

# IRON ROCK OFF ROAD

**TJ 3" Premium Short Arm Lift Kit**

**Instructions**

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



## Shipping Checklist:

### \*Box 1\* 24x12x12

- ☐ TJ 3" Front coil spring 96017 (2)
- ☐ TJ 3" Rear coil spring 96019 (2)

### \*Box 2\* 33x17x8

- ☐ Instructions
- ☐ Iron Rock logo decals (2)
- ☐ Ironrockoffroad.com decal (1)
- ☐ Rear track bar relocation bracket 85031 (1)
- ☐ Sway bar link 10.75" center to center 92145 (4)
- ☐ TJ 0-8" Adjustable front track bar 85096 (1)
- ☐ Track bar male threaded end 92004 (1)
- ☐ TJ 0-8" double shear TB bracket 85082 (1)

### T-case Drop Kits

#### Optional: 1997 to 2002 model year

- ☐ Transfer case drop spacer 85039, 23 5/8" long (1)
- ☐ Transfer case drop spacer 85040, 20 5/8" long (1)

#### Optional: 2003 to 2006 model year

- ☐ Transfer case drop spacer 85041, 23" long (2)

### Shocks

#### ☐ Standard IRO

- ☐ Front Shocks SL2450F (2)
- ☐ Rear Shocks LL2498F (2)

#### #123 XJ/TJ Rear Barpins (1)

- ☐ 3.12" Rear barpin 404127 (2)

#### ☐ Optional: Doetsch Tech Upgrade

- ☐ Front shocks DT 8352 (2)
- ☐ Rear shocks DT 8299 (2)

#### #15 Shock Hardware (1)

- ☐ 2.5" Front barpin 403872 (2)
- ☐ 3.12" Rear barpin 404127 (2)

#### ☐ Optional: Bilstein Upgrade

- ☐ Front Shocks 33-185606 (2)
- ☐ Rear Shocks 33-186542 (2)

#### #18 Bilstein Shock Hardware (1)

- ☐ Front barpins 2.5" 403872 (2)
- ☐ Rear barpins 2.75" 404127 (2)
- ☐ SBL U-brackets 99000 (2)
- ☐ 12mm Shock sleeves 404739 (4)
- ☐ 1/2 x 1 1/2 gr8 Hex Bolt (2)

- ☐ 1/2 gr8 Hex nut (2)
- ☐ 1/2 USS Washer (2)
- ☐ 1/2 gr8 Lock washer (2)
- ☐ 7/16 USS Washer (6)
- ☐ M12x60 cl10.9 Hex bolt (2)
- ☐ M12 cl10.9 Hex nut (2)

#### #130 TJ 0-8" Track Bar Bracket Hardware (1)

- ☐ 1/2-20 x 2 hex bolt, gr8 (1)
- ☐ 1/2 SAE hardened washer (2)
- ☐ 1/2-20 nylock nut, gr8 (1)
- ☐ 3/8-16 x 2 hex bolt, gr8 (1)
- ☐ 3/8-16 nylock nut, gr8 (1)
- ☐ 3/8 USS washer (2)
- ☐ 1/2" Tapered sleeve 95043 (1)

#### #129 Front Track Bar Hardware (1)

- ☐ Track bar bushing half M20919 (4)
- ☐ 7/16" TB bushing sleeve 92036 (1)
- ☐ 12mm TB bushing sleeve 92035 (1)
- ☐ 7/16 x 2 1/2"lg gr8 hex bolt (1)
- ☐ 7/16 gr8 hex nut (1)
- ☐ M12 x 65 hex bolt, cl10.9 (1)
- ☐ M12 nylock nut cl10.9 (1)
- ☐ 5/16 x 2.0 carriage bolt gr5 (1)
- ☐ 5/16-18 flange nut (1)
- ☐ Clamping bracket 95044 (1)

#### #11 Brake Line Relocation Hardware (1)

- ☐ 1/4x1 Self drilling sheet metal screw (2)

#### #53 Rear Track Bar Bracket Hardware (1)

- ☐ 12mm Track Bar Sleeve 92035 (1)
- ☐ 7/16 x 1 1/4 gr8 hex bolt (3)
- ☐ M12 x 70 cl10.9 hex bolt (2)
- ☐ 7/16 gr8 hex nut (3)
- ☐ M12 cl10.9 hex nut (2)
- ☐ 7/16 USS washer (7)

