

# IRON ROCK OFF ROAD

## ZJ 4.5 Inch ROCK-LINK Long Arm Installation Instructions

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

93-98 Jeep Grand Cherokee ZJ

### Parts Checklist:

- ☐ Rock-Link decal 13287 (2)
- ☐ Ironrockoffroad.com decal (1)
- ☐ 4.5" front spring 96029 (2)
- ☐ 4.5" rear spring 96017 (2)
- ☐ Rear sway bar link #007 (2)
- ☐ Double shear track bar bracket 91015 (1)
- ☐ ZJ brake line set 10207 (1)
- ☐ 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)

### #274 – ZJ Rear Shock Spacer Hardware (1)

- ☐ Spacer 99170 (2)

### #128 – Front Coil Spring Retainer (1)

- ☐ 3" bump stop spacer MB03 (2)
- ☐ M10 x 100 hex bolt (2)
- ☐ 3/8 USS washer (2)

### #47 - Rear Coil Spring Retainers

- ☐ 3" coil spring retainer MB03 (2)
- ☐ 3/8" x 4" carriage bolt (2)
- ☐ 3/8" USS washer (2)
- ☐ 3/8" hex nut (2)
- ☐ ZJ rear coil spring retainer washer (2)
- ☐ ZJ rear coil spring retainer carriage bolt insert (2)

### Front Subframe Box: 13321 (1)

- ☐ Subframe center 99110 (1)
- ☐ Subframe left outer 99099 (1)
- ☐ Subframe right outer 99106 (1)
- ☐ ZJ T-case drop spacer 99003 (2)
- ☐ 4 hole to 2-hole adapter bracket 99117 (1)

### #180 3-Link Long Arm Subframe Hardware (1)

- ☐ M14 x 2.0 x 90 hex bolt class 10.9 (1)
- ☐ M14 x 2.0 x 110 hex bolt class 10.9 (2)
- ☐ 7/16-14 x 1 1/4 hex bolt grade 8 (8)
- ☐ M10 x 1.5 x 80 hex bolt class 10.9 (1)
- ☐ M10 x 1.5 X 25 carriage bolt (4)
- ☐ M10 x 1.5 x 50 carriage bolt (4)
- ☐ M10 x 1.5 x 30 flange bolt class 10.9 (8)
- ☐ M14 x 2.0 nylock flange nut class 10 (2)
- ☐ 7/16-14 flange nut, zinc (8)
- ☐ M10 x 1.5 hex nut class 10 (4)
- ☐ M10 x 1.5 nylock flange nut class 10 (1)
- ☐ 9/16 F436 hardened washer (5)
- ☐ 3/8 USS washer (9)
- ☐ 7/16 F436 hardened washer (8)

### Front LCA Box: 15783 (1)

- ☐ ZJ Long LCA Left 85107B (1)
- ☐ ZJ Long LCA Right 85108B (1)
- ☐ Angled Long Arm Male End 91109 (2)

### Front UCA Box: 13488 (1)

- ☐ ZJ 3-Link Front UCA 91205 (1)
- ☐ 2 3/8 UCA Male End 91191 (1)

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

- ☐ Inner race 91118 (2)
- ☐ Thrust washer 91119 (2)
- ☐ 2-5/8" Flex End 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)

### #168 2-3/8" Flex End Hardware (1)

- ☐ End cap 91138 (2)
- ☐ Inner race 91139 (2)
- ☐ Flex end ball 91140 (1)
- ☐ 8-32 x 1-1/2" socket head cap screw (8)
- ☐ 1/4"-28 90° grease zerk fitting (1)
- ☐ 1/4"-28 straight grease zerk fitting (1)

### #181 3-Link Control Arm Clamping Hardware (1)

- ☐ 1/4"-28 x 1-1/8" socket head cap screw (4)
- ☐ 3/8-16 x 1 1/4" hex bolt grade 8 (1)
- ☐ 1/4"-28 hex nut, grade 8 (4)
- ☐ 3/8-16 nylock flange nut (1)
- ☐ 3/8 Mil Spec. washer 95229A480 (1)

### ~Standard Front Sway Bar Links~

- ☐ 8.75" Front sway bar link 92145 (2)

### #58 – ZJ Sway Bar Link Hardware (1)

- ☐ 3/4" I.D. hourglass shock bushings 94025 (4)
- ☐ 12mm I.D. sway bar bolt sleeves 92038 (4)
- ☐ 12mm x 60mm class 10.9 ba1hex 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)



### ~Optional Front Sway Bar Disconnect Upgrade~

- ☐ 8.75" Front sway bar link 92145 (2)

### #268 – Sway Bar Disconnect Bushings (1)

- ☐ Poly Bushing 94025 (4)

### #286 – ZJ Sway Bar Disconnect Hardware (1)

- ☐ Disconnect Pin 94028 (2)
- ☐ 1/2-20 x 1" Hex Bolt, gr8 (2)
- ☐ 1/2 F436 Hard Washer (2)
- ☐ 1/4" x 1-1/4" Spring Lynch Pin (2)
- ☐ 12mm bolt sleeve 92038 (2)
- ☐ M12 x 60 hex bolt, cl10.9 (2)
- ☐ M12 hex nut, cl10.9 (2)
- ☐ M10 x 30 hex bolt, cl10.9 (2)
- ☐ 3/8" USS washer (2)
- ☐ M10 hex nut, cl10.9 (2)
- ☐ U-Bracket 99000 (2)



- ☐ Double adjustable track bar 92305 (1)
- ☐ Double adjustable track bar male end 92297 (1)
- ☐ Double adjuster, track bar 91235 (1)



### ~Standard Front Track Bar~

### #277 – XJ/ZJ Double Adjustable Track Bar Hardware (1)

- ☐ Track bar bushing half 80014 (4)
- ☐ 12mm track bar bushing sleeve 92035 (1)
- ☐ 7/16" I.D. track bar bushing sleeve 92036 (1)

- ☐ Track bar clamp 92303 (2)
- ☐ M12-1.75 x 80 hex bolt (2)
- ☐ M12-1.75 hex nut (2)
- ☐ 7/16" x 2-1/2" hex bolt, gr8 (1)
- ☐ 7/16" Track Bar Flag Nut 91230 (1)
- ☐ 7/16" USS flat washer (5)

**~Optional Front Track Bar~**

**#122 - Track Bar Flex End Hardware - 12mm (2)**

- ☐ Inner race (plastic) 91113 (2)
- ☐ End cap (steel) 91112 (2)
- ☐ Ball 91104 – M12 bolt (1)
- ☐ #5-40 x 1 1/4" Socket head cap screw (9)
- ☐ 3/32" Hex L key, high torque (hex plus) (1)

