

IRON ROCK OFF ROAD

WJ 6.5" Premium Long Arm Kit
Installation Instructions

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

Parts Checklist:

BOX 1 24x12x12

- 6.5" Front spring 96008 (2)
- 6.5" Rear spring 96009 (2)

BOX 2 24x14x6

- Literature (instructions, steering shimmy checklist)
- Invoice
- Iron Rock Off Road logo decal 10001 (2)
- Ironrockoffroad.com decal (1)
- JKS Sway bar quicker disconnect set 3104 (1)
- Rear sway bar links 14.625" center to center 92149 (2)
- WJ 4 hole transfer case drop spacer 92026 (2)
- Front control arm mounting bracket (92016, 92017) (1 left, 1 right)
- Upper coil spring retainer 92040 (4)

#1 - Front Track Bar Hardware (1)

- Track bar bushing half M20919 (4)
- 12mm track bar bushing sleeve 92036 (2)
- 7/8-14 Jam Nut (1)

#2 - Rear Sway Bar Link Hardware (1)

- 3/4" hourglass bushing M00393 (4)
- 12mm sway bar bolt sleeve 92038 (2)
- 10mm sway bar bolt sleeve 92037 (2)
- M10 x 60 sway bar link bolt (2)
- M10 X 1.5 hex nut (2)
- 7/16 USS washer (2)

#3 - Shocks Hardware (1)

- 12mm shock bolt sleeve 404739 (2)
- 7/16" washer (6)
- 5/16 x 1 hex bolt (4)
- 5/16-18 hex nut (4)
- 5/16 washer (8)

#5 - T-Case Drop Hardware (1)

- M10 x 150mm class 10.9 bolt (4)
- 3/8" USS washer (4)

#6 - Front Brake Line Spacers, Coil Spring Retainer Hardware (1)

- Front brake line spacer (10mm SBL sleeve) 92037 (2)
- M6 x 45 Front brake line bolt (2)
- 1/4" USS washer (2)
- 1/2 x 5" socket head cap screw (2)

#7 - Front Control Arm Brackets Hardware (1)

- 2.75" nut plate 92097 (4)
- 7/16 x 1 1/4" gr8 hex bolt (8)
- 7/16" USS washer (8)

#23 - Rear Coil Spring Retainers Hardware (1)

- 7/16" x 5" socket head cap screw (2)

#65 - Adjustable LCA Clamping Bolts Hardware (2)

- 1/4-28 x 1 1/8 socket head cap screw (4)
- 1/4-28 hex nut (4)

#76 - Caster Adjuster Hardware (1)

- 5/16 x 1 Carriage Bolt (4)
- M10 x 90 Hex Head Bolt (1)

#78 - Lower Control Arm Spacers Hardware (2)

- Lower control arm bushing spacer 90194 (4)

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

- 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)
- 1/2 USS Flat Washer (4)
- 3/8 USS Flat Washer (2)
- 5/16 Hex Nut (4)
- M10 nylock hex nut (1)

#160 - WJ 4-Link Crossmember Hardware (1)

- 7/16-14 x 1-1/4" gr8 hex bolt (10)
- 7/16 USS washer (10)
- 7/16-14 Serrated flange nut (2)
- M14 x 100 cl10.9 hex bolt (4)
- 9/16" USS washer (8)
- M14 cl10.9 hex nut (4)
- 2 hole nut plate 92097 (4)

#161 - WJ 4-Link Axle Bracket Hardware (1)

- M14 x 35 cl10.9 hex bolt (3)
- M14 x 100 cl10.9 hex bolt (2)
- M14 x 120 cl10.9 hex bolt (2)
- 9/16 USS washer (8)
- M14 cl10.9 hex nut (4)
- 1/4" control arm spacer 90194 (4)

Shocks

Optional: Doetsch Tech Shocks

- Front shocks DT 8421 (2)
- Rear shocks DT 8403 (2)
 - #9 - DT Shocks (1)
 - Front barpin 403827 (2)

Optional: Bilstein Shocks

- Front shocks 33-104652 (2)
- Rear shocks 33-185569 (2)
 - #17 - Bilstein Shock Hardware (1)
 - Front barpin 403876 (2)
 - 12mm Shock sleeve 404739 (4)
 - 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 4 42x15x7

