ICON VEHICLE DYNAMICS®

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214010 INSTALLATION INSTRUCTIONS

10-17-2019 REV.A

PART #	DESCRIPTION
214010	03-12 RAM HD 4WD 4.5" FRONT DUAL RATE COIL SPRING KIT

COMPONENTS INCLUDED

(1) 214015 03-12 RAM HD SWAY BAR DROP (DRVR) (1) 214016 03-12 RAM HD SWAY BAR DROP (PASS)	(2) 218400 03-12 RAM HD 4.5" FRONT DUAL RATE COIL SPRING

HARDWARE INCLUDED

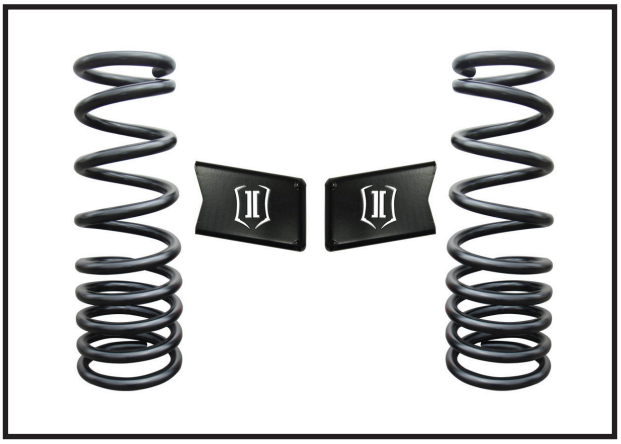
(4) 605203 7/16" X 1" BOLTS (4) 605220 7/16" NYLOCK NUTS	(8) 605230 7/16" FLAT WASHERS

TOOLS REQUIRED

JACK JACK STAND SAWZALL WITH 8" BI-METAL BLADE CENTERING PUNCH HAMMER PITMAN ARM PULLER 8MM TORQUE WRENCH 13MM SOCKET / WRENCH	15MM SOCKET / WRENCH 18MM SOCKET / WRENCH 21MM SOCKET / WRENCH 22MM SOCKET / WRENCH 24MM SOCKET / WRENCH 27MM SOCKET / WRENCH 9/16" SOCKET / WRENCH 3/4" SOCKET / WRENCH

TECH NOTES

N/A



WARNING!

*** READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION! IF THESE INSTRUCTIONS ARE NOT PROPERLY FOLLOWED SEVERE FRAME, SUSPENSION AND TIRE DAMAGE MAY RESULT TO THE VEHICLE!*

*** ICON VEHICLE DYNAMICS RECOMMENDS THAT YOU EXERCISE EXTREME CAUTION WHEN WORKING UNDER A VEHICLE THAT IS SUPPORTED WITH JACK STANDS.*

*** ICON VEHICLE DYNAMICS RECOMMENDS ALL INSTALLATION TO BE PERFORMED BY A PROFESSIONAL SHOP/SERVICE TECHNICIAN. PRODUCT FAILURE CAUSED BY IMPROPER INSTALLATION WILL NOT BE COVERED UNDER ICON'S WARRANTY POLICY.*

INSTALLATION

1. Jack up the front end of the truck and support the frame at the front frame rails with jack stands. NEVER WORK UNDER AN UNSUPPORTED VEHICLE!

2. Remove the sway bar links from the sway bar. (Set bushings, washers, and nuts aside.) Leave the links connected to the differential. (15mm)

3. Remove the sway bar from the frame and set aside. (15mm) Mark the passenger side of the sway bar and take note to prevent the sway bar from being accidently flipped during reinstallation later on.

4. Remove the upper track bar bolt from the frame. (21mm)

5. Open the hood and disconnect both negative battery terminals. (8mm)

6. Jack up the front end of the truck and support the frame at the front frame rails with jack stands. NEVER WORK UNDER AN UNSUPPORTED VEHICLE.

7. Remove tires and inner fender liners. Fender liners must be removed during this install. (8mm)

8. Remove the drag link from the pitman arm on the steering box. (21mm)

9. Support the differential with a heavy duty floor jack. With the housing supported, remove the lower shock mount bolts going through the differential. (21mm) THE DIFFERENTIAL IS EXTREMELY HEAVY AND IS LIMITED BY THE SHOCKS; MAKE SURE THE DIFFERENTIAL IS SECURELY SUPPORTED BY THE JACK.

