



## **D2300 Installation Instructions**

### **2006-2011 Dodge Ram 1500 4WD**

### **2.5" Adventure Series Suspension 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.

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#### **» 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.

#### **Difficulty Level**

Easy 1 2 **3** 4 5 difficult

Estimated installation: 4-5 hours

#### **Special Tools Required**

Ball Joint Separation Tool

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

35x12.50 with 4.75" Backspacing

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#### **» 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.

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

## D2300 Kit Contents

### **Qty Part**

1	Drv Upper Control Arm
1	Pass Upper Control Arm
2	Straight grease fitting
2	Ball joint aluminum slugs
2	2-5/16" Circlip - yellow zinc
2	2-1/4"OD x 3/32 O-ring
4	Upper control arm factory style bushings
2	Upper Control arm ball joints

### **Diff Drop Kit**

1	Pass - front diff drop brkt
1	Pass - rear diff drop brkt
1	DRV - Frt diff drop brkt
1	DRV - Rear diff drop brkt
2	Rear crossmember drop bracket - Pass side
2	Rear crossmember drop bracket - DRV side
1	Modified 1/2"-13 x 2" carriage bolt
2	Spacer drv rear diff drop

1	Bolt pack #942 - diff drop hardware
1	1/2"-13 nut - yellow zinc (Non-locking)
1	1/2" SAE Thru-hardened washer - yellow zinc
4	12mm-1.75 x 30mm bolt - class 10.9 - clear zinc
4	12mm-1.75 x 60mm bolt - class 10.9 - clear zinc
2	12mm-1.75 x 70mm bolt - class 10.9 - clear zinc
6	12mm-1.75 Prevailing torque nut - clear zinc
16	1/2" USS washer - clear zinc
8	7/16"-14 x 1" bolt - grade 5 - clear zinc
16	7/16" SAE Washer - clear zinc
8	7/16"-14 nylock nuts - clear zinc

### **Strut Spacer**

2	2.5" strut spacer
1	Strut spacer bolt pack
2	Preload spacer
1	Loc-tite
2	Sway bar link spacer

## **Kit Fitment notes:**

1. On 2009 and newer TRX model trucks, do not install the preload spacer inside of the strut, this part can NOT be installed on TRX trucks.
2. TRX models, or other trucks that come with a differential skid plate can not have the skid plate reinstalled.
3. Do not use this kit with Bilstein leveling struts, or with any other form of suspension lift.

## INSTALLATION INSTRUCTIONS

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### » DISASSEMBLY

1. The factory service manual specifically states that striking the knuckle to loosen the ball joints or tie rod ends is prohibited. Striking the aluminum knuckle can damage it. A special puller tool #8677 (or equivalent ball joint tool) is recommended to be used to separate these components from the knuckle.
2. Park vehicle on clean flat and level surface. Block rear wheels for safety.
3. Raise front of vehicle and support frame rails with jack stands. Remove the front wheels
4. If equipped, remove differential skid plates. They will not be reinstalled.
5. Remove sway bar nut from the sway bar links at the sway bar, remove bushings and cup washers. Fig 1

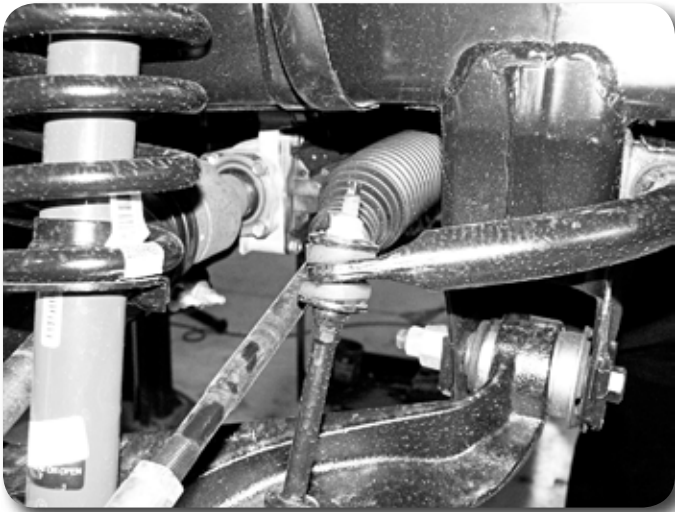


Figure 1

6. Remove the upper ball joint nut and use appropriate puller to disconnect the ball joint from the steering knuckle. Do NOT strike the aluminum knuckle with a hammer! Remove upper control arm from vehicle.
7. Disconnect the tie rod end from the steering knuckle using appropriate puller. Again do NOT strike the aluminum knuckle with a hammer!
8. Disconnect the brake caliper bracket from steering knuckle, hang caliper out of the way, do not allow the caliper to hang from the brakeline. Remove the brake rotors for safety.
9. Disconnect the ABS wire connector at the inner fender well. Remove wire from retaining clips.
10. Remove the lower strut bolt and nut. Fig 2