**#277 – XJ/ZJ Double Adjustable Track Bar Hardware (1)**

- ☐ Track bar bushing half 80014 (4)
- ☐ 12mm track bar bushing sleeve 92035 (1)
- ☐ 7/16" I.D. track bar bushing sleeve 92036 (1)
- ☐ Track bar clamp 92303 (2)
- ☐ M12-1.75 x 80 hex bolt (2)
- ☐ M12-1.75 hex nut (2)
- ☐ 7/16" x 2-1/2" hex bolt, gr8 (1)
- ☐ 7/16" Track Bar Flag Nut 91230 (1)
- ☐ 7/16" USS flat washer (5)

- ☐ ZJ adjustable rear track bar 99083 (1)
- ☐ Track bar male threaded end 92004 (1)



**~Standard Rear Track Bar~**

**#13 – Rear Track Bar Hardware (1)**

- ☐ Track bar bushing half 80014 (4)
- ☐ 12mm TB bushing sleeve 92035 (2)
- ☐ M12-1.75 x 70 hex bolt cl10.9 (1)
- ☐ M12-1.75 hex nut cl10.9 (1)
- ☐ 7/8-14 hex jam nut (1)

**~Optional Premium Rear Track Bar~**

**#300 – TJ Premium Rear Track Bar Hardware (1)**

- ☐ M12-1.75 x 70 hex bolt cl10.9 (1)
- ☐ M12-1.75 hex nut cl10.9 (1)
- ☐ 7/8-14 hex jam nut (1)

**#122 - Track Bar Flex End Hardware - 12mm (2)**

- ☐ Inner race (plastic) 91113 (2)
- ☐ End cap (steel) 91112 (2)
- ☐ Ball 91104 – M12 bolt (1)
- ☐ #5-40 x 1 1/4" Socket head cap screw (9)
- ☐ 3/32" Hex L key, high torque (hex plus) (1)

**Standard Rubber Bushing Lower Control Arms (Rear)**

- ☐ Adjustable bent lower control arm, bushing installed 99169B (2)
- ☐ LCA Threaded Male End, bushing installed 99070 (2)

**#65 - Adjustable LCA Clamping Hardware (1)**

- ☐ 1/4"-28 x 1-1/8" socket head cap screw (4)
- ☐ 1/4"-28 hex nut, gr8 (4)



**Optional Flex Joint Lower Control Arms (Rear)**

- ☐ Adjustable bent lower control arm, bushing installed 99169B (2)
- ☐ LCA Threaded Male End 92186 (2)

**#65 - Adjustable LCA Clamping Hardware (1)**

- ☐ 1/4"-28 x 1-1/8" socket head cap screw (4)
- ☐ 1/4"-28 hex nut, gr8 (4)

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

- ☐ Inner race 91118 (2)
- ☐ Thrust washer 91119 (2)
- ☐ 2-5/8" Flex End Ball 91117 (1)
- ☐ 10-32 x 1-3/4" Socket Head Cap Screw (6)
- ☐ 10-32 Nylock Nut (6)
- ☐ 1/4"-28 90° Grease zerk Fitting (1)

**Shocks**

☐ **Trail Tamer HD Hydro (Standard)**

- ☐ Front shock 79002 (2)
- ☐ Rear shock 79005 (2)

☐ **Doetsch Upgrade (Optional)**

- ☐ Front shock DT 8386 (2)
- ☐ Rear shock DT 8371 (2)

**#9 - DT front shocks**

- ☐ 2.5" Front shock barpin 403876 (2)

