
19. Adjust the cam so the bolt head is as far forward as possible (same as Pass side). Tighten radius arm hardware at the axle to 200 ft-lbs. Leave radius arm pivot hardware loose at the relocation brackets.
20. Remove the factory bump stops, it is easiest to hit them from side with a hammer to pop them out. Figure 10



Figure 10

21. Grease new replacement bump stops and raise axle with hydraulic jack to press the bump stops into position. These will be a tight fit. Figure 11



Figure 11

22. Remove the factory track bar bracket, retain the vertical hardware that goes into the cross member.
23. Install the provided trackbar bracket with factory bolts through the original vertical trackbar bracket holes in the crossmember, do not tighten.
24. Use the provided 14mm hardware, Bolt the new trackbar bracket to the Frame tab with the nut on the inside of the frame tab. Use OE hardware in the 3 remaining holes. Torque the OE bolts to 118 ft-lbs and provided 14mm hardware to 148.4 ft-lbs. Figure 12



Figure 12

25. Support front axle and remove the stock shocks. Retain the lower hardware, discard shocks and upper hardware.



26. Diesel Kits Only:  
Lower the axle and install the new coils with factory isolator. The passenger's side upper mount will need to be reindexed. There is a template at the end of the instruction sheet. Cut this out and place over the passenger's side upper mount, mark hole center, and drill to 1/2". The hole should now be directly to the 'outside' of the vehicle. Install isolator with new coil spring. Ensure that coils are seated properly, have someone help if necessary. Figure 13a, 13b, 13c, 13d



Figure 13a



Figure 13b



Figure 13c



Figure 13D

#### Gas Kits Only:

Lower the axle and install the new coils with factory isolator. The passenger's side upper mount will need to be reindexed. There is a template at the end of the instruction sheet. Cut this out and place over the passenger's side upper mount, mark hole center, and drill to 1/2". The hole should now be directly to the 'REAR' of the vehicle. Install isolator with new coil spring. Ensure that coils are seated

properly, have someone help if necessary. Figure 13e, 13f, 13g, 13h



Figure 13e

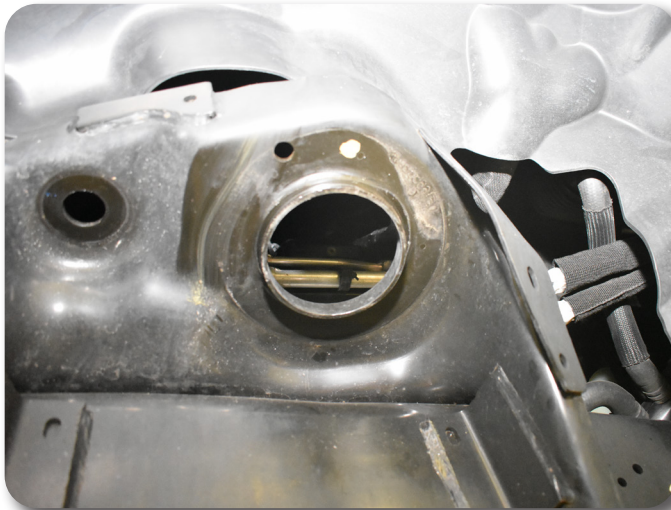


Figure 13f



Figure 13g

**Fig 13a-13h Note:**

Index the Passenger's side coil only as shown.



### Step #27 Note:

Due to radius arm design - hook up the lower shock mount first for easiest installation

### Step #29 Note:

Tie rod end should be facing up.



Figure 13h

27. Grease and install bushings and sleeves into the shocks. Attach the lower shock with factory hardware. Tighten hardware to 65 ft-lbs.
28. Attach shocks with new cup washers, bushings, and ½” nut at the top mount. Tighten the nut until the bushings begin to swell.
29. Mark or measure the amount of exposed threads on the drag link sleeve. Loosen the drag link sleeve until you can rotate the tie rod end 180deg. Rethread the drag link sleeve to the original Location. This is a starting point and will need to be adjusted after the installation is complete. Figure 14 & 15