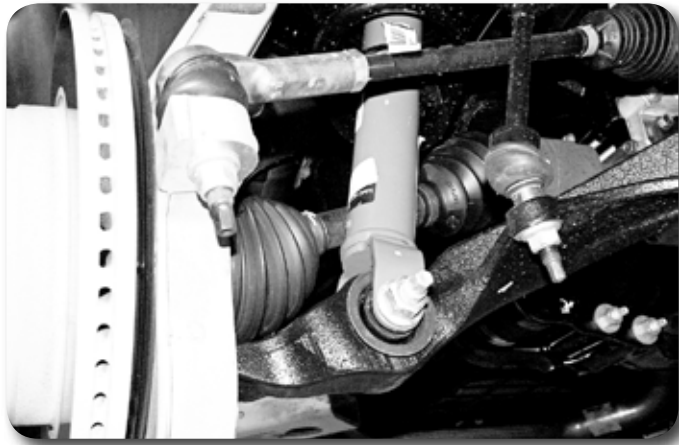


Figure 2

11. Remove upper strut nuts and remove strut assembly from vehicle.
12. Remove the factory differential skid plate (if equipped).
13. Disconnect the inner CV from the differential by striking the CV with a hammer to dislodge the internal retaining clip. Remove the CV shaft from the differential. Swing the lower control arm assembly down and out of the way Fig 3a, 3b.



Figure 3a



Figure 3b

14. Disconnect the differential breather hose from the differential. Disconnect the differential actuator wiring harness from differential Fig 4. Disconnect the front driveshaft from the differential, hang the driveshaft up out of the way. Do not allow the driveshaft to hang at full droop, the driveshaft boot may become torn.



Figure 4

15. Remove the factory rear crossmember between the lower control arm mounts.
16. Remove the retaining clips that attach the wire loom to the oil pan directly behind the driver's side differential mounts. There is not enough clearance to remove the hardware with these in place, pull the wire down slightly to gain clearance for hardware removal. A good method is to use a set of long needle nose pliers to grab onto the clips and pull down. Fig 5a, 5b



Figure 5a



Figure 5b

17. Support the front differential with an appropriate hydraulic jack (transmission jack is highly recommended or have an assistant help). Remove differential hardware and remove differential from vehicle.
18. Cut 1: Measure 'in' 9/16" from the hole as shown in the figure (front and rear). Create a cut line that goes all the way around the crossmember. Remove this section from the vehicle. Fig 6a, 6b



Figure 6a

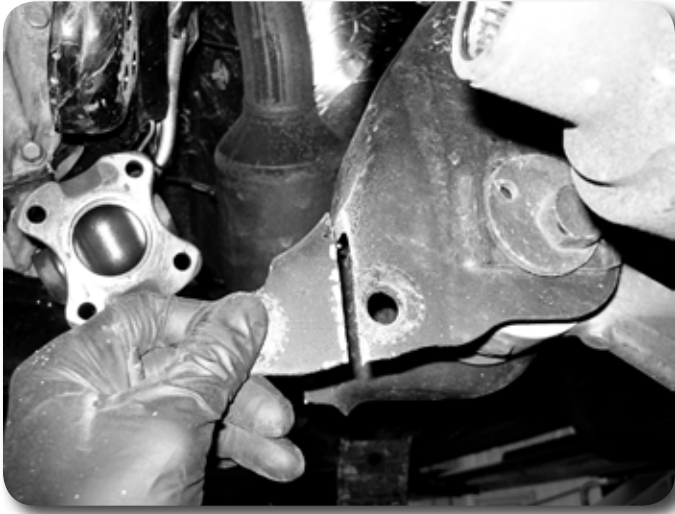


Figure 6b

19. Cut 2: Measure in 1-1/2" from the cam slot edge as shown and up 3/4" from the factory hole. Remove this section all the way to the back face to create enough differential clearance. Fig 7

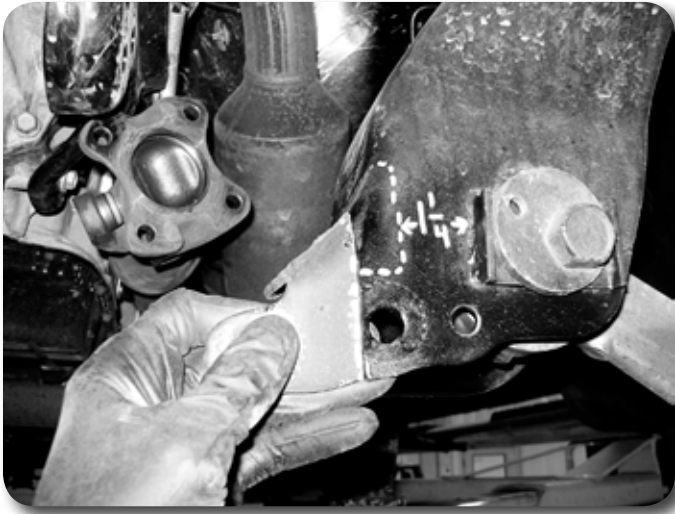


Figure 7

20. Place crossmember drop bracket against the frame as shown. Mark center of hole, and drill to 1/2", repeat on backside. Fig 8



Figure 8

### Step 20 Note

12mm hardware is in bolt pack #942. All differential drop hardware is in this pack, 06-07 model year trucks will require the use of factory hardware where non-threaded factory holes are present.

