

IRON ROCK OFF ROAD

ZJ 5.5" Critical Path Long Arm Lift Kit Installation Instructions ZJ 93-98 Jeep Grand Cherokee

Parts Checklist:

BOX 1 24x12x12

- ZJ 5.5" front coil spring 96015 (2)

Shocks

- HD Hydro**
 - Front shock 79002 (2)
 - Rear shock 79005 (2)
- Doetsch Upgrade (Optional)**
 - Front shock 8421 (2)
 - Rear shock 8371 (2)
- #9 - Shock Hardware (1)**
 - 2.5" Front shock barpin 403876 (2)
- Bilstein Upgrade (Optional)**
 - Front shock 33-230399 (2)
 - Rear shock 33-185569 (2)
- #9 - Shock Hardware (1)**
 - 2.5" Front shock barpin 403876 (2)

BOX 2 36x8x8

- Instructions
- Invoice
- Iron Rock Off Road logo decal (2)
- Ironrockoffroad.com decal (1)
- ZJ adjustable rear track bar 99083 (1)
 - Track bar male threaded end 92004 (1)
- XJ/ZJ double shear adjustable track bar 92185 (1)
 - Track bar male threaded end 92004 (1)
- XJ/ZJ double shear track bar bracket 91015 (1)
- Rear sway bar link #007 (2)
- ZJ brake line set 10210 (1)
- 3" front bump stop spacer/rear coil spring retainer MB03 (4)
- Front sway bar link 10.75" center to center 92146 (2)

Rear Lower Control Arms

- Optional: Bent fixed length 18.3125" 99073 with bushings installed (2)
- Optional: Bent adjustable length short arm 99071 (2)
 - LCA Threaded Male End 99070 with Bushings Installed (2)
 - 1-1/4" -12 Jam Nut (2)

Rear Upper Control Arms

- Optional: Fixed length 14.875" 99075 w/ bushings installed (2)
- Optional: Adjustable length short arm 99069 (2)
 - Rear UCA threaded male end 99063 (2)
 - 1"-14 jam nut (2)

#9 - Shocks

- Front shock barpin 403876 (2)

#11 - Front Brake Line Relocation

- 1/4" x 1" self-drilling sheet metal screw (2)

#13 - Rear Track Bar

- Track bar bushing half M20919 (4)
- 12mm I.D. track bar bushing sleeve 92035 (2)
- M12x70 hex bolt, cl10.9 (2)
- M12 hex nut, cl10.9 (1)
- 7/8"-14 jam nut (1)

#20 - Front Track Bar

- Track bar bushing half M20919 (4)
- 7/16" I.D. track bar bushing sleeve 92036 (1)
- 7/16" x 2-1/2" hex bolt, gr8 (1)
- 7/16" hex nut, gr8 (1)
- 12mm track bar bolt sleeve 92035 (1)
- 7/16" flat washer (3)

- M12x80 hex bolt, cl10.9 (1)
- M12 hex nut, cl10.9 (1)
- 7/8"-14 jam nut (1)

#34 - Front Long Arm Subframe

- 1/2" x 1-1/2" hex bolt, gr8 (5)
- 1/2" x 6-1/2" hex bolt, gr8 (1)
- 7/16" x 1-1/4" hex bolt, gr8 (8)
- M10x100 hex bolt, cl10.9 (2)
- 1/2" hex nut, gr8 (6)
- 7/16" hex nut, gr8 (8)
- 1/2" lock washer, gr8 (6)
- 1/2" USS washer (6)
- 3/8" USS washer (8)

#47 - Rear Coil Spring Retainers

- 3/8" x 4" carriage bolt (2)
- 3/8" USS washer (2)
- 3/8" hex nut (2)
- ZJ rear coil spring retainer washer 99052 (2)
- ZJ rear coil spring retainer carriage bolt insert 99046 (2)

#58 - Front Sway Bar Links

- 3/4" I.D. hourglass shock bushing M00393BK-01 (4)
- 12mm I.D. sway bar bolt sleeve 92038 (4)
- M12x60 hex bolt, cl10.9 (2)
- M12 hex nut, cl10.9 (2)
- M10x30 hex bolt, cl10.9 (2)
- 3/8" USS washer (2)
- M10 hex nut, cl10.9 (2)
- SBL u-bracket 99000 (2)

#127 - 2 5/8" 6 Bolt IRO Flex End Hardware (2)

- Inner race 91118 (2)
- Thrust washer 91119 (2)
- Ball 91117 (1)
- 10-32 x 1-3/4" Socket Head Cap Screw (6)
- 10-32 Nylock Nut (6)
- 90 Degree 1/4"-28 Grease Zerk Fitting (1)

#76 - Caster Adjuster

- 5/16" x 1-1/4" carriage bolt (4)
- M10x90 hex bolt, cl10.9 (1)
- 1/4" USS flat washer (4)
- 3/8" USS flat washer (2)
- 5/16" hex nut, gr8 (4)
- M10 nylock hex nut (1)