- Front Iron Y and Passenger Side Lower Control Arm with bushings installed (1)
 - Optional: Fixed (Standard 92150, 92154 or High Clearance 92151, 92155)
 - Optional: Adjustable (Standard 92152, 92156 or High Clearance 92153, 92157)
 - Long Arm Male End 92186 (2)
 - 1/4" - 28 x 1.125" Socket head cap screw (4)
 - 1/4" - 28 Gr8. Nuts (4)
- Caster Adjust Bracket 92100 (1)
- WJ Adjustable Track bar 92001 (1)
- Track bar male end 92004 (1)
- WJ right rear long UCA 92214 (1)
- WJ left rear long UCA 92215 (1)
- WJ right rear long LCA 85109 (1)
- WJ left rear long LCA 85110 (1)
- WJ long arm male end 92186 (4)
- WJ rear 4-link crossmember 92244 (1)
- WJ rear 4-link axle bracket 90234 (1)

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 and lug nuts after the first 100 miles of use, and frequently inspect all safety critical suspension components.

Before you begin:

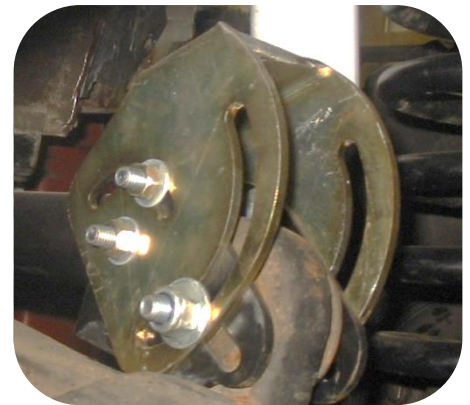
- **Ensure that all parts are present and in good condition using the included shipping checklist.****
- Read all safety warnings.
- Read and understand installation instructions.
- Check all steering and suspension components for wear and replace as needed.
- Contact Iron Rock Off Road with any questions before, during, or after installation.
- This kit will require a custom exhaust.
- Be sure you have the following tools and supplies:
 - Floor jack and jack stands
 - Basic hand tools
 - Torque wrench
 - Multi-purpose grease (all polyurethane bushings should be greased before installation)
 - Hand drill with one or more good quality 7/16" drill bit (s)
 - Letter "T" drill bit.
 - 1/2 -20 fine thread hand tap with tap handle and cutting oil.
 - 7/16-14 course thread hand tap with tap handle
 - Touch up paint to match the color of your unibody frame.
 - Rubberized undercoating.
 - High strength threadlocker adhesive such as Loctite red.
 - Anti-seize compound for bolts.



Barpin Installation

Prepare the parts for installation:

1. Locate hardware kit 3 and the rear shocks.
2. Grease and install the 5/8" I.D. shock bushings included with the shocks (if needed).
3. Grease and install the 12mm four shock bolt sleeves, two from hardware kit 3, two from shock box. The rear shocks use 12mm sleeves at the top and bottom.
4. Leave the rest of the hardware in the bag for future use.
5. Locate the front track bar, track bar male threaded end, and hardware kit 1.
6. Install the jam nut onto the male end, apply anti-seize compound to the threads and install male end.
7. Grease and install the track bar bushings.
8. Grease and install the track bar bolt sleeves.
9. Adjust track bar to 33 9/16" center to center. Tighten jam nut finger tight.
10. Locate the rear sway bar links (14.625" center to center) and hardware kit 2.
11. Grease and install the hourglass bushings.
12. Grease and install the sway bar link bolt sleeves. Each link gets one 12mm I.D. sleeve and one 10mm I.D. sleeve.
13. Leave the rest of the hardware in the bag for future use.
14. Locate the front JKS sway bar quick disconnects. Prepare them per JKS instructions.
15. Locate the rear lower control arms, male threaded ends and hardware kit 65. (Qty: 2)
16. Apply anti-seize compound to male threads and thread into lower control arms.
17. Install clamping bolts and nuts from hardware kit 65. Do not tighten at this time.
18. Adjust to 39" center to center
19. Locate rear upper control arms, male ends and hardware kit 65. (Qty: 2)
20. Apply anti seize to male threads, install and adjust to 30" center to center.
21. Install clamping bolts; do not tighten at this time.
22. Locate front Iron Y long arm, passenger side arm, male ends, caster adjuster and hardware kits 65 & 76.
23. Apply anti seize to male threads, install and adjust to 32-3/8" center to center.
24. Assemble Caster Adjuster. See **Fig 1**.
 - a. Slide Caster adjuster on top of welded on u-shaped bracket as shown.
 - b. 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.
 - c. Install washers and nuts on the carriage bolts finger tight.
 - d. 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
25. Assemble all flex ends per attached flex end instructions (second to last page).



