



PLEASE VISIT: Forums.CarliSuspension.com
Troubleshooting advice or to download an electronic copy of this document.

FITMENT: PERFORMANCE 2.0 - 3" LIFT

Year	Model	Part No.	Notes
2010-12	DODGE RAM 2500/3500 4x4 Diesel (12mm End Links)	CS-P20-10-D-12mm	*
2010-12	DODGE RAM 2500/3500 4x4 Hemi (12mm End Links)	CS-P20-10-H-12mm	*
2010-12	DODGE RAM 2500/3500 4x4 Diesel (10mm End Links)	CS-P20-10-D	*
2010-12	DODGE RAM 2500/3500 4x4 Hemi (10mm End Links)	CS-P20-10-H	*
2003-09	DODGE RAM 2500/3500 4x4 Diesel	CS-P20-03-D	
2003-09	DODGE RAM 2500/3500 4x4 Hemi	CS-P20-03-H	
2006-08	DODGE RAM 1500 4x4 Megacab	CS-P20-03-H	
1998.5-02	DODGE RAM 2500/3500 4x4	CS-P20-985	**
1994-98	DODGE RAM 2500/3500 4x4	CS-P20-94	**

- * 2010-present vehicles have 2 possible sizes of Sway Bar End Links. Place a socket on the nut that compresses the rubber End Link bushings; fitment of an 18mm socket will indicate the need for the 12mm part number.
- ** Requires track bar conversion bracket.

WHAT'S INCLUDED IN THE KIT

- Mutli-Rate Coil Springs
- Adjustable Sway Bar End Links
- 5 Leaf Add A Pack
- Adjustable Track Bar
- Limit Strap Kit
- Carli Valved Bilstein 7100 Shock Package

INSTALLATION INSTRUCTIONS

Note: Prior to installation, carefully inspect the vehicles steering and drive train components. Be sure to check ball joints, tie rod ends, pan-rod bar, and control arm bushings. Everything must be tight and in good working condition.

- * We recommend installation be done by a trained professional.
- * Read instructions carefully before attempting installation.
- * Secure and properly block vehicle prior to installation.
- * Front end alignment is necessary upon completion of install.
- * Re-torque all nuts and bolts Front and Rear after 500 miles to ensure tightness.

DISASSEMBLY (OF OEM FRONT END NOT AFTERMARKET)

1. Set emergency brake and block rear wheels, in front and behind tires.
2. Remove inner fender wells. Be sure to disconnect ABS sensor wire from fender well at this time.
3. Disconnect sway bar end links from sway bar and axle, and then remove end links.
4. Disconnect brake line bolts from axle on both sides. (13mm Bolts located between upper and lower control arms.)
5. Remove factory track bar by removing bolts at driver side frame mount and Passenger side axle mount.

6. Remove Nut and Washers from top of the shock. (both sides)
7. Jack up front of truck and place jack stands under frame behind lower control arms.
8. Remove wheels and tires.
9. Remove lower shock bolts and pull shocks from vehicle (both sides)
10. Remove coil springs. You will reuse OEM isolators.
11. Remove three flange nuts holding upper shock mounts to coil bucket (both sides). Do not lose track of the shock mounts, stud rings or retaining nuts as these will all be reused!