BOX 3 24x12x12

- ZJ front long arm subframe center (2 hole 99079 or 4 hole 99078) (1)
- ZJ front long arm subframe left outer 99080 (1)
- ZJ front long arm subframe right outer 99081 (1)
- ZJ 5.5" rear coil spring 96016 (2)

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***BOX 4* 42x15x6.5**

- Front Iron Y and passenger side lower control arm with bushings installed (1)
 - Fixed (Y-11921, PSL-11923) (1)
 - Adjustable (optional)
 - XJ/ZJ long arm male end (2)
 - #65 – Adjustable LCA Clamping Hardware**
 - 1/4" – 28 x 1.125" socket head cap screw (4)
 - 1/4" – 28 hex nut, gr8 (4)
- Caster adjust bracket 92100 (1)

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:

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

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 33-5/8" 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" 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 front 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 58. 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.

Assemble Caster Adjuster

5. Slide Caster adjuster on top of welded on u-shaped bracket as shown.
6. Insert the (4) 5/16" carriage bolts from the inside of the bracket outwards, engaging the square end of the carriage bolt into the welded-on bracket.
7. Install washers and nuts on the carriage bolts finger tight.
8. Once Iron Y is installed in vehicle, install washer onto the 10mm bolt and slide through the caster bracket assembly and upper control arm bushing. Add the last washer and nylock nut, torque to spec.

Subframe Installation:

9. Lift front of vehicle and support with tall jack stands under the axle.
10. Lift rear of vehicle and support with tall jack stands under the axle.
11. Ensure the vehicle is safely supported.
12. 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.
13. 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).
14. Slightly lift transfer case and support with jack stand.
15. Remove factory crossmember.



16. 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.
17. Apply undercoating to mating surface of uni-frame and install new subframe using existing bolts.
18. Drill the four 7/16" mounting holes per side.
19. Install 7/16 x 1-1/4 bolts, washers, and nuts with washers and nuts on top.
20. Torque all 8 bolts to 65 foot pounds.
21. Torque factory 10mm bolts to 50 foot pounds.
22. Torque all seven 1/2" subframe to subframe bolts to 90 foot pounds.

Front suspension:

23. Lift front of vehicle and support with tall jack stands under the unibody frame.
Tip: break lug nuts loose before lifting vehicle if necessary.
24. Ensure that vehicle is safely supported.
25. Remove front tires.
26. Support front axle with a floor jack (do not lift vehicle).
27. Remove front shocks.
28. Remove front sway bar links.
29. Remove front track bar and the bracket that attaches track bar to unibody. No need to separate the track bar from the bracket.
30. Remove front upper and lower control arms.
31. Allow axle to droop as much as possible.
32. Remove front coil spring clamps and coil springs.
33. Remove bump stop and bump stop cups.
34. 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.
35. Install coil springs. Ensure coil spring is aligned to spring bucket on axle. Longer springs go in front.
36. Locate front track bar, track bar mounting bracket, and hardware kit 20.
37. Install the track bar bracket onto the unibody with the factory bolts. Loosely attach the bracket with the upper two bolts, then align the lower bolt mounting holes. Install the lower mounting bolts and torque all track bar bracket hardware to 92 ft. lbs.
***NOTE: If the unibody is rusty, the seam behind the factory bracket may have swelled making installation of the lower mounting bolts difficult. Using a ratchet strap to pull the bracket to align the holes or smoothing the seam with a hammer is recommended.
38. Install the track bar and torque bolt at axle to 74 ft. lbs., and bolt at bracket to 80 ft. lbs.
39. Locate front sway bar links (10.75" center to center), two u-brackets, and hardware kit 58.
40. 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
41. Install sway bar links driver's side first using provided M12 x 60 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.
42. Remove brake hoses and replace with supplied hoses. Rotate the hoses away from other items to ensure no rubbing or chaffing.
43. Locate front shocks, and hardware kit 9.
44. Install front shocks using provided bolts. Tighten upper stud mount nuts just enough to slightly compress the bushings. *Note: Over compressing these bushings will result in damage to the bushings and premature bushing failure.
45. Install passenger side front lower control arm using factory bolts.
46. Install driver's side Iron Y arm. Start with the lower axle side bolt, then upper axle side bolt, then unibody side bolt.
47. 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.
48. 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.
49. Any remaining loose bolts will be tightened after rear suspension is installed.