Transfer Case Drop Kit and Front Lower Control Arm Mounting Brackets:

26. Locate the front lower control arm mounting brackets (approx. 7" x 11"), 4 hole transfer case drop spacers, hardware kit 5, and hardware kit 7.
27. Lift front of vehicle and support with jack stands under the front axle.
****Tip: break lug nuts loose before lifting vehicle.**
28. Ensure that vehicle is safely supported.
29. Place a floor jack under the center of the transmission/transfer case crossmember for support.
30. On one side remove the 4 bolts that hold the crossmember to the unibody.
31. Lower the crossmember away from the unibody enough to install the spacer and the correct left or right side lower control arm mounting bracket. It may be necessary to loosen the bolts on the other side of the crossmember.
32. Install the spacer and bracket using the 2 long existing bolts and the 2 new bolts and washers.
33. Align the lower control arm mounting bracket to the vehicle.

34. Tighten bolts
35. Using the bracket as a guide, drill the four 7/16" mounting holes at the front of the bracket.
36. Take the bracket out and remove any burrs from the drilled holes and paint any exposed metal.
37. Insert the nut plates through the hole in the unibody frame and move them into position above the drilled holes.
38. Spray the area where the control arm mounting bracket meets the unibody frame with rubberized undercoating to seal out any moisture between the bracket and the unibody.
39. While the undercoating is still wet, re-install the mounting bracket and transfer case spacer. Use washers under all bolts.
40. Torque all 8 bolts to 65 ft. lbs.
41. Repeat for the other side.
42. Re-torque all 16 bolts.

Rear crossmember:

43. Lift rear of vehicle and support with tall jack stands under the unibody frame.
**Tip: break lug nuts loose before lifting vehicle.
44. Ensure that the vehicle is safely supported.
45. Remove rear tires.
46. Cut exhaust between catalytic converter and muffler. Remove tailpipe and muffler.
47. Removal of catalytic converter may be necessary depending on intended routing of new custom exhaust.
48. Locate crossmember and hardware kit 160.
49. Position crossmember with control arm brackets facing rear of vehicle.
50. Line up crossmember with large holes in frame.
51. Using the crossmember as a template, drill all ten 7/16 holes.
52. Remove crossmember, deburr holes, and paint exposed metal.
53. Insert nut plates into frame and position over 4 outer holes per side.
54. Install crossmember with 7/16 bolts and washers.
55. Install 7/16 bolt, washer, and serrated nut into center hole on each side.
56. Torque all bolts to 65 ft-lbs.



Front Suspension:

