

7" Critical Path Long Arm Lift Kit Installation Instructions: Jeep ZJ Grand Cherokee 1993-1998



Iron Rock Off Road, Inc.

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Box 1 (24x12x12)

- ZJ 7" Front springs (1 pair)
- Standard shocks (without shock upgrade)**
 - Front shocks RC 8170 (2)
 - Rear shocks RC 8111 (2)
- With nitro shock upgrade only**
 - Front shocks RC 9170 (2)
 - Rear shocks RC 9111 (2)
- With DT8000 shock upgrade only**
 - Front shocks DT 8421 (2)
 - Rear shocks DT 8403 (2)

Box 2 (36x8x8)

- Instructions
- Invoice
- Iron Rock Off Road logo decal (2)
- Ironrockoffroad.com decal (1)
- ZJ 7" Rear springs (1 pair)
- XJ/ZJ double shear adjustable track bar (1)
- XJ/ZJ double shear track bar bracket (1)
- ZJ adjustable rear track bar (1)
- Rear sway bar link set #007 (1 set)
- ZJ Brake Line set (1)
- 3" front bump stop spacer/rear coil spring retainer (4)
- Front sway bar links 11.25" center to center (2)
- Drop pitman arm (XJ5ARM) (1)

Hardware kit 9 (shocks)

- Front shock barpin BP7 (2)

Hardware kit 13 (rear track bar)

- Track bar bushing half (4)
- Track bar bushing sleeve 12mm I.D. (2)
- M12 x 70mm class 10.9 hex bolt (2)
- M12 class 10.9 hex nut (1)

Hardware kit 20 (front track bar)

- Track bar bushing half (4)
- 7/16" I.D. track bar bushing sleeve (1)
- 7/16 x 2 1/2"lg gr8 hex bolt (1)
- 7/16 gr8 hex nut (1)
- 12mm track bar bushing sleeve (1)
- 7/16 flat washers (2)
- 12mm x 80 hex bolt, class 10.9 (1)
- 12mm hex nut, class 10.9 (1)
- 7/8-14 jam nut (1)

Hardware kit 29 (track bar jam nut)

- 7/8-14 jam nut (1)

Hardware kit 34 (front long arm subframe)

- 1/2 x 1-1/2 gr8 hex bolt (5)
- 1/2 x 6-1/2 gr8 hex bolt (1)
- 7/16 x 1-1/4 gr8 hex bolt (8)
- M10 x 100mm hex bolt (2)
- 1/2 gr8 hex nut (6)
- 7/16 gr8 hex nut (8)
- 1/2 gr8 lock washer (6)
- 1/2 USS washer (6)
- 3/8 USS washer (8)

Hardware kit 47 (rear coil spring retainer)

- 3/8 x 4 carriage bolt (2)
- 3/8 USS washer (2)
- 3/8 hex nut (2)

- ZJ rear coil spring retainer washer (2)
- ZJ Rear coil spring retainer carriage bolt insert (2)

Hardware kit 58 (Front Sway Bar Links)

- 3/4" I.D. hourglass shock bushings (4)
- 12mm I.D. sway bar bolt sleeves (4)
- 12mm x 60mm class 10.9 hex bolt (2)
- 12mm class 10.9 hex nut (2)
- M10 x 30 cl10.9 hex bolt (2)
- 3/8 USS washer (2)
- M10 cl10.9 hex nut (2)
- Sway bar link u-bracket (2)

Box 3 (24x12x12)

- ZJ Front long arm subframe center section (2 hole or 4 hole specific to customer vehicle) (1)
- ZJ Front long arm subframe left outer (1)
- ZJ Front long arm subframe right outer (1)
- Adjustable rear (short) lower control arms with bend (2)
 - Bushings Installed
 - 1-1/4-12 Jam Nut (2)
- Adjustable rear (short) upper control arms (2)
 - Bushings installed
 - 1-14 Jam Nut (2)