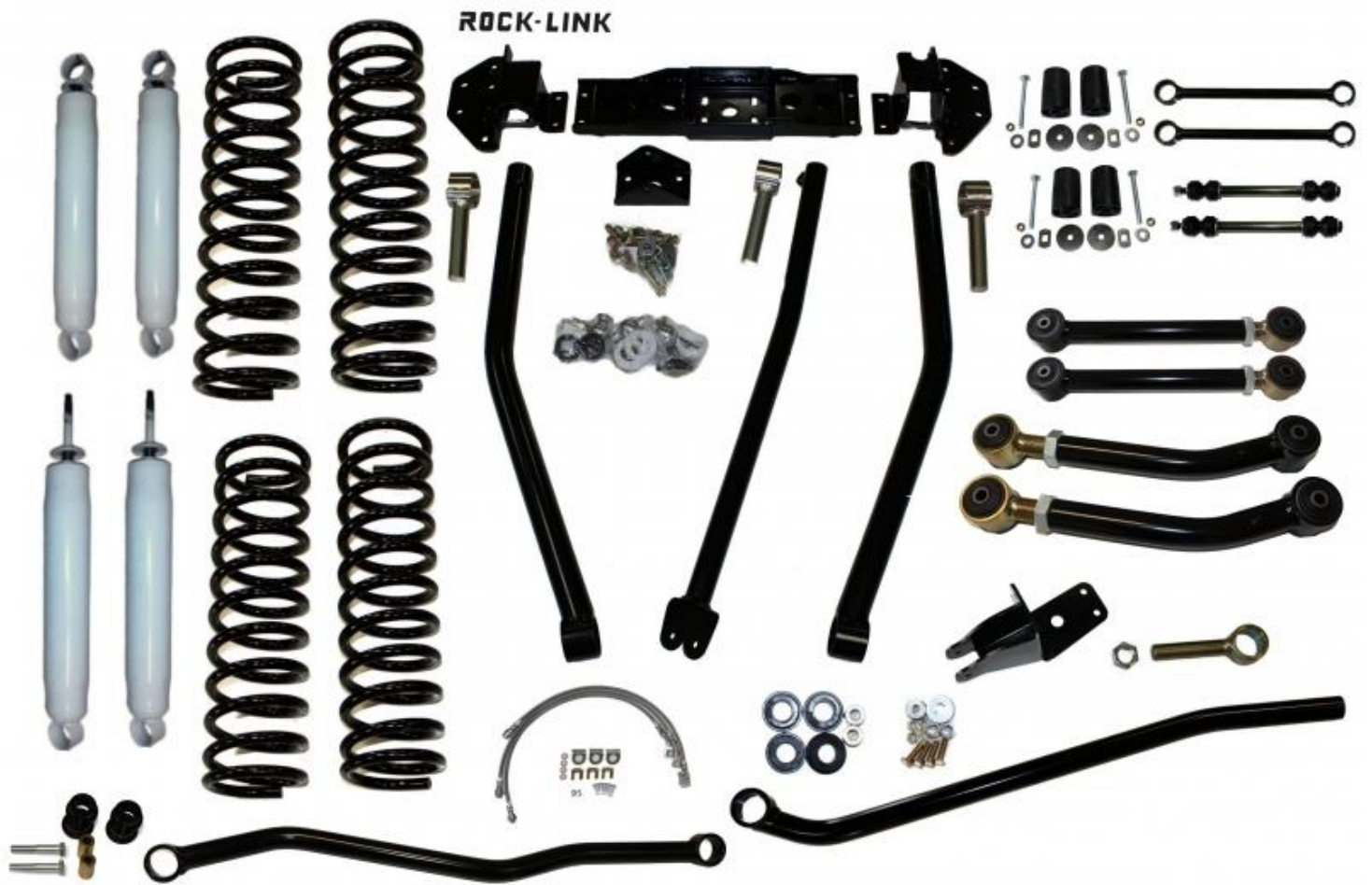
☐ **Bilstein Upgrade (Optional)**

- ☐ Front shock 33-230375 (2)
- ☐ Rear shock 33-104652 (2)

**#9 – Shock Hardware (1)**

- ☐ 2.5" Front shock barpin 403876 (2)







# Installation Instructions:

## Safety Warning: \*\*\*Important! Read before installation.\*\*\*

We recommend 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.
- ☐ Contact Iron Rock Off Road with any questions before, during, or after installation.
- ☐ **Ensure that all parts are present and in good condition using the included shipping checklist prior to scheduling installation.**
- ☐ Be sure you have the following tools and supplies:
  - ☐ Floor jack and jack stands.
  - ☐ Basic hand tools (wrenches, sockets, etc.).
  - ☐ Multi-purpose grease
  - ☐ Metal cutting tools such as a 4 1/2" angle grinder with thin metal cutting wheel, and a sandpaper flap wheel for an attractive finish. Possibly a Sawzall with metal cutting blades.
  - ☐ Paint and primer (for uniframe - black or your choice of color).
  - ☐ Anti-seize compound
  - ☐ Hand Drill
  - ☐ 7/16" drill bit
  - ☐ Angle finder
  - ☐ T55 Torx bit
  - ☐ String level or laser level

### **\*\*NOTE\*\***

#### **To minimize downtime of your Jeep:**

The front subframe can be installed without affecting the ability to drive your Jeep.



Lower Control Arms

## Prepare the parts for Installation:

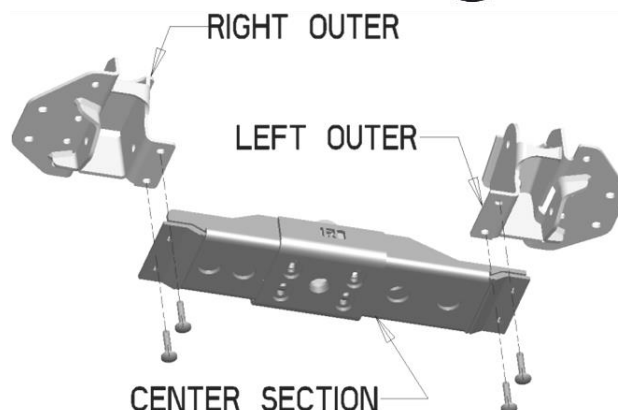
1. **Front Control Arms:** Locate the lower control arms (larger), male ends (larger, angled), **HK #127** and **HK #181**.
2. Assemble flex ends into male ends. Use **HK #127** and attached instructions (2-5/8").
3. Locate the upper control arm (smaller), male end (smaller, straight), and **HK #168**.
4. Assemble flex end into front upper control arm. Use **HK #168** and attached instructions (2 3/8"), install straight grease zerk.
5. Apply a light coat of anti-seize compound to the threads and thread the male ends into control arms.
6. Install clamping bolts from **HK #181**. Do not tighten at this time.
7. Adjust control arm lengths per the chart.
8. **Rear Control Arms:** Apply a light coat of anti-seize compound to the threads and install jam nuts on UCAs. If you upgraded to flex joints refer to the instructions at the end of this document.
9. Adjust rear control arms to length in the chart and install **HK #65** into LCAs.

Control Arm Length (Starting Lengths - Center to Center)	
Front Lower Control Arms	36-1/2" (Short Side)
Front Upper Control Arm	37-1/4"
Rear Lower Control Arms	18-5/16"
Rear Upper Control Arms	14-7/8"

10. **Track Bars:** Locate front track bar, track bar male threaded end, track bar bracket, double adjuster, and **HK #277**. Install clamps onto the double adjuster.  
\*\*If you upgraded to the Premium Track Bar refer to the instructions at the end of this document. Install flex joint into frame end of front track bar.
11. Apply anti-seize to all the threads then thread the track bar and male end into the double adjuster. Ensure the ends are equally threaded into the double adjuster then adjust the length to 33-5/8" center to center as a starting point.
12. Apply multi-purpose grease to both poly bushings and both inner bushing sleeves. Install bushings then sleeves into the track bar. The sleeve with the larger hole goes into frame side. (Longer end)
13. Locate rear track bar and **HK #13**.

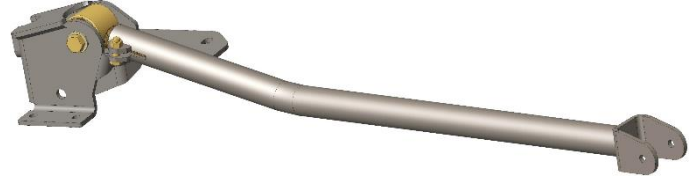


14. Lubricate track bar bushings and bushing sleeves with multi-purpose grease and install. If installing an adjustable rear track bar, install jam nut onto threaded end of track bar, adjust the length to 32" center to center as a starting point.
15. **Sway Bar Links:** Locate front sway bar links (8.75" center to center) and **HK #58**. If you upgraded to IRO Sway Bar Disconnects refer to the instructions at the end of this document.
16. Lubricate sway bar link bushings and bushing sleeves with multi-purpose grease and install into sway bar links.
17. **Shocks:** Install barpins into front shocks. Lubricate shock bushings and barpins with multi-purpose grease, clamp barpin vertically in a bench vise, and push shock onto barpin rotating the shock as you push down.
18. Install 12mm I.D. sleeves into rear shocks. Lubricate shock bushings and 12mm I.D. sleeves with multi-purpose grease and press the sleeves into the lower shock bushings only.