#### #58 Front Sway Bar Link Hardware (1)

- ☐ 3/4" I.D. hourglass shock bushings M00393BK-01 (4)
- ☐ 12mm I.D. sway bar bolt sleeves 92038 (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 99000 (2)

#### #60 Rear Sway Bar Link Hardware (1)

- ☐ 3/4" Hourglass bushings M00393BK-01 (4)
- ☐ 10mm Sway bar bolt sleeves 92037 (4)
- ☐ M10 x 60 Sway bar link bolt (4)
- ☐ M10 X 1.5 Hex nut (4)
- ☐ 7/16 USS Washer (4)

#### Optional: #74 '97-'02 T-case Drop Hardware (1)

- ☐ Plastic end cap 1 1/2 x 2 RER1-1/2x2-10-14(4)
- ☐ 1/2 x 3" flat head cap screw (6)

#### Optional: #75 '03-'06 T-case Drop Hardware (1)

- ☐ Plastic end cap 1 1/2 x 2 RER1-1/2x2-10-14 (4)
- ☐ 1 1/4" tall, round spacer block 88073 (2)
- ☐ M12 x 70 cl10.9 hex bolt (8)
- ☐ 7/16 USS washer (6)

#### ☐ #146 TJ 0-4 SS Brake Line Set (1)

- ☐ Front brake hose 88144 (2)
- ☐ Rear brake hose 88145 (1)
- ☐ Brake hose mounting brkt 91114 (2)
- ☐ #10 x 1 self-drilling screw (4)
- ☐ Brake Hose clip BQ3052 (3)
- ☐ Copper washer BQ3858 (4)

### **\*Box 3\* 24x14x6**

- ☐ Adjustable bent lower control arm 99071 (4)
  - ☐ LCA Threaded Male End 99070 with Bushings Installed(4)
  - ☐ 1 1/4-12 Jam Nut (4)
  - ☐ Bushing installed (8)
- ☐ Adjustable front upper control arm 99068 (2)
  - ☐ Front UCA Threaded Male End 99067 (2)
  - ☐ 1-14 Jam Nut (2)
  - ☐ Bushing installed (2)
- ☐ Adjustable rear upper control arm 99069 (2)
  - ☐ Rear UCA Threaded Male End 99063 (2)
  - ☐ 1-14 Jam Nut (2)
  - ☐ Bushing installed (4)

# Installation Instructions:

**\*\*Safety Warning:** 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:

- ☐ **\*\*\*Ensure that all parts are present and in good condition using above shipping checklist.\*\*\***
- ☐ Read all safety warnings.
- ☐ Read and understand installation instructions.
- ☐ Check all steering and suspension components for wear and replace as needed.
- ☐ Contact Iron Rock Off Road with any questions before, during, or after installation.
- ☐ Required tools and supplies:
  - ☐ Hand drill with 3/8" & 7/16" drill bits, preferably a close quarters drill or right angle drill for drilling in small spaces.
  - ☐ Anti-seize compound

## Prepare the parts for installation:

1. Locate all upper and lower control arms. Perform these steps to each control arm:

- ☐ Remove male threaded end.
- ☐ Generously apply anti-seize to male threads.
- ☐ Adjust to these lengths:

Front lower control arm (front and rear are same part)	16 1/4" center to center
Rear lower control arm (front and rear are same part)	16 1/2" center to center
Front upper control arm (one rubber bushing, one u-bracket)	15 1/4" center to center using inner hole
Rear upper control arm (two rubber bushings)	13 5/8" center to center

- ☐ Tighten jam nut hand tight. Jam nut will be tightened after installation in the Jeep.

2. Locate the front track bar and hardware kit 129.
3. Install the clamp onto the threaded end of the track bar. Apply anti-seize compound to male threads. Thread male end into track bar. Install carriage bolt and nut into clamp finger tight. Nut must face forward when installed.
4. Adjust the length to 32 1/2" center to center as a starting point. This may need to be adjusted after a short test drive.