ASSEMBLY: START INSTALL ON DRIVER SIDE OF TRUCK

12. Insert stud rings through the bottom of the coil bucket and loosely install nuts to keep them from falling.
13. Install supplied mis-alignment spacers in the top of the front shock bearings.
14. Slide the supplied Billet Clevis over the high mis-alignment spacers on the top of the front shocks.
15. Run the bolt through the Billet Clevis and the shock and tighten.
16. Feed shock reservoir through the bottom and out top of the coil bucket. Reservoir faces towards front of the truck.
17. Place OEM isolator on top of Carli coil and install. Rotate the Coil so that logo is facing OUT.
NOTE: HEMI Coils are side specific, marked P and D for passenger and driver. For easier installation, separate right side tie rod end from knuckle.
18. Bolt O.E.M upper shock mount back onto coil bucket using original hardware. Be sure that the reservoir goes through the front outer opening of the shock mount.
19. Slowly jack up the axle to line up the lower shock mount with the lower bearing and mis-alignment spacers of the shock.
20. Install lower shock bolt and tighten to 100 Ft lbs.
21. Lift axle to compress spring.
22. Line up the top of the Billet Clevis with the hole in the O.E.M shock mount. The step on the clevis needs to rest inside the hole on the OEM Tower. Be sure Billet Clevis is indexed properly and not "cocked".
23. Thread supplied $\frac{3}{4}$ "x16x1 $\frac{1}{4}$ " bolt and washer into top of Billet Clevis, securing it to the O.E.M. shock mount. **DO NOT USE AN IMPACT!** Torque to 50 ft/lbs
24. Position reservoir mount on the frame rail in front of the coil. Ensure to position the mount as high on the frame as possible to avoid the sway bar contacting the reservoir when mounting.
25. Install reservoir mount with supplied self-tapping screws.
26. Secure reservoir to the mount with supplied hose clamps.
27. Repeat steps for Passenger side.
28. **FOR YEAR 03-05:** Drill the lower sway bar end link mount on the axle to $\frac{1}{2}$ ". The mount is located off the front of the lower coil seat.
FOR YEAR 2006+: Trucks DO NOT need drilling Use supplied reducer sleeve)
29. Assemble the new Stainless End links 1.5" longer than stock.
30. Install Stainless end links onto truck with supplied hardware and tighten. **NOTE THE ORDER** of spacers and washers, from the outside in goes -bolt, washer, OEM mount, washer, spacer, heim end, spacer, washer, and nut. You will connect to sway bar when truck is at ride height.
31. Reinstall wheels and tires and set truck on ground.
32. Connect sway bar to end links reutilizing factory pillow bushing and nut.
33. Tighten until rubber bushings start to crush.
34. Assemble the Carli Track Bar with the heim joint on the frame end and the Bushing/crush sleeve at the frame end.
35. Choose the appropriate crush sleeve size for the factory bolt and install the crush sleeve into the bushing using synthetic chassis grease.
36. Apply loctite to heim joint threads and set the track bar to 39-1/8" center to center (of the eyes). Tighten locknut to 150 ft. lbs. to ensure proper thread preload.
37. Insert pan-rod bar into axle side mount and tighten bolt/nut assembly to 185 ft. lbs if 14mm bolt (signified by 18mm socket fitment of the bolt head) or 220 ft. lbs if 16mm bolt (signified by 21mm socket fitment of the bolt head).
38. Insert pan-rod bar into frame side mount and tighten bolt/nut assembly to 185 ft. lbs if 14mm bolt (signified by 18mm socket fitment of the bolt head) or 220 ft. lbs if 16mm bolt (signified by 21mm socket fitment of the bolt head).
2010+ TRUCKS: Install provided stainless steel shim into upper track bar bracket! See instructions in your track bar box for more detail on track bar installation.
NOTE: If the holes do not line up at the frame side, have someone key on the ignition (do not start the truck) and move the steering wheel to align the bar and the bracket hole.
39. Reinstall fender wells and secure ABS lines.
40. Make sure to install vent tube from the factory shock tower to the edge of the coil bucket on the driver side.



LIMIT STRAP PLACEMENT

41. Clean the metal on the edge of the flat front of the lower coil bucket on the axle, inboard of the End Link mount.
42. Place the supplied Limit Strap Tab so that it angles UP and points straight forward. Ensure its placed as high and inward as the mounting surface will allow.
43. Tack it onto the axle and double check clearance
44. Complete the weld
45. Apply paint to prevent rust.
46. Mount the Limit Strap to the bottom tab.
47. With the shocks installed, droop the front axle as far as it will go.
48. With the axle drooped, pull the limit strap upward (vertically) and hold it to the front of the upper coil bucket.
49. Mark the center of the hole on the limit strap.
50. Allow the limit strap to hang once marked then measure 1.5 inches UP from the mark you just made and make another mark. This will allow for the stretch of the Limit Strap during heavy cycling.
51. Center punch and drill hole to 1/2" and clean.
52. Install Limit Strap when the vehicle is on the ground.