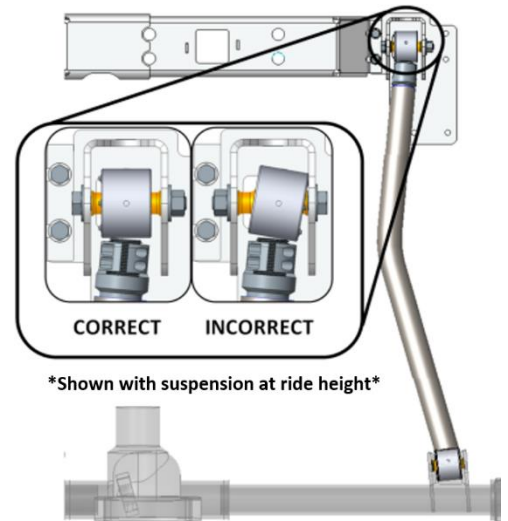
## **Control arm mounting subframe:**

19. Lift front and rear of vehicle and support with jack stands under the uniframe. Leave room to cut off the stock lower control arm mounts.
20. Raise transfer case very slightly and support with a jack stand.
21. Remove the four transmission mount nuts from the transmission crossmember or the single bolt for the 2-hole subframe.
22. Remove the factory transmission mounting crossmember.
23. Locate the three subframe parts and **HK #180**.
24. Install left and right outers using the provided M10 flange bolts in the same holes that held the factory crossmember. Be sure that the control arm mounting pockets are facing forward.
25. Install center section using M10 x 25 carriage bolts and M10 nuts.
26. Tighten bolts firmly (bolts will be removed after drilling.)
27. Drill the 8 additional 7/16" mounting holes using the subframe as a guide.
28. Remove subframe center section then left and right outers. Remove any burrs and sharp edges around the holes. Clean, prime and paint any exposed metal.
29. **To make installation easier install upper control arm into left subframe outer**; use M14 x 90 bolt and torque to 135 ft-lbs. The threaded male end is installed at the subframe with the bend hanging down to clear the floor.
30. Install left and right outers using M10 flange and 7/16" bolts, flange nuts, and washers from **HK #180**.
31. If you have only one bolt mounting the transmission to the crossmember (2 hole) install provided 2-hole adapter bracket (large u-shaped bracket) inside the subframe center section. Use provided M10 flange bolts, washers, and nuts. Torque bolts to 50 ft-lbs.
32. Using M10 x 25 carriage bolts, 3/8" washers, and M10 nuts, assemble subframe center section to the outers (center section underneath the outers). **\*\*\*The long side of the center section attaches to the left outer subframe.\*\*\***
33. If your transfer case will be dropped, then install provided transfer case drop spacers between the subframe outers and center section using the longer 50mm carriage bolts.
34. Torque 7/16 bolts to 65 ft-lbs. Torque M10 bolts to 31 ft-lbs.
35. Torque subframe center section bolts to 45 ft-lbs.
36. Lower the transfer case on to subframe.
37. For 4 bolt transmission mounts, install the four existing transmission mount nuts and torque to 24-36 ft-lbs.
38. For 1 bolt transmission mounts, install the factory bolt and nut and torque to 78 ft-lbs.



## **Front Suspension:**

39. Ensure that vehicle is safely supported. Support front axle with a floor jack (do not lift vehicle).
40. Remove front tires, shocks, sway bar links, as well as the upper and lower control arms.
41. Remove front track bar and the bracket that attaches track bar to unibody.
42. Allow axle to droop as much as possible and remove front coil spring clamps and front coil springs.
43. Disconnect the driveshaft on the axle side and tape the u-joint so the caps do not fall off. Tie the driveshaft out of the way (use tape, zip tie, mechanic's wire, etc.) for easier access to the lower control arm mount.
44. Tie the upper control arm out of the way.
45. Cut off factory lower control arm mounts from the uniframe on the driver's and passenger's side.  
**\*\*\*Tip: Our favorite tool for this is a 4 1/2" angle grinder with a thin cutting wheel. Remove in pieces for ease of access.\*\*\***
46. Remove anything on the driver's side that extends inward (toward the transmission) beyond the uniframe. Do not remove any of the uniframe, just make it one continuous edge from front to rear.
47. Clean up any burrs or sharp edges and grind smooth for an attractive appearance.
48. Clean, prime, and paint any exposed metal.
49. Connect the upper control arm to the axle using M10 x 80 bolt with washer and nylock flange nut. Do not tighten at this time.
50. Install lower control arms with threaded adjusting end at the uniframe, and bends facing inward to clear the tires, thread clamping bolts facing down. At the subframe, use provided M14 x 110 bolts, 9/16" washers, and nylock nuts. At the axle, re-use factory cam bolts and nuts. Do not tighten at this time.
51. Remove bump stop and bump stop cups.
52. Locate **HK #128** 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.
53. Install coil springs. Ensure coil spring is aligned to spring bucket on axle. Longer springs go in front.
54. 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.**
55. Install the track bar and torque bolt at axle to 74 ft-lbs., and bolt at bracket to 80 ft-lbs.



56. Orient track bar clamps to not interfere with any other components. Tighten track bar clamps to 60 ft-lbs.
57. Locate front sway bar links (8.75" center to center), two u-brackets, and **HK #58**.
58. 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 ft-lbs.
59. Install sway bar links driver's side first using provided M12 x 60mm 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 ft-lbs.
60. Remove front brake hoses and replace with supplied hoses. Rotate the hoses away from other items to ensure no rubbing or chaffing.
61. Install front shocks using original barpin 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.
62. Torque shock barpin bolts to 17 ft-lbs.
63. 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.
64. Any remaining loose bolts will be tightened after rear suspension is installed.