57. Lift front of vehicle support with tall jack stands under the unibody frame or transfer case crossmember.
58. Ensure the vehicle is safely supported.
59. Place a floor jack under the front axle for support, do not lift vehicle.
60. Remove front tires.
61. Remove the front shocks.
62. Remove the track bar.
63. Remove front sway bar links.
64. Locate hardware kit 6.
65. Install front brake line spacers between front brake line and axle where the brake line meets the shock mount. Use new M6 bolts and washers.
66. Remove all front upper and lower control arms.
67. With the axle hanging as low as possible, remove coil springs and lower coil spring isolators.
68. Locate Iron Y control arm and 2 control arm bushing spacers (large 1/4" thick washers).
69. Install Iron Y control arm on the driver's side. First install the axle end lower bushing into the axle with 2 spacers on the outboard side, then rotate up to install the arm onto the upper control arm bushing on the axle. Use existing lower control arm bolts, and new m10 x 90 bolt washers, and locknut for the upper control arm. Finally install the back side into the new lower control arm mounting bracket. Do not tighten bolts at this time.
70. Install passenger side lower control arm using 2 control arm bushing spacers on the outboard side of the axle end. Do not tighten bolts at this time.
71. Locate the coil spring retainers (approx. 2" diameter x 5" long aluminum cylinders) and the remainder of hardware kit 6. The coil spring retainers bolt onto the front upper coil spring perch to keep the coil springs from falling out under extreme droop.
72. Using your 1/2-20 fine thread hand tap, tap the existing hole in the center of each front upper coil spring perch (no need to drill).
73. Apply a liberal coating of high strength threadlocker adhesive (such as Loctite red) to the threads of both 1/2" x 5" socket head cap screws. Apply anti-seize compound to the unthreaded shaft of the bolt (not the threads).
74. Position the coil spring retainer onto the upper coil spring pad and install the bolt. Torque to 60 **inch pounds**. Repeat for opposite side.
75. Snap the coil spring isolator onto the new spring.
76. Install new spring in vehicle being careful to align isolator pin with the hole in the spring bucket.
77. Repeat for other front coil spring.
78. Install new front shocks using provided bolts, washers, and nuts. Tighten upper stud mount nuts just enough to slightly compress the bushings. Overcompressing these bushings will result in damage to the bushings and premature bushing failure.
79. Install new JKS sway bar quick disconnect links per JKS instructions.
80. Install track bar. Torque to 80 ft. lbs.
*Note: The bends in the track bar are for clearance of the differential and the bracket on the axle. The threaded adjusting end attaches to the uni-frame.
81. Install front tires.
82. Lower vehicle from jack stands.
83. With the vehicle on the ground, torque any loose bolts to spec. including upper and lower control arm bolts, caster adjuster bolts, lug nuts, etc...
84. Tighten track bar jam nut VERY tight.

Rear Suspension:

85. Lift rear of vehicle and support with tall jack stands under the unibody frame.
**Tip: break lug nuts loose before lifting vehicle.
86. Ensure that the vehicle is safely supported.
87. Remove rear tires.
88. Place a floor jack under the center of rear axle for support (do not lift vehicle).
89. Remove rear shocks.
90. Remove sway bar links.
91. Loosen lower control arm bolts. Remove nuts but do not remove bolts.
92. Allow suspension to droop as much as possible.
93. Remove coil springs.
94. Disconnect all brake lines and ABS wires from upper a-arm.
95. Place a jack stand under the pinion to keep the axle from rotating.
96. Remove the a-arm and a-arm ball joint from the vehicle (no need to separate them)

97. Locate 4-link axle bracket and hardware kit 161.
98. Raise rear axle up to a comfortable position to access the 3 a-arm retaining bolts on top of the differential.
99. Place a jack stand under the pinion to keep the axle from rotating.
100. Remove the 3 a-arm bolts on top of the differential.
101. Remove rear a-arm.
102. Install the 4-link axle bracket on the top of the differential using supplied M14x35 bolts.
103. Torque to 100 ft. lbs.
104. Install new upper control arms with the threaded male end located at the axle side. Do not tighten bolts at this time. Bend hangs down to clear the floor.
105. Locate lower control arms and 4 control arm bushing spacers (large 1/4" thick washers).
106. Install new lower control arms with spacers on the outboard side of the bushings (pushing control arm towards center of vehicle), 2 at each axle bushing. Use the M14 x 120 bolts at axle. Do not tighten bolts at this time. Threaded male ends at the unibody. Bends face up for increased ground clearance, and inward to clear the uniframe.
107. Install coil spring retainers (2" diameter x 5" long black aluminum cylinders). They install in the center of the unibody side coil spring pad. Using plenty of oil, drill the center hole with letter "T" drill bit, again with plenty of oil, tap with 7/16-14 hand tap. Clean the new threads with brake cleaner. Apply high strength threadlocker to the bolts from hardware kit 23. Install coil spring retainers and torque to **60 inch pounds.**
108. Install new coil springs being careful to align the spring to the isolator.
109. Raise the vehicle and support with jack stands under the rear axle.
110. With full vehicle weight on the suspension, check if the rear axle is centered as desired in the wheel opening. Adjust lower control arms to desired axle position. Adjust upper control arms to desired pinion angle (see step 2).
111. Torque all control arm nuts to 120 foot pounds.
112. Tighten all control arm adjusting thread clamping bolts.
113. Install new shocks. Use provided 7/16" washers on the upper shock mounts, place one washer behind the shock bushing, and 2 washers in front of it (toward the outside of the vehicle).
114. Install sway bar links using the existing upper bolt and the new lower bolt, washer, and nut. Torque to 78 ft. lbs. (upper bolt) and 50 ft.lbs. (lower bolt).
115. Install rear tires.
116. Lower vehicle from jack stands.
117. With the vehicle on the ground (or jack stands under the axles), torque any loose bolts to spec. including lug nuts. Grease all flex ends front and rear.