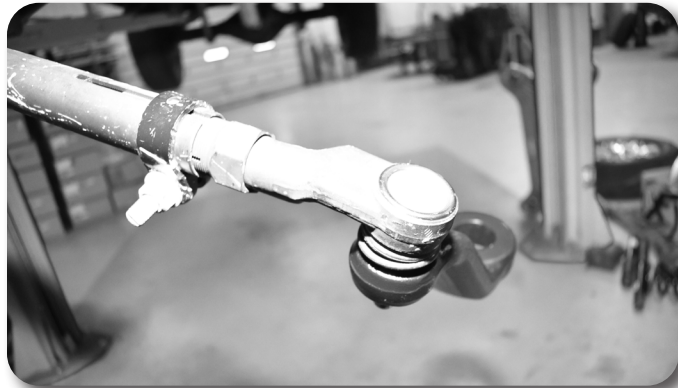


Figure 14



Figure 15



30. Install new pitman arm, use alignment mark made earlier. The included pitman arm can be installed in 2 different positions. Ensure that the pitman arm is installed in the most counter clockwise position (towards the driver side) as shown in **Figure 16A**. Loctite factory nut and install with lock washer tighten nut to 225 ft-lbs.



Figure 16A

31. Attach drag link to pitman arm with factory nut. Tighten to 27 ft-lbs plus 180deg. **Figure 16B**



Figure 16B

32. Disconnect brake line bracket from the frame location. **Figure 17 (Driver Side shown)**. Mount the factory brake line bracket to the axle with OE hardware. Slightly bend the factory axle bracket to give the brake line more slack, torque to 10ft-lbs.
33. Mount the brake line relocation bracket to the factory brake line mount location at the frame with factory hardware, torque to 9ft-lbs. Mount the brake line to the relocation bracket using the provided 5/16" hardware, torque to 101in-lbs. **Figure 17 (Driver Side)**

### Step 32 Note

Use a small adjustable wrench or pliers to help bend the bracket slightly.

### Step 33 Note

The bracket will only rotate the brake line about 45deg. On the passenger side the bracket will end up resting against the motor mount frame bracket.

## 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. Longer replacement hoses, if needed can be purchased from a local parts supplier.

3. Perform head light check and adjustment.

4. Re-torque all fasteners after 100 miles. Always inspect fasteners and components during routine servicing.



Figure 17

34. Reconnect the sway bar links with the factory hardware, torque to 81ft-lbs

**35. PLEASE SEE INDEX RING KIT INSTRUCTIONS AT THIS TIME.**

**36. PLEASE SEE REAR KIT INSTRUCTIONS AT THIS TIME.**

37. Install wheels and tighten lug nuts to factory specifications. Lower the vehicle to the ground.

38. Tighten radius arm hardware to 258 ft-lbs.

39. Turn the steering wheel to get the trackbar sleeve to align with the hole in the bracket. Tighten to 74 ft-lbs plus 160deg.

40. Recheck all hardware, check again at 500 miles, and again at regularly scheduled maintenance intervals.

41. Straighten the wheels, adjust the steering wheel to center. Torque the drag link clamp bolt to 55 ft-lbs. Do not drive the vehicle with the wheel off center or adverse traction control events may occur. An alignment is recommended at this time. The caster will be out of specification on the high side (6-7 degrees) with the cams all the way forward, this is acceptable to keep the caster from going negative during full droop incidences. If 4wd driveline or driving characteristics are not ideal, the caster can be lowered, however it is recommended to run as much as possible.

<b>Component</b>	<b>Torque (FT-LBS)</b>
<i>Front Track Bar OE Bolt</i>	<i>118</i>
<i>Front Track Bar Bracket 14mm Hardware</i>	<i>148.4</i>
<i>Front Lower Shock Bolt</i>	<i>65</i>
<i>Pitman Arm</i>	<i>177</i>
<i>Drag Link To Pitman Arm</i>	<i>27 + 180 degrees</i>
<i>Brake Line Bracket</i>	<i>10</i>
<i>Sway Bar Links</i>	<i>81</i>
<i>Radius Arm</i>	<i>258</i>
<i>Track Bar</i>	<i>74 + 160 degrees</i>
<i>Drag Link Clamp Bolt</i>	<i>55</i>