### » DIFFERENTIAL DROP BRACKET INSTALLATION:

21. Install differential drop brackets on the passenger's side There are small recesses cut in the bracket. These go at the top factory mount. Attach with 12mm x 30mm hardware with 1/2" USS washers, leave slightly loose at this time. Fig 9a, 9b



Figure 9a



Figure 9b



22. Install driver's side front differential drop bracket. Install so the offset bends have adequate clearance to factory components. Attach with 12mm x 30mm hardware with 1/2" USS washers, to the frame leave slightly loose. Fig 10

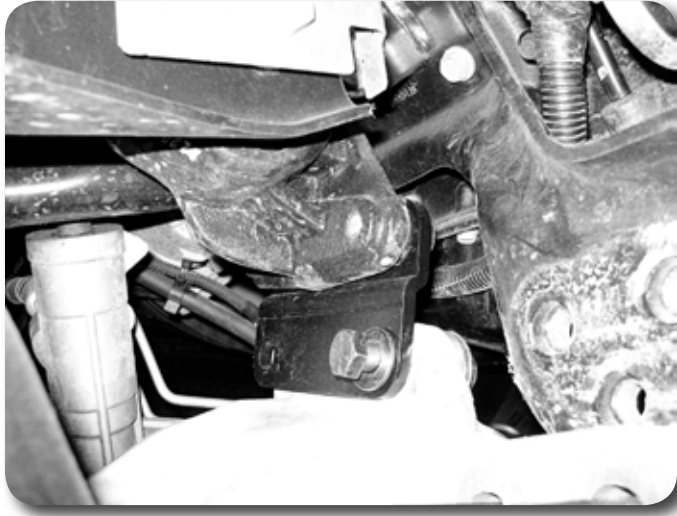


Figure 10

23. Attach the driver's side rear bracket with spacer sleeves and factory hardware into factory threaded nuts. Do not tighten at this time. Fig 11a, 11b



Figure 11a

### Fig 11b Note

Machined carriage bolt location shown



Figure 11b

24. Install differential into drop brackets. Attach as follows:
25. Driver Front 12mm x 60mm      Pass 12mm x 70mm      Driver rear 1/2" modified carriage bolt with non-locking yellow zinc nut at rear most upper, 12mm x 60mm at other 2 places.
26. Tighten all differential hardware to 65 ft-lbs.
27. Reinstall front driveshaft with factory hardware with loc-tite on threads. Tighten to 65 ft-lbs.

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### » STRUT MODIFICATION:

28. Mark the strut assembly for correct orientation. Fig 12, Fig 13



Figure 12

### Strut Modification Note:

Do not install this preload spacer with 2009 and newer TRX model year trucks



Figure 13

29. Using an appropriate strut compressor, compress the coil spring and remove the upper strut nut Fig 14.

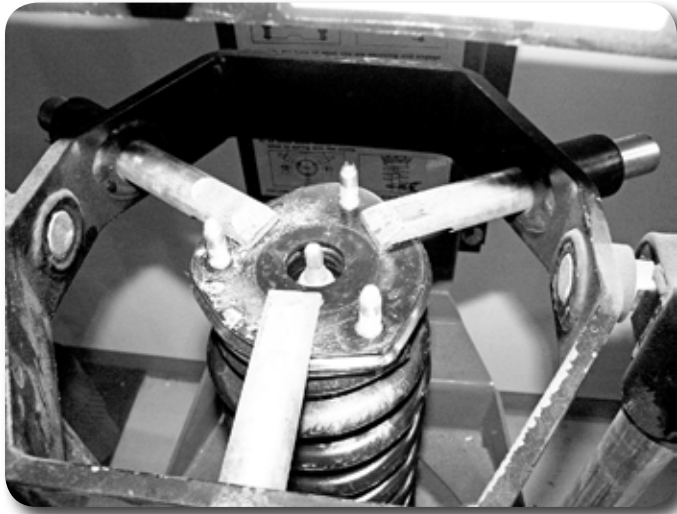


Figure 14

30. Remove the strut, strut cap, and upper coil seat from the coil spring.
31. Remove the rubber isolator from the strut cap. Fig 15