Adjustments and Final Inspection:

118. 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 lines, axle vent hoses, and ABS wires. Reposition as needed by bending the brackets, relocating, or extending hoses and wiring.
 119. Re-center steering wheel by adjusting the drag link (longer) until the steering wheel is centered.
- * A professional front end alignment is required after installation.

We recommend the following alignment settings:

Caster: +3.75 to +6.0 (+4.5 is preferred)

Toe-in: +.20 degrees (+1/16" to +1/8" measured at the tire)

Final Safety Warning:

* Re-torque all fasteners including lug nuts after 100 miles, and frequently inspect all safety critical suspension components. It is the responsibility of the installer to be sure all fasteners are properly tightened after installation and to ensure the owner knows his/her ongoing responsibility. It is the responsibility of the owner of the vehicle to be sure all safety critical components are inspected frequently, especially after off road or other demanding use.

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.



Steering Shimmy Elimination Checklist

Note: Steering Shimmy is also known as "death wobble" or speed wobble. It is a violent shaking of the vehicle caused by the front tires turning side to side repeatedly until you slow down. It usually occurs after hitting a bump or pothole at various speeds above 30MPH. If you experience this steering shimmy just **remain calm, you still have steering and braking control**. Just gently apply the brakes and slow down until the shimmy disappears.

Safety Warning: Some of these adjustments will reduce steering shimmy, but also reduce steering stability and steering responsiveness. Test drive carefully after every modification, if you feel any modification is unsafe do not proceed. Keeping your vehicle safe to drive is the responsibility of the person making the adjustments and the driver. The driver must notice any unsafe actions of the vehicle and correct the problem immediately (e.g. wandering or unresponsive steering). Iron Rock Off Road promotes these modifications for low speed off road use only, some of these modifications may not be safe for use on public or private roads, especially at highway speeds. We recommend working with an experienced alignment shop that has the ability, knowledge, and experience to keep your vehicle safe to drive at highway speeds.

- Check all tie rod ends for wear and replace as needed.
- Adjust toe-in to exactly zero. Note: a slight toe-in is preferred for stability, toe out will reduce steering shimmy. See safety warning at the top of this sheet.
- Adjust caster to 3.0 to 5.5 degrees (more caster will improve stability, less caster will reduce steering shimmy). See safety warning at the top of this sheet.
- Check steering stabilizer including bushings, replace if condition is less than perfect. We have researched extensively and found the best steering stabilizers available with the least amount of free play.
- Balance tires and put the best balanced tires in front. The front tires **MUST** be dynamically balanced, meaning they must have wheel weights on both the inner and outer rim flanges as directed by the balancing machine. If you don't like hammer-on weights on the outer flange either for appearance reasons or because of frequent rock damage, then use stick-on weights for the outer weights – in this case function must precede form...don't balance 'statically' with weights just on the inner rim edge. If a tire/wheel requires more than 6 ounces of total balance weights (inner and outer combined), do not use it on the front axle.
- Check all suspension bushings for wear and loose fasteners including control arms and track bar. Any rubber bushing with cracks, or where the rubber is separating from the steel should be replaced.
- Check steering gearbox for wear and adjust or replace as needed.
- Check wheel bearings for wear.
- Check ball joints for wear.
- Install dual steering stabilizer kit.
- Reduce tire air pressure (try 29psi for OEM size tires, less for larger tires). Note: Reducing air pressure too far can cause tires to overheat and blowout at highway speeds. See safety warning at the top of this page.
- Check vehicle stance. Hub to fender measurements should be minimum ¼" higher in the rear (like OEM stance) for maximum stability (this transfers weight to the front tires). Measure on a level surface with normal cargo and ½ tank of gas for maximum accuracy.