

# IRON ROCK OFF ROAD

## ZJ 7" Premium Long Arm Lift Kit Installation Instructions

ZJ 93-98 Jeep Grand Cherokee

### Parts Checklist:

#### \*BOX 1\* 24x12x12

- ZJ 7" front spring 96011 (2)

#### Shocks

- Doetsch Tech
  - Front shock DT 8421 (2)
  - Rear shock DT 8403 (2)
- Bilstein Upgrade (Optional)
  - Front shock 33-185569 (2)
  - Rear shock 33-185569 (2)

#### #17 - Bilstein Shocks (1)

- Front barpin 403876 (2)
- 12mm shock sleeve 404739 (6)
- SBL U-bracket 99000 (2)
- 1/2" x 1-1/2" hex bolt, gr8 (2)
- 1/2" hex nut, gr8 (2)
- 1/2" flat washer (2)
- 1/2" lock washer, gr8 (2)
- 7/16" USS flat washer (6)
- M12x60 hex bolt, cl10.9 (2)
- M12 hex nut, cl10.9 (2)

#### \*BOX 2\* 24x12x12

- Instructions
- Invoice
- Iron Rock Off Road logo decal 10001 (2)
- Ironrockoffroad.com decal 11192 (1)
- ZJ 7" rear spring 96012 (2)
- XJ/ZJ double shear track bar bracket 91015 (1)
- Rear sway bar link #007 (2)
- JKS front sway bar quick disconnects #2001 (1)
- ZJ brake line set 10207 (1)
- 3" front bump stop spacer/rear coil spring retainer MB03 (4)

#### #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 bushing 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)

#### #33 - Shock Relocation

- Front BPE shock relocation bracket 91022 (2)
- 3/8" x 1-1/4" hex bolt, gr8 (4)
- 3/8" nylock hex nut, gr8 (4)
- M10x60 hex bolt, cl10.9 (2)
- M10 hex nut, cl10.9 (2)
- 10mm shock sleeve 404969 (2)
- 3/8" flat washer (4)

#### #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)

#### #35 - Rear Long Arm Subframe

- 7/16" x 1-1/4" hex bolt, gr8 (12)
- 3/8" x 4" carriage bolt (2)
- 3/8" USS washer (14)
- 3/8" hex nut, gr8 (2)
- 2 hole nut plate (2.75" center to center) 92097 (6)
- M10x90 hex bolt, cl10.9 (2)
- M10 hex nut, cl10.9 (2)
- ZJ rear coil spring retainer washer 99052 (2)
- ZJ rear coil spring retainer carriage bolt insert 99046 (2)

#### #127 - 2 5/8" 6 Bolt IRO Flex End Hardware (4)

- 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 (4)
- M10 nylock hex nut (1)

#### \*BOX 3\* 24x14x6

- 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 1-3/4" drop pitman arm (XJ5ARM)

#### \*BOX 4\* 42x15x6.5

- ZJ rear long arm subframe 99082 (1)
- ZJ adjustable rear track bar 99083 (1)
  - Track bar male threaded end 92004 (2)
- XJ/ZJ double shear adjustable track bar 92185 (1)

#### \*BOX 5\* 42x15x6.5

- Front Iron Y and front passenger lower control arm with bushings installed (1)
  - Fixed 99084
  - Optional: Adjustable 99085
    - Long arm male end 91109 (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)

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## **\*BOX 6\* 36x12x12**

- Adjustable rear LCA left 99090
- Adjustable rear LCA right 99091
  - WJ long arm male end 92186 (2)

## **#65 – Adjustable LCA Clamping Hardware**

- 1/4" – 28 x 1.125" socket head cap screw (4)
- 1/4" – 28 hex nut, gr8 (4)
- Rear UCA left (~30-1/4" center to center) 99092
- Rear UCA right (~30-1/4" center to center) 99093

## **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.
- Custom exhaust will be required.
- You will need a hand drill and good quality 7/16" drill bit.
- You will need undercoating and anti-seize compound.
- You will need a good quality pitman arm puller.
- 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:**

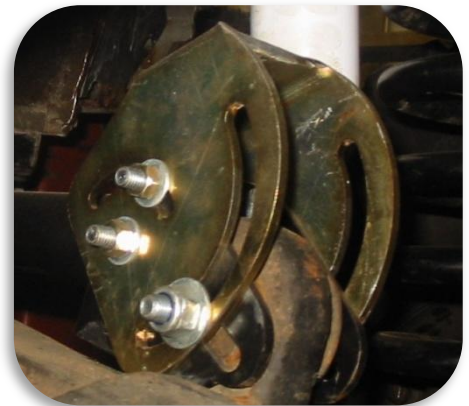
1. Locate the front track bar and hardware kit 20. Remove threaded end and install jam nut. Adjust length to 33-3/4" center to center as a starting point. **This is the max length for this track bar. Verify that you have a minimum 1" of thread engagement.** This may need to be adjusted after a short 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 10mm I.D. x 1.5" long inner sleeve into front shocks at body end (bottom). Install shock relocation brackets to bottom side of front shocks using M10 x 60mm bolts and nuts.