10. Remove upper shock bushing and nut. Then remove the 3 shock tower nuts and remove the shock mount. (15mm) The shock can then be guided up through the coil spring and removed from under the hood. REMOVING THE SHOCKS WILL ALLOW THE DIFFERENTIAL TO OVER DROOP (FALL). MAKE SURE THE HOUSING IS SECURELY SUPPORTED BY THE JACK AND CAN BE LIFTED AND LOWERED SAFELY.

11. Disconnect the brake line brackets located on each the side of the axle housing in between the control arms. (13mm) (PowerWagon models: disconnect wiring to front differential locker.)

12. Slowly lowering the differential will begin to unload the coil springs.

13. The OEM upper control arms may bind on the frame before the suspension becomes completely unloaded. Remove the front bolt on both of the upper control arms to allow suspension to droop far enough to remove the coil spring. This may require some effort as the links might still be under a small amount of load. REMOVING THE UPPER ARMS WILL ALLOW THE HOUSING TO ROTATE FORWARD AND BACK, PROPERLY SUPPORT THE HOUSING USING (2) JACKS AS NEEDED. (18mm, 21mm, 22mm)

NOTES: The passenger side frame bolt for the upper link is very close to the exhaust and was installed from the factory going from the inside out. This bolt can be removed in 1 of 2 methods. #1: Removing the exhaust is quite labor intensive, but allows for ease of access to the bolt, and the same bolt can be reused OR #2: the bolt can be cut off. (A replacement bolt is provided) An extra shallow socket can reach the bolt head to loosen it. Then slide the bolt out until it hits the exhaust. Using a SawzAll with an 8" long metal cutting blade, cut off the head of the bolt and feed it through the other side. The 6.7L Diesel is the tightest, and method #2 is highly recommended.

14. The differential will now only be supported by the lower control arms and jack, the axle is extremely heavy and extreme care must be taken when positioning the axle.

15. Continue to slowly lower the differential; the coils will become fully unloaded from the mount, slowly lower the jack until the coil springs become loose enough to slip them out. Remove the coil isolator and stud ring.

16. Stabilize the differential and replace the lower links. Be sure to grease the bushings before installing. Check to make sure there is a (dual rate) delrin ring in between the bushings. Cam the lower bolts all the way out (extending the differential all the way forward. (21mm, 24mm, 27mm)

NOTES: If the ICON Coilover Conversion Kit has been purchased, refer to coilover instructions for installation.

17. Slide the new springs into place. Be sure the coil isolator is installed on the top of the coil and the appropriate stud ring is in place.

18. Slowly lift the differential until just before the springs start to compress.

19. Connect the upper links and tighten ALL link bolts. The passenger side frame bolt must be inserted from the outside of the frame. The factory bolt was in the opposite direction. Washers have been supplied for the 6.7L Diesels. Use 1 washer on the outside of the frame and 3 washers on the inside of the frame. This will space the bolt away from the exhaust and space the nut up out of the pocket in the frame allowing a wrench to access it. (18mm or 21mm, 22mm)

20. Lower the ICON shock into the coil from under the hood. Connect and tighten the lower shock mount. This may be difficult to position by reaching through the coil. Make sure the lower shock spacers are spacing the shock forward. The longer spacer should go toward the back. (21mm)

NOTES: If the ICON Shock Tower has been purchased, refer to coilover instructions for shock tower install portion.

21. Then position the shock tower over the shock. Tighten the tower to the coil bucket. (15mm) Then tighten the stemtop and bushings of the shock onto the shock tower. (3/4") Depending on which shock was purchased, it may be easier to mount the shock tower to the shock before mounting to the coil bucket.

22. The track bar lowering bracket can now be installed. First install the T-nut in the crossmember. This is a tight fitting part, some sanding may be required. Use minimal sanding. Using the supplied 14mm bolt, connect the bracket to the stock mounting location. Swing the bracket us against the crossmember and thread the 7/16" bolt into the T-nut. Snug both bolts and mark hole to drill using a centering punch. Remove bracket and drill hole to 7/16" or slightly larger. Reinstall bracket and tighten.