REAR INSTALLATION – ADD-A-PACK (FULL SPRING USERS, MOVE TO NEXT SECTION)

53. Raise the Rear of the truck. If working without a shop hoist, support truck with suitable safety stands. To do this put the truck in park, block front wheels; both in front and behind tires, then disengage emergency brake. Place floor jack underneath rear axle and raise truck. Place safety jack stands under the frame to support the truck and lower the truck onto jack stands.
54. Remove rear wheels.
55. Use a floor jack to raise the rear axle just enough to take tension from the shocks and remove the shocks.
56. Working on one side at a time, remove rear U-bolts attaching rear axle to driver side leaf spring.
57. Carefully lower the side of the rear axle from which the U-Bolts were just removed onto jack stands.
DO NOT ALLOW AXLE TO HANG FROM ANY HOSES OR CABLES
58. Secure spring assembly together with 2 C-clamps on outer edges of lower leaf. Do not include the overload leaf (thick leaf on the very bottom that doesn't follow the contour of the pack)
59. Remove the leaf spring center pin(s) and lower Overload Leaf. Again, this is the 1" thick leaf that doesn't follow the contour of the other thinner leaves. Discard the Overload.
60. Install Carli Suspension 5 leaf Add-A-Pack in place of the discarded overload using as many (if any) factory spacer blocks with index button on the bottom. The factory spacers are simply a height adjustment; only reinstall if you want more rear lift than advertised.
NOTE: You may have to slightly loosen U-bolts on opposite side of the truck to droop axle enough for install of Add-A-Pack.
61. Install supplied center pins using 3/4" socket Tighten center pin(s) and spring clips. Tighten center pin(s) until the add-a-pack is secure and the leaf pack is fully compressed.
NOTE: 3500 Trucks equipped with an Upper Overload can retain this overload is desired. It will be necessary to permanently remove the 3/8" x 3" long bolts on the square U-clamps that come attached to the Add-A-Packs. This will allow the Upper Overload to perform as designed. The U-bolts AND Center Pins are not guaranteed to be long enough; the installer should verify the U-bolts AND Center Pins will be long enough before disassembly of the rear.
62. Carefully raise axle until the center pins are properly indexed in the axle perch.
63. Re-mount axle to spring using supplied U-bolts, washers and nuts. Spin the hardware on hand tight ensuring similar threads showing above the U-bolt nuts.
64. Torque U-bolt nuts in cross pattern to 110 ft.-lbs.
65. Repeat installation of add-a-pack on passenger side.
66. Install rear wheels semi tight and lower the truck to the ground.
67. Torque lug nuts to 115 ft. lbs.

FULL REAR SPRINGS (2 PERSON OPERATION!)

68. Raise the Rear of the truck. If working without a shop hoist, support truck with suitable safety stands. To do this put the truck in park, block front wheels; both in front and behind tires, then disengage emergency brake. Place floor jack underneath rear axle and raise truck. Place safety jack stands under the frame to support the truck and lower the truck onto jack stands.
69. Remove rear wheels.
70. Supporting the axle, loosen the U-Bolts on the opposite you are working on to allow the axle to droop.
71. Remove the rear shocks at this time.
72. Remove the E-brake cable from the rotor assembly and re-route it OUT of the spring hanger. Only remove it from the spring hanger, it does not need to be removed from the body mount window. Let the cable hang until reassembly later.
73. Loosen the front bolt at the spring hanger, then the bolt on the frame at the rear shackle.
74. Remove U-Bolts and top plate
75. Slowly drop axle until the factory leaf comes off the axle pad.
76. Remove the already loosened bolts and take out the leaf.
77. Remove the shackle from the leaf spring (paying attention to its orientation when it was removed.)

- 78.** Install Factory Shackle onto new Carli Leaf Spring in the same orientation as the factory spring.
- 79.** Torque the shackle bolt to 100 lbs/ft. The shackle will go on the side of the single wrap, the double or triple military wrap is the front of the leaf spring.
- 80.** Lift spring on to axle and reinstall. **SNUG THE HANGER AND SHACKLE FRAME BOLTS, BUT DO NOT FULLY TIGHTEN.**
NOTE: If there is not sufficient room to install the leaf spring, it may be necessary to loosen the u-bolts on the opposing side to get the needed droop.
- 81.** Install supplied new U-Bolts and top plate. Snug up, but leave loose to assist with the other side.
- 82.** Repeat process on opposite side.
- 83.** Reattach E-Brake cable to rotor assembly. Use supplied rubber clip to prevent the E-brake cable from moving during driving. It can be attached to the 3/8" bolts that go through the square u-brackets attached to the leaf springs.



