

# IRON ROCK OFF ROAD

**TJ 4" Premium Short  
Arm Lift Kit**

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

## **Box 1 (24x12x12)**

- ☐ TJ 4" Rear spring 96005 (2)
- ☐ TJ 4" Front spring 96016 (2)

## **Box 2 (24x12x12)**

- ☐ Instructions
- ☐ Iron Rock logo decal (2)
- ☐ Ironrockoffroad.com decal (1)
- ☐ TJ stainless steel braided brake line set (1)
- ☐ Drop pitman arm 5285 (1)
- ☐ Adjustable lower control arm with bend 99071 (4)
  - ☐ LCA Threaded Male End 99070 (4)
  - ☐ 1 1/4-12 Jam Nut (4)
  - ☐ Bushings installed (8)
- ☐ Adjustable front upper control arm 99068 (2)
  - ☐ Front UCA Threaded Male End 99067 (2)
  - ☐ 1-14 Jam Nut (2)
  - ☐ Bushings Installed (2)
- ☐ Adjustable rear upper control arm 99069 (2)
  - ☐ Rear UCA Threaded Male End 99063 (2)
  - ☐ 1-14 Jam Nut (2)
  - ☐ Bushings installed (4)

### **T-case Drop Kits**

#### **For 1997 to 2002 model year only**

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

#### **For 2003 to 2006 model year only**

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

## **Box 3 (36x8x8)**

- ☐ 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)
- ☐ Rear track bar relocation bracket 85031 (1)
- ☐ Sway bar link 10.75" center to center 92146 (4)

### **Shocks**

#### ☐ **Standard HD Hydro Shocks**

- ☐ Front Shock 79001 (2)
- ☐ Rear Shock 79004 (2)

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

- ☐ 2.5" Barpin 403876 (2)

#### ☐ **Optional: Doetsch Tech Upgrade**

- ☐ Front shock DT 8350 (2)
- ☐ Rear shock DT 8299 (2)

#### **#15 - Shock hardware (1)**

- ☐ 2.5" Front barpin 403876 (2)
- ☐ 3.12" Rear barpin 404127 (2)

#### ☐ **Optional: Bilstein Upgrade**

- ☐ Front Shock 33-230351 (2)
- ☐ Rear Shock 33-185552 (2)

#### **#15 - Shock Hardware (1)**

- ☐ Front barpin 2.5" 403876 (2)
- ☐ Rear barpin 2.75" 404127 (2)

#### **#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)

#### **#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)

#### **#53 - Rear Track Bar Bracket (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 Links (1)**

- ☐ 3/4" I.D. hourglass shock bushings M00393 (4)
- ☐ 12mm I.D. sway bar bolt sleeve 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 Links (1)**

- ☐ 3/4" Hourglass bushing M00393 (4)
- ☐ 10mm Sway bar bolt sleeve 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 (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 (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)

# 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 make 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:
  - ☐ Pitman arm puller
  - ☐ Hand drill with 7/16" drill bit, 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 and hardware kit 57. Perform these steps to each control arm:
2. Remove male threaded end.
3. Check female end for burrs, powder coat, or other debris on the threads. Check male threads for damage.
4. Install jam nut onto male end.
5. Generously apply anti-seize to male threads.
  - a. 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



6. Tighten jam nut hand tight. Jam nut will be tightened after installation in the Jeep.
  7. Locate the front track bar and hardware kit 129.
  8. 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.
  9. Adjust the length to 32 5/8" 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.**
10. 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).
  11. Leave the rest of the hardware in the bag for future use.
  12. 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.
  13. 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.
  14. 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 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.
  15. 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:

16. Lift front of vehicle and support with tall jack stands under the frame.
  - a. \*Tip: break lug nuts loose before lifting vehicle.
17. Ensure that vehicle is safely supported.
18. Remove front tires.
19. Place a floor jack under the front axle housing for support (do not lift vehicle).
20. Remove front shocks.
21. Remove front sway bar links.
22. Remove front track bar.
23. Remove front upper and lower control arms on one side.
24. Loosen remaining upper and lower control arm bolts. Remove nuts but do not remove control arms at this time.
25. Remove the coil spring clamps (at the axle).
26. Remove coil springs.
27. Install new springs in vehicle being careful to align the spring to the spring bucket on the axle.
28. 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.
29. Remove remaining stock upper and lower control arms and replace with new ones.
30. 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.



31. Locate front sway bar links and hardware kit 58.
32. 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.
33. Install track bar bracket. 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.
34. 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.
35. Torque track bar to 74 ft/lbs. at axle end and 80 ft/lbs. at bracket.
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. Replace brake lines with provided stainless steel braided lines.
38. Raise vehicle from jack stands and place jack stands under the axle.
39. Install coil spring clamps.
40. With the vehicle's weight on the suspension, torque upper control nuts to 60 foot pounds.
41. Torque lower control arm nuts to 120 foot pounds.
42. Bleed front brakes.
43. Lower vehicle from jack stands.
44. Install front tires.
45. Torque lug nuts to spec.
46. Torque any other loose bolts to spec. except track bar castle nut which will be tightened after rear suspension is installed and track bar length is verified.



### **Rear Suspension:**

47. Lift rear of vehicle and support with tall jack stands under the frame.  
\*Tip: break lug nuts loose before lifting vehicle.
48. Ensure that the vehicle is safely supported.
49. Remove rear tires.
50. Remove rear shocks.
51. Allow suspension to droop as much as possible.
52. Remove rear brake line and replace with new braided stainless steel line.
53. Remove upper and lower control arm on one side.
54. Loosen remaining upper and lower control arm bolts. Remove nuts but do not remove control arms at this time.
55. Remove coil spring clamps and coil springs.
56. Unbolt rear track bar from axle side mount. Loosen frame side track bar bolt but do not remove.
57. Locate track bar relocation bracket and hardware kit 53.
58. 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.
59. Drill the three 7/16 holes (top, left side, and rear lower).
60. Peck drill and use plenty of oil.
61. Install 7/16 bolts and nuts using washers where possible.
62. Torque 7/16 bolts to 65 foot pounds.
63. Torque M12 bolt to 78 foot pounds.
64. 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.
65. Install new springs.
66. 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.
67. Remove remaining stock control arms and replace with new.
68. Install new shocks using existing hardware.
69. Torque lower shock bolts to 70 foot pounds.
70. Tighten upper shock bolts.
71. Locate rear sway bar links and hardware kit 60.
72. 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).
73. Torque all four sway bar link nuts to 60 foot pounds.
74. Raise vehicle from jack stands and place jack stands under the axle.
75. With weight on the suspension, torque upper control arm nuts to 60 foot pounds.
76. Torque lower control arm nuts to 120 foot pounds.
77. Torque track bar nuts to 78 foot pounds.
78. Install coil spring clamps.
79. Bleed rear brakes.
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.
85. Torque frame side front track bar castle nut to 60 foot pounds and install cotter pin. Tighten Jam nut very tight.
86. Grease the tie rod end.

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

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

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

93. 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.