23. If the ICON Adjustable Track Bar Kit was purchased, replace the factory track bar with the new ICON Adjustable track Bar, making sure the side with the rod end adjustment is connecting to the differential. Adjust the collar and hiem so there are 1/4" more threads showing on the hiem than the collar. (This makes it more accessible to adjust after installation. Use the correct bearing spacers and heim spacers for your truck. Check the bolt size to determine which spacer is needed. Only insert the bottom bolt. (21mm)

24. Unbend the brake line bracket where it has been slightly crimped to the brake line. Slide the bracket about 1/2-1" closer to the brake caliper. This is necessary to allow for the additional droop in the suspension. Re-mount the brake lines in their factory location. (13mm)

25. Remove the stock pitman arm from the steering box using a pitman arm puller and replace with the ICON dropped pitman arm. Torque Nut to factory specs. Loosen and rotate the tapered end of the drag link 180 degrees so the taper is pointing up (13mm, 15mm) and connect to the pitman arm. (21mm)

26. Pull or pry the stock bumpstop out. Slide the bumpstop retainer plate up and backwards. It should lock into place and catch the original retaining tabs. Then mount the bumpstop spacer to the frame threading it into the retainer plate. Bolt the bumpstop to the spacer and tighten. (9/16")

27. Go back through and torque all the partially installed hardware.

28. Re-install the inner fender well. (8mm)

29. (Reservoir shocks only) Mount the reservoir to reservoir mount on top to the shock tower using the supplied hose clamps. (8mm)

30. Re-install the tires and lower vehicle to the ground.

31. Install the sway bar drop brackets. (15mm) The open side goes toward the center of the truck with the shield pointing down.

32. Then mount the sway bar to the drop bracket in the same orientation as was removed. (5/8")

33. Connect the sway bar to the stock sway bar links using the stock bushings and washers. (15mm)

34. With the vehicle on the ground, use the steering to move the frame until the upper track bar holes line up and install the bolt. Center the front axle by adjusting the track bar adjusting collar (If applicable). Tighten the adjusting collar pinch bolts, alternating between the two bolts, back and forth 2-3 times in order to evenly apply pressure to secure the collar. (If the OEM track bar is used, there will be no need for centering the axle).

35. This lift will affect caster and steering wheel alignment. Point the tires straight ahead, make sure the steering column is not locked, loosen the clamps on the drag link turn buckle and rotate the turn buckle to center the steering wheel. Without the use of alignment equipment you may need to test drive the vehicle and re-center the wheel if it is off slightly.

36. The steering wheel being off center can effect computer sensor readings which will effect traction control. A full alignment should be performed by professional technicians.

37. All adjustable pinch housings in the links will need to be tightened. Before tightening, align the slot in the adjuster collar with the slot in the link. this maximizes the clamping effects on both the collar and the heim joint. Tighten both bolts alternating between the 2. (3/8" 12pt) Torque them to 35 ftlbs.

38. Check the torque on all hardware. Drive the truck 1-2 miles and re-torque all nuts, bolts and lugs. Re-center the steering wheel if necessary.

39. If the shock was discharged during installation, charge the shock reservoir accordingly with pure nitrogen.

VERIFY ALL FASTENERS ARE PROPERLY TORQUED BEFORE DRIVING VEHICLE.

RETORQUE ALL NUTS, BOLTS AND LUGS AFTER 100 MILES AND PERIODICALLY THEREAFTER.

ICON VEHICLE DYNAMICS LIMITED LIFETIME WARRANTY

ICON Vehicle Dynamics warrants to the original retail purchaser who owns the vehicle on which the product was originally installed. ICON Vehicle Dynamics does not warrant the product for finish, alterations, modifications and/or installation contrary to ICON Vehicle Dynamics instructions. ICON Vehicle Dynamics products are not designed, nor are they intended to be installed on vehicles used in race applications, for racing purposes or for similar activities. (A "race" is defined as any contest between two or more vehicles, or a contest of one or more vehicles against the clock, whether or not such contest is for a prize). This warranty does not include coverage for police or taxi vehicles, race vehicles, or vehicles used for government or commercial purposes. Also excluded from this warranty are sales outside of the United States of America and Canada.

ICON Vehicle Dynamics' obligation under this warranty is limited to the repair or replacement, at ICON Vehicle Dynamics' discretion, of the defective product. Any and all costs of removal, installation or re-installation, freight charges and incidental or consequential damages are expressly excluded from this warranty. Items that are subject to wear are not considered defective when worn and are not covered.

ICON Vehicle Dynamics components must be installed as a complete kit as shown in our current application guide. Any substitutions or exemptions of required components will immediately void the warranty. Some finish damage may happen to parts during shipping and is not covered under warranty.

This warranty is expressly in lieu of all other warranties expressed or implied. This warranty shall not apply to any product that has been improperly installed, modified or customized subject to accident, negligence, abuse or misuse.

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PERFORMANCE SUSPENSION SYSTEMS AND SHOCK ABSORBERS

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