### **Assemble Caster Adjuster**

4. Slide Caster adjuster on top of welded on u-shaped bracket as shown.
5. 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.
6. Install washers and nuts on the carriage bolts finger tight.
7. 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:**

8. Lift front of vehicle and support with tall jack stands under the axle.
9. Lift rear of vehicle and support with tall jack stands under the axle.
10. Ensure the vehicle is safely supported.
11. Locate the rear subframe and hardware kit 35. Hold the rear subframe up to the unibody using a floor jack. Place the subframe just in front of the factory rear lower control arms mounts as far back as possible (28 3/8" from rear bolt hole of factory transmission crossmember, to front hole of new subframe). Control arm openings face rear, Iron Rock Off Road text faces forward.
12. Center the subframe left to right.
13. Using the subframe as a guide, drill the 12 mounting holes. Peck drill and use plenty of oil.
14. Lower the subframe, remove burrs from inside of the holes, clean surface for undercoating.
15. While undercoating is still wet, install the subframe and hold in position using a floor jack.
16. Insert one nut plate into the uni-frame and put it in position above the rearmost holes. Use a piece of bailing wire and a small screwdriver to help line it up and get it into position. This can be frustrating so be patient and take your time – the rest of the nut plates are easier.
17. Add a washer and thread each bolt into the nut plate. Repeat for remaining mounting holes.
18. Torque all 12 bolts to 65 foot pounds.
19. 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).
20. Slightly lift transfer case and support with jack stand.
21. Remove factory crossmember.
22. 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.
23. Apply undercoating to mating surface of uni-frame and install new subframe using existing bolts.
24. Drill the four 7/16" mounting holes per side.
25. Install 7/16 x 1-1/4 bolts, washers, and nuts with washers and nuts on top.
26. Torque all 8 bolts to 65 foot pounds.
27. Torque factory 10mm bolts to 50 foot pounds.



28. Torque all seven 1/2" subframe to subframe bolts to 90 foot pounds.

### **Front suspension:**

29. Lift front of vehicle and support with tall jack stands under the unibody frame.  
Tip: break lug nuts loose before lifting vehicle if necessary.
30. Ensure that vehicle is safely supported.
31. Remove front tires.
32. Support front axle with a floor jack (do not lift vehicle).
33. Remove front shocks.
34. Remove front sway bar links.
35. Remove front track bar and the bracket that attaches track bar to unibody. No need to separate the track bar from the bracket.
36. Remove front upper and lower control arms.
37. Allow axle to droop as much as possible.
38. Remove front coil spring clamps and coil springs.
39. Remove bump stop and bump stop cups.
40. 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.
41. Install coil springs. Ensure coil spring is aligned to spring bucket on axle. Longer springs go in front.
42. Locate front track bar, track bar mounting bracket, and hardware kit 20.
43. Install the track bar bracket onto the unibody and torque bolts to 92 ft. lbs.
44. Install the track bar and torque bolt at axle to 74 ft. lbs., and bolt at bracket to 80 ft. lbs.
45. Locate JKS front sway bar quick disconnect kit. Install per JKS instructions. Adjust sway bar link length to maximum length recommended by JKS.
46. Remove brake hoses and replace with supplied hoses. Rotate the hoses away from other items to ensure no rubbing or chaffing.
47. Locate front shocks, and remainder of hardware kit 33.
48. 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.
49. Torque shock relocation bracket bolts to 45 foot pounds and M10 shock bolt to 60 foot pounds.
50. Install passenger side front Lower control arm using factory bolts.
51. Install driver's side Iron Y arm. Start with the lower axle side bolt, then upper axle side bolt, then unibody side bolt.
52. 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.
53. 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 Loctite to threads and torque pitman arm nut to 185 foot pounds.
54. 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.
55. 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.
56. Ensure drag link bolts and any other steering bolts are tightened and cotter pins are installed.
57. Any remaining loose bolts will be tightened after rear suspension is installed.