## **Rear Suspension:**

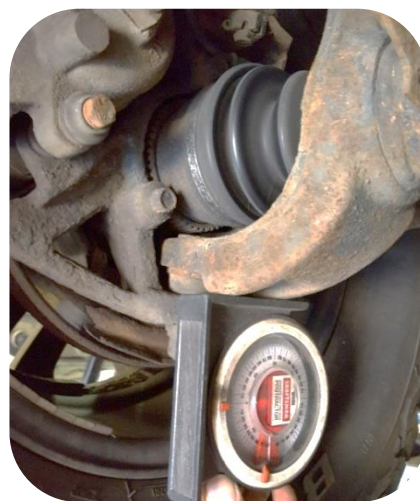
65. Lift rear of vehicle and support with tall jack stands under the unibody frame. Support rear axle with floor jack (do not lift vehicle).
66. Remove rear tires, shocks, sway bar links, upper and lower control arms, and rear track bar (most ZJ's require a T55 Torx socket for the track bar bolts).
67. Allow axle to droop as much as possible.
68. Remove coil spring clamps and coil springs.
69. Locate rear coil spring retainers (3" long black plastic cylinders) and **HK #47**.
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. The bend goes to the axle side, bend faces down to allow additional droop. Do not tighten bolts at this time.
76. Ensure male ends are parallel with control arm mounts then torque lower control arm clamping bolts to **140 in-lb**. Be sure to go back and forth between both bolts several times to ensure even clamping.
77. Install upper control arms. Do not tighten bolts at this time.
78. Locate rear track bar and **HK #13**.
79. 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.
80. Torque track bar bolts to 78 ft-lbs.
81. Lubricate upper shock bushings and upper shock mounting studs on the vehicle with multi-purpose grease.
82. Install spacer from **HK #274** on upper rear shock stud then install rear shocks with shock shafts facing up. Torque upper nuts to 46 ft-lbs., and lower nuts to 80 ft-lbs.
83. Remove brake hose and replace with provided brake hose.
84. Raise vehicle and relocate the jack stands under the front and rear axles so that the vehicle's weight is on the suspension system.
85. Ensure that the vehicle is safely supported.
86. 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.
87. Install front and rear coil spring clamps.
88. Torque front and rear upper control arm nuts to 60 ft-lbs.
89. Torque front and rear lower control arm nuts to 120 ft-lbs.
90. Tighten any jam nuts very tight (track bars, control arms, etc.).
91. Torque any remaining loose bolts to spec.
92. Bleed the brakes. See factory service manual for brake bleeding procedure.

## **Adjustments and Final Inspection:**

93. Raise vehicle and reposition jack stands under the front and rear axles.
94. Temporarily install tire on one side and verify that the front axle is centered as desired front to rear.
95. 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. See chart for desired setting.
96. Adjust control arms to the desired position.
  - To adjust axle front to rear, adjust upper and lower control arms by the same amount. 12 turns equal one inch.
  - To adjust only caster, adjust only the upper control arm (3 turns equals roughly 2 degrees).
  - To adjust both, adjust both at the same time.
  - **\*\*\*Caster angle may need to be adjusted after a test drive to eliminate driveline vibrations. \*\*\***
97. Ensure front axle is centered. Orient track bar clamps to not interfere with any other components. Tighten track bar clamps to 60 ft-lbs.
98. Torque Lower control arm bolts to 135 ft-lbs.
99. Torque Upper control arm nut at axle to 60 ft-lbs.
100. Torque lower control arm clamping bolts to **140 in-lb**. Be sure to go back and forth between both bolts several times to ensure even clamping.
101. Install tires and wheels. Torque lug nuts to spec. (Typical specification is 85-115 ft-lbs., depending on your wheels)

<b>Caster Angle (Starting point)</b>	
Lift Height	Caster
3.5	7 degrees
4.5	5.5 degrees
5.5	4.5 degrees
7	3.5 degrees

102. Recheck all fasteners and torque any remaining loose nuts or bolts to spec.



### **Adjustments and Final Inspection:**

103. 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.

**\* A professional front end alignment is required after installation. \* Recommended alignment settings:**

**Caster:** +3.75 to +7.5 See chart

**Toe-in:** +1/16" to +1/8"

### **Final Safety Warning:**

\* Re-torque all fasteners after 100 miles, and frequently inspect all safety critical suspension components. It is the responsibility of the installer to ensure 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.*

## **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

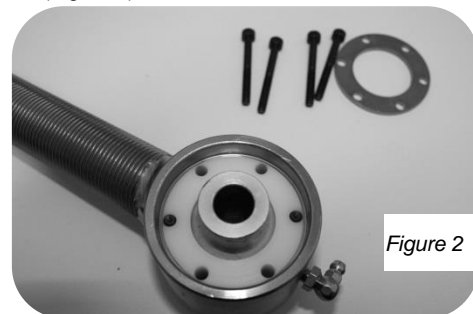


Figure 4



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

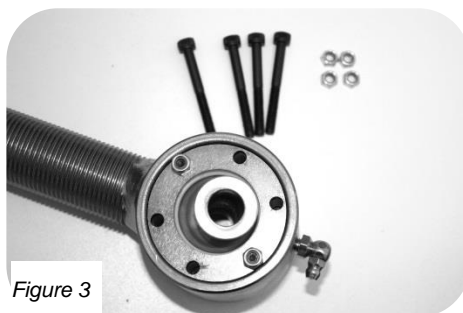


Figure 3



# IRON ROCK OFF ROAD

**2-3/8" IRO Flex End (8 bolt)**  
**Assembly Instructions**

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

## 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:
  - 9/64" 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)

### #168 - 2-3/8" IRO Flex End (8 bolt)

- ☐ Inner race 91139 (2)
- ☐ Thrust washer 91138 (2)
- ☐ Ball 91140 (1)
- ☐ #8-32 x 1-1/2" socket head cap screw (8)
- ☐ 1/4"-28 90° grease zerk fitting (1)
- ☐ 1/4"-28 straight grease zerk fitting (1)

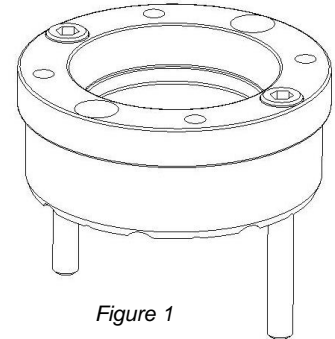
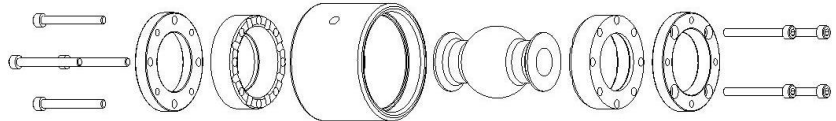
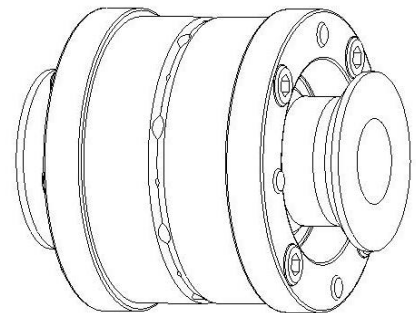