**\*\*\*Safety Warning: Maximum track bar length is approx. 33 1/4" center to center. If you are near this maximum length, you MUST verify that you have at least 1" of thread engagement. Failure to perform this simple double check can cause track bar failure, which may result in serious injury or death.**

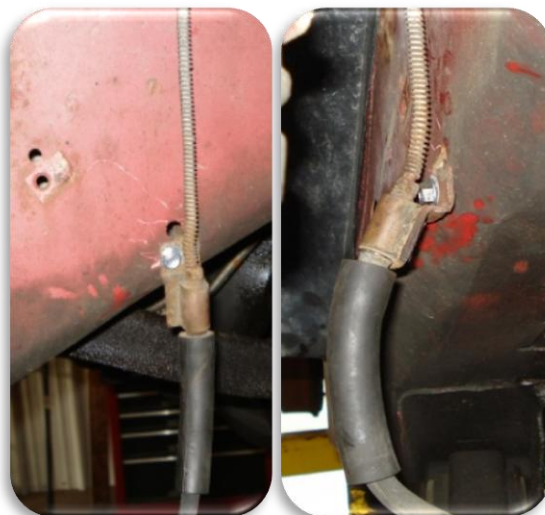
5. Lubricate track bar bushings and bushing sleeves with multi-purpose grease and install into track bar. The smaller I.D. bushing sleeve is installed at axle end (with adjusting threads), and the larger I.D. sleeve at frame end (without adjusting thread).
6. Leave the rest of the hardware in the bag for future use.
7. Locate front sway bar links and hardware kit 58. Front and rear sway bar links are identical until hardware is installed. Grease hourglass bushing inside and out and insert into each end of each link. Grease outside of inner bushing sleeve and insert one into each bushing. Leave remaining hardware in the bag for future use.
8. Locate rear sway bar links and hardware kit 60. Grease hourglass bushing inside and out and insert into each end of each link. Grease outside of inner bushing sleeve and insert one into each bushing. Leave remaining hardware in the bag for future use.
9. Locate shocks and install barpins if they are not pre-installed. Rear shocks are loop-loop mount and require the long barpins on the top side. Front shocks are stem-loop mount and require the short barpins on the bottom side. Barpins may be found pre-installed or in a hardware kit in the shock box or in the lift kit box. Some front shock boxes will contain rear barpins, verify that the barpin you install will fit properly on the Jeep (long rear, short front). Place the barpin vertically in a bench vise. Grease the barpin and the poly shock bushing. Lower the shock onto the barpin using steady pressure and rotating the shock back and forth.
10. Grease and install 12mm inside diameter x 1 1/4" long shock bushing inner sleeve into the bottom of each rear shock. Shock sleeves may be found pre-installed, or in a hardware kit in the shock box or lift kit box. Ensure the shock sleeve properly fits the Jeep.

## Front suspension:

11. Lift front of vehicle and support with tall jack stands under the frame.
  - a. \*Tip: break lug nuts loose before lifting vehicle.
12. Ensure that vehicle is safely supported.
13. Remove front tires.
14. Place a floor jack under front axle housing for support (do not lift vehicle).
15. Remove front shocks.
16. Remove front sway bar links.
17. Remove front track bar.
18. Remove front upper and lower control arms on one side.
19. Loosen remaining upper and lower control arm bolts. Remove nuts but do not remove control arms at this time.
20. Locate hardware kit 11.
21. On one side, remove the bolt that holds the brake hose to the frame.
22. Any rusted, worn, cracked, or damaged rubber or steel brake line should be replaced.



Barpin Installation





23. Pull brake line down as far as possible without over-stressing or causing a kink in the line. \*Note: Your brake line may appear different from the photo. Do not pull too far and damage the brake line.
24. Using two adjustable wrenches bend brake line bracket mounting surface so brake line points out toward the brake caliper. See photo.
25. Mark location and drill a 1/4" hole for the brake line locating tab.
26. Fasten brake line to the frame using provided self-drilling sheet metal screw.
27. Repeat for other side.
28. Remove the coil spring clamps (at the axle).
29. Remove coil springs.
30. Install new springs in vehicle being careful to align the spring to the spring bucket on the axle.
31. Install new upper and lower control arms on one side, do not tighten bolt at this time. Bend hangs down on axle side. Use shorter hole in upper control arm.
32. Remove remaining stock upper and lower control arms and replace with new ones.
33. Install new front shocks using original axle side hardware. Tighten upper stud mount nuts just enough to slightly compress the bushings. Over compressing these bushings will result in damage to the bushings and premature bushing failure.
34. Locate front sway bar links and hardware kit 58.
35. Install sway bar link u-brackets to the sway bar using M10 x 30 hex bolts nuts and washers. Brackets mount to the bottom of the sway bar with the bolt facing up and the washer and nut on top of the sway bar (see photo). Align brackets with offset holes pushing the brackets toward the outside of the vehicle. Torque nuts to 60 foot pounds.
36. Install sway bar links passenger side first using provided M12 x 70mm 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 (washer goes outside bushing). Torque all nuts to 78 foot pounds.
37. Install track bar bracket. Locate hardware kit 130. Use tapered sleeve. Install 1/2" bolt facing up (nut on top) with an SAE washer under the bolt and nut. Ensure the bracket sits flush, grind down any high spots as needed. Tighten 1/2" bolt before drilling the 3/8" hole. Drill the upper hole through the bracket using a 3/8" drill bit. Peck drill and use plenty of oil. Install 3/8 bolt with nut on the inside (toward engine). Torque 1/2" bolt to 85 ft-lbs.
38. Install new track bar. If necessary, use the steering wheel and/or a floor jack to align the track bar to the bolt holes. Do not use washers on the bolts. For clearance purposes, frame side nut must face rearward and bolt head forward. Use M12 x 65mm bolt and nylock nut at frame, and 7/16 x 2 1/2 bolt and nut at axle.
39. Torque track bar to 74 ft/lbs. at axle end and 80 ft/lbs. at bracket.
40. Raise vehicle from jack stands and place jack stands under the axle.
41. Install coil spring clamps.
42. With the vehicle's weight on the suspension, torque upper control arm nuts to 60 foot pounds.
43. Torque lower control arm nuts to 120 foot pounds.
44. Lower vehicle from jack stands.
45. Install front tires.
46. Torque lug nuts to spec.
47. Torque any other loose bolts to spec.