### **Rear Suspension:**

58. Lift rear of vehicle and support with tall jack stands under the unibody frame.  
Tip: break lug nuts loose before lifting vehicle if necessary.
59. Ensure that the vehicle is safely supported.
60. Remove rear tires.
61. Support rear axle with floor jack (do not lift vehicle).
62. Remove rear shocks.
63. Remove rear sway bar links.
64. Remove rear track bar (most ZJ's require a T55 torx socket for the track bar bolts).
65. Remove upper and lower control arms.
66. Allow axle to droop as much as possible.
67. Remove coil spring clamps.
68. Remove coil springs.
69. Locate rear coil spring retainers (3" long black plastic cylinders) and hardware kit 35.
70. Place carriage bolt inserts (small not round washer with square hole) onto 3/8 x 4" carriage bolts.
71. Insert this assembly into coil spring post on unibody.
72. Place a coil spring retainer over carriage bolt.
73. 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.
74. Install the provided new springs
75. Install lower control arms. Flex end at axle side, bend faces up and in toward center of Jeep. Use front hole in subframe. Adjust length to 32" center to center on the short side.
76. Install upper control arms. Bend faces down and in toward center of Jeep. Use provided M10 x 90mm bolts and nuts. The rearmost hole in the subframe is hole 1. Install in hole 4 as a starting point.
77. Locate rear track bar and hardware kit 13 (previously assembled in step 2).
78. Using provided new bolts and nut, install the track bar with the threaded end at the axle. The bend on the opposite side goes up and over the exhaust.
79. Torque track bar bolts to 78 foot pounds.
80. Lubricate upper shock bushings and upper shock mounting studs on the vehicle with multi-purpose grease.
81. Install rear shocks with shock shafts facing up. Torque upper nuts to 46 foot pounds, and lower nuts to 80 ft. lbs.
82. Remove brake hose and replace with provided brake hose.
83. Raise vehicle and relocate the jack stands under the front and rear axles so that the vehicle's weight is on the suspension system.
84. Ensure that the vehicle is safely supported.
85. 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.
86. Install front and rear coil spring clamps.
87. Torque front and rear upper control arm nuts to 60 foot pounds.
88. Torque front and rear lower control arm nuts to 120 foot pounds.
89. Tighten any jam nuts very tight (track bars, control arms if adjustable, etc...).
90. Torque any remaining loose bolts to spec.
91. Bleed the brakes. See factory service manual for brake bleeding procedure.

92. Install tires.
93. Remove vehicle from jack stands.
94. Torque wheel lug nuts to spec. (usually 85-115 foot-pounds, verify using factory service manual)

**Adjustments and Safety Inspection:**

95. 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.
96. 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.
97. Go for a short test drive.
98. Check if front tires are centered side to side under vehicle. Adjust the length of the front track bar as needed.
99. 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.

# IRON ROCK OFF ROAD

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

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

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

## Before you begin:

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

## Parts Checklist:

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

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

- 2-5/8" flex end race 91118 (2)
- Thrust washer 91119 (2)
- 2-5/8" flex end ball 91117 (1)
- #10-32 nylock nut (7)
- #10-32 x 1-3/4" socket head cap screw (6)
- 90° 1/4"-28 grease zerk fitting (1)

## 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. (Figure 1)
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. (Figure 2)
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. (Figure 3)
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. (Figure 4)
9. Snug up all of the bolts fairly tight.
10. Torque bolts evenly, starting at one bolt and continuing using a crisscross pattern. Torque all six bolts to 70 in-lbs., then to 85 in-lbs.
11. Install 90° 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.



Figure 1

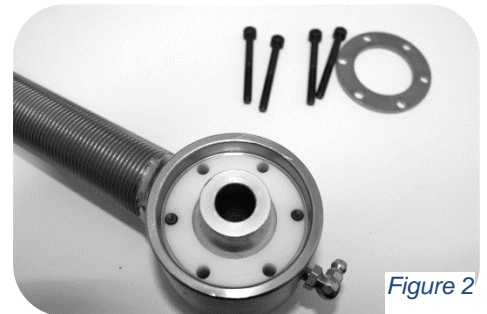


Figure 2

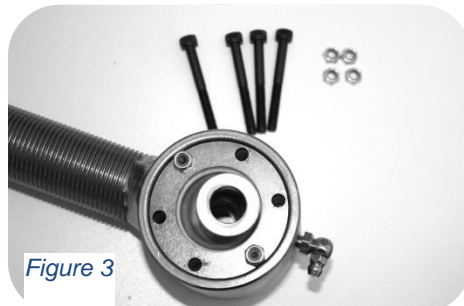


Figure 3

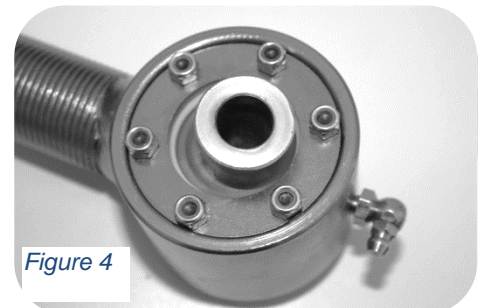


Figure 4

*\*Reference Only\* Complete joint shown fully assembled without housing*