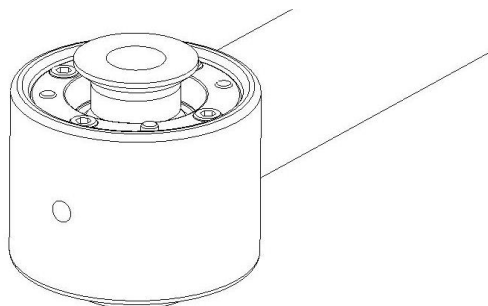
Figure 1

## Assembly:

1. Insert two #8-32 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.
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, aligning the bolts with the threaded holes.
7. Start threading the two bolts into the threaded holes of the thrust washer. Do not fully tighten at this time.
8. Insert the remaining cap screws through the remaining holes and get them started in the threaded washer.
9. Snug up all of the bolts fairly tight. Go back and forth, rechecking each bolt several times to ensure even clamping
10. Torque bolts evenly starting at one bolt using a crisscross pattern, like torquing lug nuts. Torque all eight bolts to 50 in-lbs., then to 55 in-lbs.
11. Install 90° grease zerk fitting so that it is easily accessed in the vehicle.
12. Use a grease gun to grease the flex end through the zerk fitting. This will be difficult due to the tight tolerances in the flex joint assembly.
13. Re-torque bolts to 55 in-lbs.



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



# IRON ROCK OFF ROAD

Track Bar Flex End Assembly Instructions

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## Parts Checklist:

### #122 - Track Bar Flex End - 12mm (1)

- ☐ Inner race (plastic) 91113 (2)
- ☐ End cap (steel) 91112 (2)
- ☐ Ball 91104 – M12 bolt (1)
- ☐ #5-40 x 1 1/4" Socket head cap screw (9)
- ☐ 3/32" Hex L key, high torque (hex plus) (1)

### #254 - Track Bar Flex End - 14mm (1)

- ☐ Inner race (plastic) 91113 (2)
- ☐ End cap (steel) 91112 (2)
- ☐ Ball 91142 – M14 bolt (1)
- ☐ #5-40 x 1 1/4" Socket head cap screw (9)
- ☐ 3/32" Hex L key, high torque (hex plus) (1)



## Safety Warning:

Installation and assembly of this part requires knowledge of steering and suspension systems. Failure to precisely adhere to installation procedure may cause a part failure resulting in vehicle damage and serious injury or death. This part only fits Iron Rock Off Road track bars in good condition. Iron Rock Off Road makes no claims that this part will fit track bars from other manufacturers. Improper fitment may cause a part failure resulting in vehicle damage, serious injury, or death.

## 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 Ensure that you have high strength threadlocker (such as red Loctite) and multi-purpose grease.

## Fitment:

This kit replaces the poly bushings and inner sleeve in your Iron Rock Off Road track bar. This part only fits track bars manufactured by Iron Rock Off Road after 2009 with an inside diameter of 1.510", a width of 1.250", and a radiused inside corner.

**\*\*\*To verify fitment: Remove the track bar from your vehicle, remove the poly bushings, clean the parts, and verify the following is true: \*\*\***

- ☐ The plastic races fit tight inside the inside bore.
- ☐ Both end caps fit the inside bore with just a bit of "wiggle room".
- ☐ Both end caps slide in freely until the flat shoulder rests firmly against the end of the outer tube.
- ☐ The overall width of the outer tube is 1.250". This can be measured with a caliper or verified after flex end is fully assembled. Once fully assembled (bolts torqued to spec.) the shoulders of the end caps should rest firmly against the ends of the outer tube. At the same time, the ball should fit tight inside the assembly. It should require a tool (such as a screwdriver) to pivot or rotate the ball. The ball should pivot smoothly with even resistance in any position.



If any of those steps cannot be verified, please contact us to order a new track bar.

**Bolt size:** This bushing replacement assembly is only available to fit a 12mm & 14mm bolt at this time. Those with a 10mm fastener may wish to upgrade to 12mm hardware for more strength (drill your bracket and install a 12mm bolt).

## Assembly:

1. Verify fitment per the "Fitment" section above.
2. Insert four socket head cap screws into one end cap and one race. (Race should have spherical bore facing away from end cap.)
3. Install this small assembly into the track bar outer bushing tube. The races are a light press fit, use a wide punch and hammer to assist you if needed.
4. Apply a thin coat of multi-purpose grease to the ball and the spherical mating surface of the races. Coat both mating surfaces but leave no excess grease that would interfere with the threadlocker adhesive on the bolts.
5. Place the ball into the race inside the housing. The ball should fit the contour of the race perfectly.
6. Insert the other race on top of 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 four screws should be through one end cap and both races at this point.)
7. Apply a generous coating of high strength threadlocker (such as red Loctite) to all 8 screws (including the ones already installed).
8. Install the second end cap, aligning the screws with the tapped holes. When completed 4 screws will be inserted from each side.
9. Insert the last four screws and tighten them all snug.
10. Torque screws in sequence using a crisscross pattern, like torquing lug nuts. Tighten all 8 screws evenly in small steps. Take your time and do not rush. Tighten all 8 screws to 20 in/lbs.



# IRON ROCK OFF ROAD

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## Sway Bar Disconnect Links Instructions

### Parts List:

#### #268 – Sway Bar Disconnect Bushings (1)

- ☐ Poly Bushing 94025 (4)

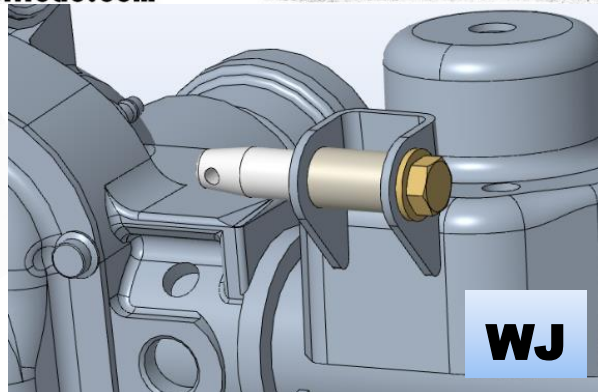
#### WJ ~Optional~

#### #267 – WJ Sway Bar Disconnect Hardware (1)

- ☐ Disconnect Pin 94028 (2)
- ☐ Spacer Sleeve 94032 (2)
- ☐ 1/2-20 x 2-1/2" Hex Bolt, gr8 (2)
- ☐ 1/2 F436 Hard Washer (2)
- ☐ 1/4" x 1-1/4" Spring Lynch Pin (2)