Rear Suspension:

50. Lift rear of vehicle and support with tall jack stands under the unibody frame.
Tip: break lug nuts loose before lifting vehicle if necessary.
51. Ensure that the vehicle is safely supported.
52. Remove rear tires.
53. Support rear axle with floor jack (do not lift vehicle).
54. Remove rear shocks.
55. Remove rear sway bar links.
56. Remove rear track bar (most ZJ's require a T55 torx socket for the track bar bolts).
57. Remove upper and lower control arms.
58. Allow axle to droop as much as possible.
59. Remove coil spring clamps.
60. Remove coil springs.
61. Locate rear coil spring retainers (3" long black plastic cylinders) and hardware kit 47.
62. Place carriage bolt inserts (small not round washer with square hole) onto 3/8 x 4" carriage bolts.
63. Insert this assembly into coil spring post on unibody.
64. Place a coil spring retainer over carriage bolt.
65. 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.
66. Install the provided new springs
67. Install lower control arms. Bend at axle side, bend faces down to allow additional droop.
68. Install upper control arms.
69. Locate rear track bar and hardware kit 13.

70. Using provided new bolts and nut, install the track bar with the threaded end at the axle and upper bend facing forward to clear the exhaust.
71. Torque track bar bolts to 78 foot pounds.
72. Lubricate upper shock bushings and upper shock mounting studs on the vehicle with multi-purpose grease.
73. Install rear shocks with shock shafts facing up. Torque upper nuts to 46 foot pounds, and lower nuts to 80 ft. lbs.
74. Remove brake hose and replace with provided brake hose.
75. Raise vehicle and relocate the jack stands under the front and rear axles so that the vehicle's weight is on the suspension system.
76. Ensure that the vehicle is safely supported.
77. 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.
78. Install front and rear coil spring clamps.
79. Torque front and rear upper control arm nuts to 60 foot pounds.
80. Torque front and rear lower control arm nuts to 120 foot pounds.
81. Tighten any jam nuts very tight (track bars, control arms, etc...).
82. Torque any remaining loose bolts to spec.
83. Bleed the brakes. See factory service manual for brake bleeding procedure.
84. Install tires.
85. Remove vehicle from jack stands.
86. Torque wheel lug nuts to spec. (usually 85-115 foot-pounds, verify using factory service manual)

Adjustments and Safety Inspection:

87. 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.
88. 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.
89. Go for a short test drive.
90. Check if front tires are centered side to side under vehicle. Adjust the length of the front track bar as needed.
91. 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
92. Check caster angle. Using a laser level or string level, set the front axle level to the rear axle (left side and right). Bounce the Jeep up and down to ensure the suspension is in resting position (at exact ride height). Place the angle finder under the axle "C" (or on top of the upper ball joint). Ensure the angle finder is parallel to the Jeep front to rear. This is your caster angle. Adjust accordingly.
93. Recheck all fasteners and torque any remaining loose nuts or bolts to spec.



* Re-torque all fasteners, including lug nuts, after 100 miles, and frequently inspect all safety critical suspension components.

IRON ROCK OFF ROAD

2 5/8" IRO Flex End (6 bolt)

1-877-919-JEEP www.ironrockoffroad.com

Assembly Instructions

Fits All Iron Rock Off Road Long Arm Systems, WJ A-Arms, and Build Your Own Flex End Assemblies.

Parts Checklist:

- Outer housing, weld on (may already be attached to your existing control arm)

#127 - 2 5/8" 6 Bolt IRO Flex End Hardware

- Inner race 91118 (2)
- Thrust washer 91119 (2)
- Ball 91117 (1)
- 10-32 x 1-1/4" Socket Head Cap Screw (6)
- 10-32 Nylock Nut (6)
- 90 Degree 1/4"-28 Grease Zerk Fitting (1)



Before you begin:

- o Read and understand installation instructions.
- o Contact Iron Rock Off Road with any questions before, during, or after installation.
- o **Ensure that all parts are present and in good condition per attached shipping checklist!**
- o Have these tools handy:
 - o 5/32 allen head socket
 - o 3/8 open end wrench
 - o Inch-lb. torque wrench



Assembly:

1. Insert two 10-32 socket head cap screws into one thrust washer and one plastic race. Spherical bore of race facing away from thrust washer.
2. Install this small assembly into the flex end housing. The races are a light press fit, use a wide punch and hammer to assist you if needed.
3. Apply a thin coating of multi-purpose grease to the mating surfaces of the ball and both races.
4. Place the ball in the race (inside the flex end). The ball should perfectly fit the contour of the race.
5. Insert the other race onto the ball so that the spherical bore is contacting the ball. Once again, the races are a light press fit, use a hammer and wide punch if needed. (The two screws should be through one washer and both races at this point)
6. Insert the second thrust washer on top of the flex end housing, sliding the bolts through the holes.
7. Start Nylock nuts on the two bolts that are in the flex end assembly. Hold the nut and turn the bolt.
8. Insert the remaining four cap screws through the remaining holes and install nuts.
9. Snug up all of the bolts fairly tight.
10. Torque bolts evenly starting at one bolt using a crisscross pattern, like torquing lug nuts. Torque all six bolts to 70 in/lbs., then to 85 in/lbs.
11. Install 90 Degree grease zerk fitting so that it is easily accessed in the vehicle.
12. Grease flex end until grease comes out of the races around the ball.
13. Re-torque bolts to 85 in-lbs. after 5 minutes.