REAR SHOCKS

- 84.** Mount the rear shocks using the factory hardware.
- 85.** Bilstein Shocks mount shaft down and body up!
- 86.** Torque the shock bolts to 100 lbs/ft.



DRIVER



PASSENGER SIDE

PLEASE PAY ATTENTION TO PASSENGER SIDE! THE RESERVOIR MUST EXIT TOWARDS THE FRONT OF THE TRUCK! IT CANNOT EXIT TOWARD THE BED CROSSMEMBER!

- 87.** Torque the shock bolts to 100 lbs/ft.
- 88.** REAR RESERVOIR MOUNTING: Mount Reservoirs to the shock body using supplied rubber spacers and hose clamps.

FINAL ASSEMBLY

- 89.** Install fender liners and reattach ABS clips.
- 90.** Install wheels/tires and set truck on ground.

- 91.** Torque lug nuts to 115 lbs/ft.
- 92.** Install Limit Straps onto welded tab and coil bucket hole with supplied hardware.
- 93.** Align truck; re-torque all hardware after 500 miles.

OPERATIONAL INSPECTION AND SETTINGS:

Please note, the shocks included with this system come nitrogen charged, they require specific nitrogen pressure to operate correctly. Although they're shipped charged, customers should depress the shaft into the body of the shock to ensure it pushes out on its own. If the shaft remains in the body, it should be checked for nitrogen.

Ensure the vehicle is supported properly and that the axle is at full droop when verifying nitrogen pressure. Many gauges will release nitrogen in the process of checking the pressure; ensure your gauge will maintain shock pressure during verification (Lock out Gauge/King Shock Charging Manifold) to avoid loss of nitrogen. If you're unsure of whether the shocks are charged or not, many suspension shops, welding supplies, tire shops, or motorcycle repair shops will be able to check or refill your nitrogen charged shocks.

Without the proper nitrogen pressure, Carli Suspension's shocks will not operate properly and will be more susceptible to damage to the seals and internals of the shock. Again, No shocks will be replaced under warranty if the shocks were not properly charged before installation.

Nitrogen Pressures:

- Bilstein 7100: 200 psi
- Bilstein 9100: 225 psi
- King 2.5: 225 psi
- King 3.0: 225 psi
- F/R Hydro Bumps: 250psi
- 7100 Plunger shock: 250psi