Figure 15

## Step 32 Note

Strut spacer hardware is in bolt pack #943

32. Install the preload spacer between the cap and rubber isolator and reassemble the strut with factory nut. Make sure the alignment marks are still in the correct orientation.
33. Install the new top spacer with factory nuts onto the strut assembly. Tighten to 40 ft-lbs.
34. Attach the strut assembly to the frame with new 3/8" nuts with washers. Leave hardware slightly loose.
35. Swing the lower control arm up and attach the CV shaft to the differential. Seat the CV's onto the differential shaft.
36. Attach the lower control arm to the strut with factory hardware, do not tighten at this time.
37. Install new upper control arms with factory hardware. The arms will offset the ball joint to the rear of the vehicle. Leave loose at this time.
38. Attach steering knuckle to new upper control arm with new crown nut and cotter pin. Tighten to 65 ft-lbs, do not loosen to get cotter pin to align.
39. Install o-ring, aluminum cap, and circlip into control arms. Thread grease zerk into aluminum cap. Grease the assembly. Fig 16

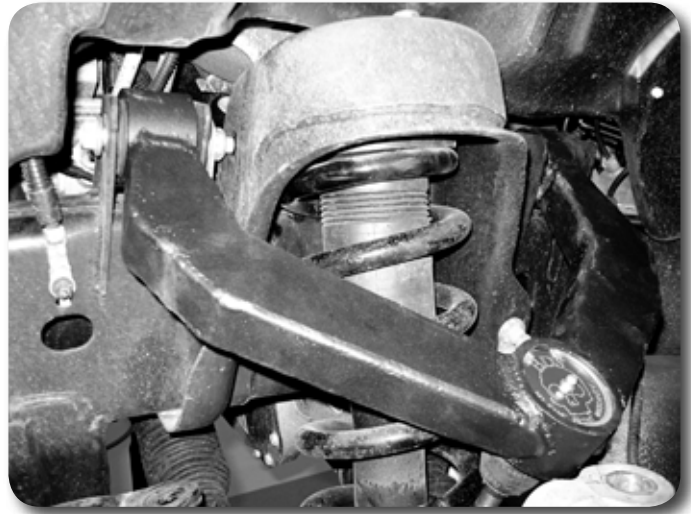


Figure 16

40. Reinstall brake rotors and calipers with factory hardware. Tighten to 130 ft-lbs
41. Attach tie rod to steering knuckle, tighten to 45 ft-lbs then an additional 90 degrees
42. Reconnect the ABS wire, secure with included zip ties.
43. Tighten upper strut hardware to 40 ft-lbs.
44. Install spacer sleeve on sway bar link, reassemble with factory bushings, cup washers, and nut. Use loc-tite on the nut. Do NOT over tighten the nut, tighten until the bushings begin to swell. It may be necessary to compress the suspension slightly to get the bushings at an appropriate angle to allow for assembly. The nylock portion should be just engaged into the threads. Fig 17

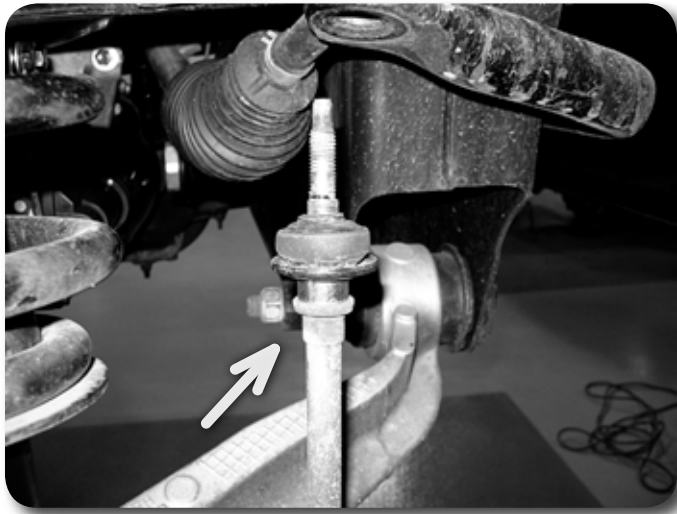


Figure 17



Figure 18

45. Install rear crossmember drop down brackets with 7/16" hardware to the front side of the vehicle. Reinstall crossmember with factory hardware. Tighten to 45 ft-lbs  
Fig 19a pass side, 19b driver's side, both shown from the back of the vehicle



Figure 19a



Figure 19b

46. Reinstall wheels, tighten to factory specifications
47. Lower vehicle to the ground. Tighten lower strut hardware to: 155 ft-lbs Upper control arm hardware to: 130 ft-lbs
48. Recheck all hardware for proper torque, check again after 500 miles and at regularly scheduled maintenance intervals.
49. A front end alignment must be performed.