Unboxed

- ZJ Iron Y LCA (~36-1/2" center to center)
 - Bushing installed
 - Super flex joint assembled, adjusted, and set screw installed
 - Caster adjuster assembled including 5/16 x 1 gr5 carriage bolts (4), gr8 nuts (4), and 1/4" USS washers (4)
 - M10 x 90 cl10.9 hex bolt, 3/8" USS washers (2), and m10 cl10.9 nylock nut
- ZJ Passenger side LCA (~36-1/2" center to center)
 - Bushing installed
 - Super flex joint assembled, adjusted, and set screw installed

Installation Instructions:

Safety Warning: *Important! Read before installation.*****

Installing a suspension lift kit raises the center of gravity of the vehicle. This increases the possibility of a rollover accident. Avoid sudden maneuvers at high speed and avoid all situations where a side rollover may occur. In addition larger tires decrease braking performance, please drive accordingly. We recommend a tire and wheel combination that makes the vehicle's track width wider (wheels with less backspacing). This will lower the center of gravity and add stability. We also recommend that this system be installed by a qualified professional. Knowledge of suspension component function is necessary for safe installation and post installation inspections. Be sure to re-torque all suspension components after the first 100 miles of use, and frequently inspect all safety critical suspension components.

Before you begin:

- o Read all safety warnings.
- o Read and understand installation instructions.
- o Check all steering and suspension components for wear and replace as needed.
- o Contact Iron Rock Off Road with any questions before, during, or after installation.
- o You will need a hand drill and good quality 7/16" drill bit.
- o You will need undercoating and anti-seize compound.
- o You will need a good quality pitman arm puller.
- o **Ensure that all parts are present and in good condition per attached shipping checklist!**

Prepare the parts for installation:

1. Locate the front track bar and hardware kit 20. Remove threaded end and install jam nut. Adjust length to 34" center to center as a starting point. (This may need to be readjusted after a short test drive). Lubricate poly bushings and inner sleeves with multi-purpose grease and install into track bar. 12mm I.D. inner sleeve at threaded end, 7/16 I.D. inner sleeve other end. Leave remaining hardware in the bag for future use.
2. Locate the rear track bar, hardware kit 13, and hardware kit 29. Remove threaded end and install jam nut. Adjust length to 32-3/4" center to center as a starting point. This may need to be readjusted after a short test drive. Lubricate poly bushings and inner sleeves and install into track bar. Leave remaining hardware in the bag for future use.
3. Lubricate and install hourglass shock bushings into shocks (if needed). Lubricate and install 12mm I.D. x 1.5" long inner sleeve into rear shocks at body end (bottom). Lubricate and install barpin into front shocks at body end (bottom). It helps to place the barpin in a vice facing up and lower the shock onto the barpin using a twisting motion.
4. Locate front Sway bar links and hardware kit 10. Lubricate and install hourglass bushings into sway bar links. Lubricate and install 12mm I.D. inner sleeves into each hourglass bushing. Leave remaining hardware in the bag for future use.
5. Locate rear lower control arms. Install jam nuts onto male threads. Adjust length to 18-1/2" center to center as a starting point.
6. Locate rear upper control arms. Install jam nuts onto male threads. Adjust length to 15-1/6" center to center as a starting point.

Subframe Installation:

7. Lift front of vehicle and support with tall jack stands under the axle.
8. Lift rear of vehicle and support with tall jack stands under the axle.
9. Ensure the vehicle is safely supported.
10. Optional welding instructions: Some hardcore off roaders will wish to weld the subframes in place. This is optional and not required even in abusive off road situations. Welding should only be performed by a qualified professional welder. If you wish to weld the subframe in place, follow the same installation procedure as the bolt in with the following changes: Clean the unibody down to bare metal around the outside edge of the

subframe. Do not undercoat in areas that will be welded. Clean the outside edge of the subframe down to bare metal where it meets the unibody. After bolting in both subframes, stitch weld the subframe to the unibody using 1" of weld and 1.5" gap between welds around the outside edges and front and rear edges (no welds on the inside edges). The unibody is thin .075" thick sheet metal so direct most of the heat toward the 1/4" thick subframe. Allow time between welds and take all necessary precautions to avoid burning through or overheating the unibody. Beware of any nearby flammable materials such as fuel lines, brake lines, wiring etc... After the welds have cooled, clean any exposed metal, apply primer, and apply undercoating.