#### #288 – WJ Sway Bar Disconnect Sleeves (1)

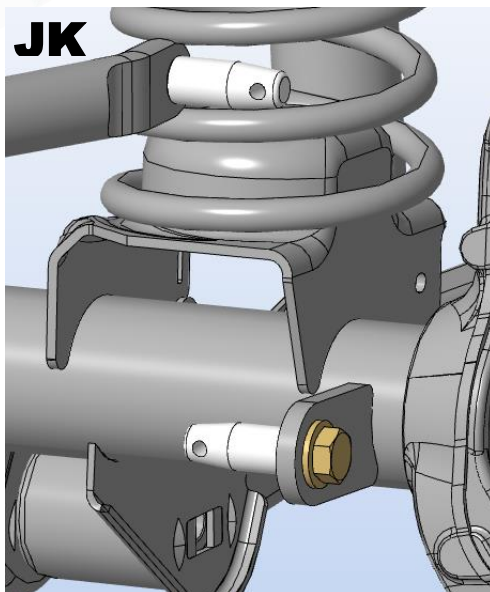
- ☐ 12mm bushing sleeve 92038 (2)



#### JK ~Optional~

#### #266 – JK Sway Bar Disconnect Hardware (2)

- ☐ Disconnect Pin 94028 (2)
- ☐ 1/2-20 x 1" Hex Bolt, gr8 (2)
- ☐ 1/2 F436 Hard Washer (2)
- ☐ 1/4" x 1-1/4" Spring Lynch Pin (2)



#### XJ ~Optional~

#### #287 – XJ Sway Bar Disconnect Hardware (1)

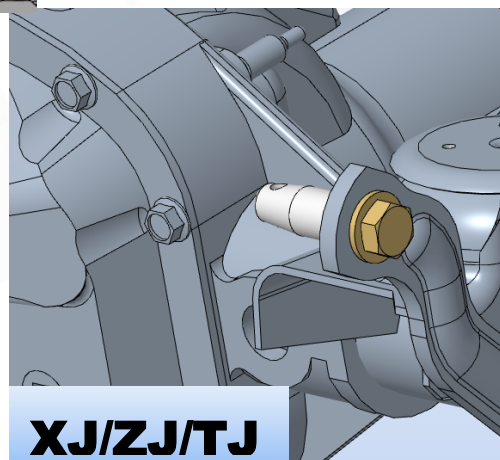
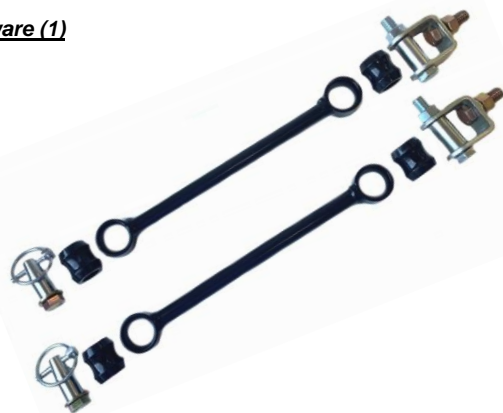
- ☐ Disconnect Pin 94028 (2)
- ☐ 1/2-20 x 1" Hex Bolt, gr8 (2)
- ☐ 1/2 F436 Hard Washer (2)
- ☐ 1/4" x 1-1/4" Spring Lynch Pin (2)
- ☐ 12mm bolt sleeve 92038 (2)
- ☐ M12 x 70 cl10.9 hex bolt (2)
- ☐ M12 cl10.9 hex nut (2)
- ☐ 1/2 x 1 1/2" gr8 hex bolt (2)
- ☐ 1/2 gr8 lock washer (2)
- ☐ 1/2 gr8 hex nut (2)
- ☐ U-Bracket 99000 (2)



#### TJ & ZJ ~Optional~

#### #286 – TJ & ZJ Sway Bar Disconnect Hardware (1)

- ☐ Disconnect Pin 94028 (2)
- ☐ 1/2-20 x 1" Hex Bolt, gr8 (2)
- ☐ 1/2 F436 Hard Washer (2)
- ☐ 1/4" x 1-1/4" Spring Lynch Pin (2)
- ☐ 12mm bolt sleeve 92038 (2)
- ☐ M12 x 60 hex bolt, cl10.9 (2)
- ☐ M12 hex nut, cl10.9 (2)
- ☐ M10 x 30 hex bolt, cl10.9 (2)
- ☐ 3/8" USS washer (2)
- ☐ M10 hex nut, cl10.9 (2)
- ☐ U-Bracket 99000 (2)



### Installation Instructions:

#### Safety Warning: \*Important! Read before installation. \*

We recommend 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 frequently.

### Notes:

- ☐ Do not operate vehicle with only one side of the sway bar connected. Both sides of the sway bar must either be disconnected or both sides must be connected.

### **Before you begin:**

- ☐ Read all safety warnings.
- ☐ Read and understand installation instructions.
- ☐ Contact Iron Rock Off Road with any questions before, during, or after installation. 952-210-7185
- ☐ **Ensure that all parts are present and in good condition using the included shipping checklist.**
- ☐ Be sure you have the following tools and supplies:
  - ☐ Floor jack and jack stands.
  - ☐ Basic hand tools (wrenches, sockets, etc.).
  - ☐ Multi-purpose grease

### **Prepare for installation:**

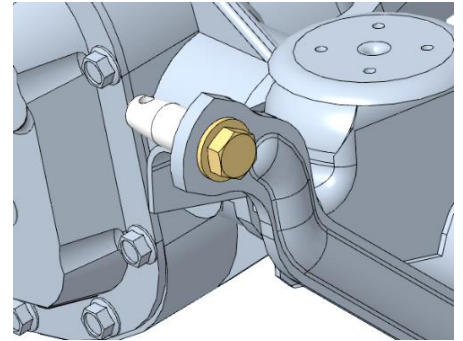
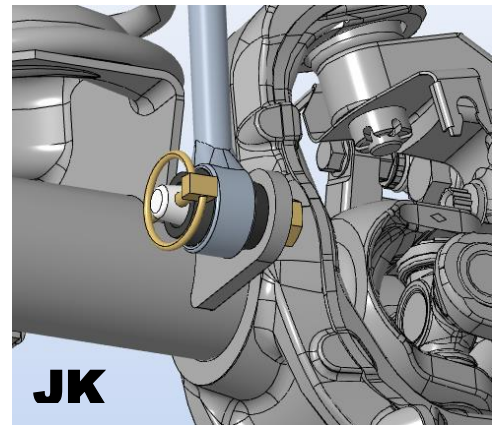
1. Locate the front sway bar links, bushings, and bolt sleeves.
2. Grease and install the hourglass bushings.
3. Grease and install the sway bar link inner sleeves in only one end of each link.
4. Raise the vehicle and secure on jack stands under the frame.
5. Remove the front tires.
6. Disconnect the original front sway bar links from the axle and sway bar.