FACTORY TORQUE SPECS

Shock Absorber Upper Nut	40ftlbs
Shock Absorber Lower Bolt	100ftlbs
Shock Tower to Frame	55ftlbs
Lower Ball Joint Nut Initial Torque	35ftlbs
Lower Ball Joint Nut Final Torque	148ftlbs
Upper Ball Joint Nut	70ftlbs
Lower Control Arm Frame Nuts	200ftlbs
Lower Control Arm Axle Nut	200ftlbs
Upper Control Arm Frame Nuts	120ftlbs
Upper Control Arm Axle Nut	120ftlbs
Stabilizer Bar Frame Bolt	45ftlbs
Stabilizer Link Axle Bracket	110ftlbs
Stabilizer Link Stabilizer Bar Nut	27ftlbs
Stabilizer Link Axle Bracket (Power Wagon)	110ftlbs
Stabilizer Bar Nut (Power Wagon)	110ftlbs
Hub/Bearing Bolts	149ftlbs
Axle Nut	132ftlbs Beginning 263ftlbs Final Torque
Track Bar to Frame (2500/3500 4x4)	200ftlbs
Track Bar to Axle (2500/3500 4x4)	200ftlbs
Tie Rod End Nut	55ftlbs
ABS Assembly Mounting Bolts	11ftlbs
ABS Assembly ABM Screws	31 inlbs
ABS Assembly Brake Line Fittings	170 inlbs
Dynamics Sensor	97 inlbs
Wheel Speed Sensors, Front Sensor Bolt	190 inlbs
Wheel Speed Sensors, Bracket To Knuckle	60 inlbs
Wheel Speed Sensors, Rear Sensor Stud	200 inlbs
ABM Mounting Screws	53 inlbs
RWAL Module Mounting Bolts	11ftlbs
RWAL Valve Brake Line Fittings	170 inlbs
Rear Wheel Speed Sensor Mounting Bolt	200 inlbs
Brake Booster Mounting Nuts	21 ftlbs
Master Cylinder Mounting Nuts	160 inlbs
Reservoir Retaining Screws	6 ftlbs
Caliper Bleed Screws	14 ftlbs
Caliper Mounting Pins, Front	24ftlbs
Caliper Mounting Pins, Rear	22 ftlbs
Caliper Adapter Mounting Bolts, Front (1500)	130ftlbs
Caliper Adapter Mounting Bolts, Front (2500/3500)	275ftlbs
Caliper Adapter Mounting Bolts, Rear (1500)	120ftlbs
Caliper Adapter Mounting Bolts, Rear Upper (2500 and 3500)	163ftlbs
Caliper Adapter Mounting Bolts, Rear Lower (2500 and 3500)	190ftlbs
Junction Block Bolts, Front (1500)	14ftlbs
Junction Block Bolts, Rear (1500)	18ftlbs
Junction Block Bolts, Rear (2500/3500)	7.5ftlbs
Brake Pedal Assembly Bracket Bolts (1500)	23ftlbs
Brake Pedal Assembly Bracket Nuts (2500/3500)	21ftlbs
Support Plate Mounting Bolts/Nuts (1500)	75ftlbs
Support Plate Mounting Bolts/Nuts (2500/3500)	150ftlbs
Brake Line Fittings, Master Cylinder	14ftlbs
Brake Line Fittings, Junction Block (Both)	14ftlbs
Caliper Brake Line Banjo Bolt, Front	20ftlbs
Caliper Brake Line Banjo Bolt, Rear	20ftlbs
Brake Hose Bolts To Frame, Front	7.5 ftlbs
Brake Hose Fitting	14ftlbs
Parking Brake Pedal Assembly (1500)	18ftlbs
Parking Brake Pedal Assembly (2500/3500)	14ftlbs
Hub/Bearing Bolts (1500)	120ftlbs
Rotor to Hub Bolt, Rear (2500 and 3500 DRW)	114ftlbs
Extension to Rotor Nut, Front (2500 and 3500 DRW)	128ftlbs
Hub/Bearing Bolts, Front (2500 and 3500 4X2)	130ftlbs
Pitman Arm Gear Shaft Nut (2500, 3500)	177ftlbs
Drag Link to Pitman Arm (2500, 3500)	100 ftlbs

Drag Link to Tie Rod (2500, 3500)	100 ftlbs
Drag Link Adjuster Clamp (2500, 3500)	40 ftlbs
Tie Rod End to Knuckle (2500, 3500)	78 ftlbs
Tie Rod End Adjuster Clamp (2500, 3500)	40 ftlbs
Stabilizer Bar Link to Axle (2500, 3500)	50 ftlbs
Steering Damper to Axle or Linkage(2500, 3500)	75ftlbs
Steering Damper Bracket U-Bolt Nuts (2500, 3500)	45 ftlbs
Track bar to Axle - M16 fastener (2500, 3500)	200 ftlbs
Track Bar to Frame - M16 fastener (2500, 3500)	200 ftlbs
Lug Nut 9/16 X 18 with 60° Cone	130 ftlbs
Lug Nut 9/16 X 18 with 60° Cone (2500, 3500 - SRW)	140ftlbs
Lug Nut 9/16 X 18 with Flat Washer (3500 - DRW)	145ftlbs
Lug Nut 9/16 X 18 with Flat Washer (4500, 5500 - DRW)	148ftlbs
Spare Tire Winch	15ftlbs
Jounce Bumper Bolts	21.5ftlbs
Shock Absorber, Lower Nut/Bolt	100ftlbs
Shock Absorber, Upper Nut/Bolt	100ftlbs
Spring Clamp U-Bolt Nuts	110ftlbs
Spring Front Nut/Bolt to Frame	254.5ftlbs
Spring Shackle Nut/Bolt, Upper/Lower	160ftlbs