11. Locate the front subframe (3 pieces) and hardware kit 34. Loosely assemble the 3 pieces together and tighten bolts finger tight. Use the upper holes that give 1" transfer case drop. Assemble all bolts with the nuts on the outside. The 6 1/2" long bolt goes on the passenger side upper hole with the nut toward the rear (opposite the "Iron Rock Off Road" text).
12. Under the Jeep, slightly lift transfer case and support with jack stand.
13. Remove factory crossmember.
14. Apply anti-seize compound to all bolts. If you wish to weld the subframe in place (optional, not required), clean the unibody down to bare metal around the outside edge of the subframe, do not undercoat in areas that will be welded.
15. Apply undercoating to mating surface of uni-frame and install new subframe using existing bolts.
16. Drill the four 7/16" mounting holes per side.
17. Install 7/16 x 1-1/4 bolts, washers, and nuts with washers and nuts on top.
18. Torque all 8 bolts to 65 foot pounds.
19. Torque factory 10mm bolts to 50 foot pounds.
20. Torque all seven 1/2" subframe to subframe bolts to 90 foot pounds.

Front suspension:

21. Lift front of vehicle and support with tall jack stands under the unibody frame.
Tip: break lug nuts loose before lifting vehicle if necessary.
22. Ensure that vehicle is safely supported.
23. Remove front tires.
24. Support front axle with a floor jack (do not lift vehicle).
25. Remove front shocks.
26. Remove front sway bar links.
27. Remove front track bar and the bracket that attaches track bar to unibody. No need to separate the track bar from the bracket.
28. Remove front upper and lower control arms.
29. Allow axle to droop as much as possible.
30. Remove front coil spring clamps and coil springs.
31. Remove bump stop and bump stop cups.
32. Locate front coil spring retainers (2" O.D. x 3" long plastic spacers). Apply anti-seize compound to provided M10 x 100mm bolts and install coil spring retainers between bump stop cup and unibody.
33. Install coil springs. Ensure coil spring is aligned to spring bucket on axle. Longer springs go in front.
34. Locate front track bar, track bar mounting bracket, and hardware kit 20.
35. Install the track bar bracket onto the unibody and torque bolts to 92 ft. lbs.
36. Install the track bar and torque bolt at axle to 74 ft. lbs., and bolt at bracket to 80 ft. lbs.
37. Locate front sway bar links (11.25" center to center), two u-brackets, and hardware kit 10.
38. Install sway bar link u-brackets to the sway bar using 1/2 x 1 1/2" grade 8 hex bolts, lock washers, and nuts. Brackets mount to the bottom of the sway bar with the bolt facing up and the lock washer and nut on top of the sway bar. Rotate brackets until offset toward outside of vehicle. Align brackets, torque bolts to 95 foot pounds
39. Install sway bar links driver's side first using provided M12 x 60mm hex bolt and nut through the u-bracket with the nuts toward the outside of the vehicle, and the original bolt, nut, and washer at the axle. Torque all nuts to 78 foot pounds.
40. Remove brake hoses and replace with supplied hoses. Rotate the hoses away from other items to ensure no rubbing or chaffing.
41. Locate front shocks, and remainder of hardware kit 33.
42. Install front shocks using provided bolts. Tighten upper stud mount nuts just enough to slightly compress the bushings. *Note: Overcompressing these bushings will result in damage to the bushings and premature bushing failure.
43. Install passenger side front lower control arm using factory bolts.
44. Install driver's side Iron Y arm. Start with the lower axle side bolt, then upper axle side bolt, then unibody side bolt.
45. Remove drag link from pitman arm (the arm that connects the steering gearbox to the drag link) then remove pitman arm from steering gearbox using a pitman arm puller (the arm that connects the steering gearbox to the drag link). Install provided pitman arm. Apply red locktite to threads and torque pitman arm nut to 185 foot pounds.
46. Remove drag link (goes from pitman arm to passenger side steering knuckle). Add a bend, just above where the tie rod connects. Bend roughly 5 degrees outward, or just enough to clear the sway bar mount while turning with the suspension fully drooped.
47. Torque all lower control arm bolts to 120 foot pounds. Set the caster adjuster for maximum caster as a starting point. Torque the upper control arm nut to 60 foot pounds. Torque the 5/16" locking nuts to 15 foot pounds.
48. Any remaining loose bolts will be tightened after rear suspension is installed.