### **Rear Suspension:**

48. Lift rear of vehicle and support with tall jack stands under the frame.  
\*Tip: break lug nuts loose before lifting vehicle.
49. Ensure that the vehicle is safely supported.
50. Remove rear tires.
51. Remove rear shocks.
52. Remove rear sway bar links.
53. Allow suspension to droop as much as possible.
54. Remove upper and lower control arms on one side.
55. Loosen remaining upper and lower control arm bolts. Remove nuts but do not remove control arms at this time.
56. Remove coil spring clamps and coil springs.
57. Unbolt rear track bar from axle side mount. Loosen frame side track bar bolt but do not remove.
58. Locate track bar relocation bracket and hardware kit 53.
59. Bolt the new bracket into the existing hole using steel sleeve in place of original track bar and new M12 x 70 bolt and washer. Tighten enough to prevent movement during drilling.
60. Drill the three 7/16 holes (top, left side, and rear lower).
61. Peck drill and use plenty of oil.
62. Install 7/16 bolts and nuts using washers where possible.
63. Torque 7/16 bolts to 65 foot pounds.
64. Torque M12 bolt to 78 foot pounds.
65. Bolt the OEM track bar into the new bracket with a new M12 x 70 bolt, nut, and washers. Do not tighten bolts at this time.
66. Install new springs.
67. Install new upper and lower control arm on one side. Do not tighten bolts at this time. Bend hangs down at axle side. Male adjusting threads go on frame side for both upper and lower control arms.
68. Remove remaining stock control arms and replace with new.
69. Remove unused center brake hose mounting bracket from brake hose using 2 pliers.
70. Install new shocks using existing hardware.
71. Torque lower shock bolts to 70 foot pounds.



72. Tighten upper shock bolts.
73. Locate rear sway bar links and hardware kit 60.
74. Install sway bar links with new bolts and a washer on the outside of each bushing (the washer keeps the sway bar link from falling off).
75. Torque all four sway bar link nuts to 60 foot pounds.
76. Raise vehicle from jack stands and place jack stands under the axle.
77. With weight on the suspension, torque upper control arm nuts to 60 foot pounds.
78. Torque lower control arm nuts to 120 foot pounds.
79. Torque track bar nuts to 78 foot pounds.
80. Install rear tires.
81. Lower vehicle from jack stands.
82. Torque any remaining loose bolts to spec.

### **Adjust Front Track Bar Length:**

83. With the weight of the Jeep resting on the tires (on the ground), bounce the front of the Jeep up and down to set springs into place.
84. Check the length of the front track bar by measuring from tire to frame on each side. Adjust track bar length as needed.

### **Transfer Case Drop Kit:**

85. Place a floor jack under the driver's side of transfer case skid plate for support.
86. Remove transfer case skid plate bolts on driver's side.
87. Lower t-case skid plate away from frame enough to fit the spacer in place. Loosen passenger side bolts if needed.
88. Install spacer using new bolts and washers. Do not tighten at this time.
89. Repeat for passenger side.
90. Torque bolts to 70 foot pounds.

### **Adjustments and Safety Inspection:**

91. 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.  
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: +3.75 to +6.0 (+5 degrees is recommended)  
Recommended toe in setting: 0 degrees

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