Rear Suspension:

49. Lift rear of vehicle and support with tall jack stands under the unibody frame.
Tip: break lug nuts loose before lifting vehicle if necessary.
50. Ensure that the vehicle is safely supported.
51. Remove rear tires.
52. Support rear axle with floor jack (do not lift vehicle).
53. Remove rear shocks.
54. Remove rear sway bar links.
55. Remove rear track bar (most ZJ's require a T55 torx socket for the track bar bolts).
56. Remove upper and lower control arms.
57. Allow axle to droop as much as possible.
58. Remove coil spring clamps.
59. Remove coil springs.
60. Locate rear coil spring retainers (3" long black plastic cylinders) and hardware kit 47.
61. Place carriage bolt inserts (small not round washer with square hole) onto 3/8 x 4" carriage bolts.
62. Insert this assembly into coil spring post on unibody.
63. Place a coil spring retainer over carriage bolt.
64. Place the large coil spring retainer washer, a 3/8" USS (standard) washer, and a 3/8 hex nut onto the carriage bolt and tighten nut.
65. Install the provided new springs

66. Install lower control arms. Bend at axle side, threads at unibody side, bend faces down to allow additional droop.
67. Install upper control arms. Threaded end at unibody side.
68. Locate rear track bar and hardware kit 13.
69. Using provided new bolts and nut, install the track bar with the threaded end at the axle.
70. Torque track bar bolts to 78 foot pounds.
71. Lubricate upper shock bushings and upper shock mounting studs on the vehicle with multi-purpose grease.
72. Install rear shocks with shock shafts facing up. Torque upper nuts to 46 foot pounds, and lower nuts to 80 ft. lbs.
73. Remove brake hose and replace with provided brake hose.
74. Raise vehicle and relocate the jack stands under the front and rear axles so that the vehicle's weight is on the suspension system.
75. Ensure that the vehicle is safely supported.
76. Install rear sway bar links with nuts facing down. Tighten nut until snug but do not compress the bushings, the spacer sleeve in the center of the link should still be able to be rotated by hand after tightening.
77. Install front and rear coil spring clamps.
78. Torque front and rear upper control arm nuts to 60 foot pounds.
79. Torque front and rear lower control arm nuts to 120 foot pounds.
80. Tighten any jam nuts very tight (track bars, control arms, etc...).
81. Torque any remaining loose bolts to spec.
82. Bleed the brakes. See factory service manual for brake bleeding procedure.
83. Install tires.
84. Remove vehicle from jack stands.
85. Torque wheel lug nuts to spec. (usually 85-115 foot-pounds, verify using factory service manual)

Adjustments and Safety Inspection:

86. Check all components for clearance for suspension to fully cycle up and down and wheels to turn lock to lock. Pay special attention to brake line length and location of all brake lines, axle vent hoses, and ABS wires. Reposition as needed.
 87. Check front and rear driveshafts for proper running length. Slight adjustments can be made by adjusting caster angle, otherwise different length control arms, or custom driveshafts may be required.
 88. Go for a short test drive.
 89. Check if front tires are centered side to side under vehicle. Adjust the length of the front track bar as needed. Repeat for rear track bar.
 90. A professional front end alignment is required after installation. Your toe-in will be affected and may cause unpredictable steering and accelerated tire wear.
 - Recommended caster setting: +3.0 to +6.0 (+3.5 degrees is recommended unless a different setting is required for proper driveshaft running length)
 - Recommended toe in setting: 0 to .1 degrees
- * Re-torque all fasteners, including lug nuts, after 100 miles, and frequently inspect all safety critical suspension components.