### **XJ Installation:**

7. Locate front sway bar links, two u-brackets, and **HK #287**.
8. 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 the bracket so it is offset away from the center of the vehicle. Align brackets, torque bolts to 80 ft-lbs.
9. Install sway bar links driver's side first using provided M12 x 60mm class 10.9 hex bolt and nut through the u-bracket with the nuts toward the outside of the vehicle. Tighten all bolts to 78 ft-lbs.
10. Install the disconnect pin on the axle, pin pointing in-board. Use the 1/2" x 1" bolt with a washer.  
*Tip:* Before tightening determine your desired orientation for the retaining pin.
11. Hold the disconnect pin in your desired orientation and torque the bolt to 70lb-ft.
12. Apply grease to the disconnect pin and slide the sway bar link onto the disconnect pin.
13. Secure the sway bar link in place using the spring lynch pin.  
**\*NOTE:** The spring lynch pin should take some effort to install. This is done on purpose to keep the link secure and noise free.
14. Reinstall tires and torque lug nuts to spec.
15. Lower vehicle to the ground.
16. With the vehicle back on the ground, pull the spring pins and slip the sway bar links off the disconnect pins.
17. Swing the sway bar links up to the sway bar then swing the sway bar up to its highest position.
18. Flex the suspension and steer fully left and right. Check for possible interference between the tires and sway bar.
19. Reconnect the sway bar links to the axle.
20. For ease of installation and best performance, re-grease the sway bar bushings periodically.

### **ZJ and TJ Installation:**

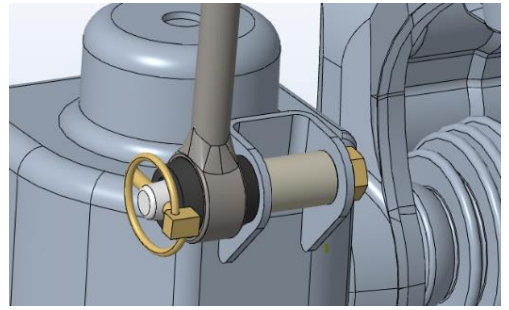
21. Locate front sway bar links, two u-brackets, and **HK #286**.
22. Install sway bar link u-brackets to the sway bar using M10 x 30 hex bolts nuts and washers. Brackets mount to the bottom of the sway bar with the bolt facing up and the washer and nut on top of the sway bar. Align brackets with offset holes pushing the brackets toward the outside of the vehicle. Torque to 60 ft-lb.
23. Install sway bar links driver's side first using provided M12 x 60mm class 10.9 hex bolt and nut through the u-bracket with the nuts toward the outside of the vehicle. Tighten all bolts to 78 ft-lb.
24. Install the disconnect pin on the axle, pin pointing in-board. Use the 1/2" x 1" bolt with a washer.  
*Tip:* Before tightening determine your desired orientation for the retaining pin.
25. Hold the disconnect pin in your desired orientation and torque the bolt to 70lb-ft.
26. Apply grease to the disconnect pin and slide the sway bar link onto the disconnect pin.
27. Secure the sway bar link in place using the spring lynch pin.  
**\*NOTE:** The spring lynch pin should take some effort to install. This is done on purpose to keep the link secure and noise free.
28. Reinstall tires and torque lug nuts to spec.
29. Lower vehicle to the ground.
30. With the vehicle back on the ground, pull the spring pins and slip the sway bar links off the disconnect pins.
31. Swing the sway bar links up to the sway bar then swing the sway bar up to its highest position.
32. Flex the suspension and steer fully left and right. Check for possible interference between the tires and sway bar.
33. Reconnect the sway bar links to the axle.
34. For ease of installation and best performance, re-grease the sway bar bushings periodically.





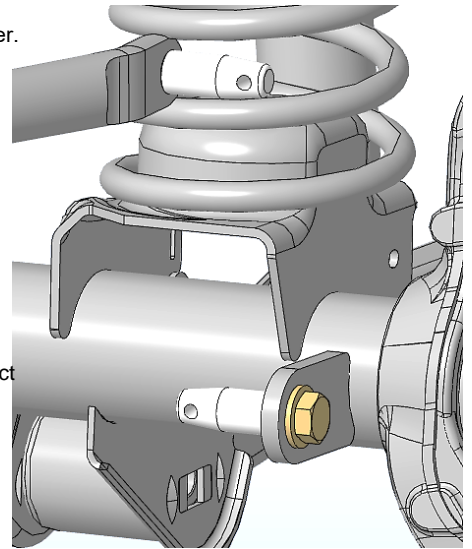
## **WJ Installation:**

35. Install the sway bar links onto the sway bar using the original hardware.
36. Install the disconnect pin on the axle, pin pointing in-board, spacer sleeve inside the mount. Use the 1/2" x 2-1/2" bolt with a washer.  
Tip: Before tightening determine your desired orientation for the retaining pin.
37. Hold the disconnect pin in your desired orientation and torque the bolt to 70lb-ft.
38. Install the new bushings into your sway bar links using plenty of multi-purpose grease.
39. Reinstall your sleeves into the top of the sway bar link bushing using multi-purpose grease.
40. Reinstall your sway bar link onto the sway bar and torque the bolts to 70lb-ft.
41. Apply grease to the disconnect pin and slide the sway bar link onto the disconnect pin.
42. Secure the sway bar link in place using the spring pin.  
**\*NOTE:** The spring pin should take some effort to install. This is done on purpose to keep the link secure and noise free.
43. Reinstall tires and torque lug nuts to spec.
44. Lower vehicle to the ground.
45. With the vehicle back on the ground, pull the spring pins and slip the sway bar links off the disconnect pins.
46. Swing the sway bar links up to the sway bar then swing the sway bar up to its highest position.
47. Flex the suspension and steer fully left and right. Check for possible interference between the tires and sway bar.
48. Reconnect the sway bar links to the axle.
49. For ease of installation and best performance, re-grease the sway bar bushings periodically.



## **JK Installation:**

50. Use a 1/2" drill bit to slightly enlarge the bolt hole in the sway bar. Only a very minor amount of material will be removed.
51. Install the disconnect pin on the axle, pin pointing in-board. Use the 1/2" x 1" bolt with a washer.
52. Install the disconnect pin on the sway bar, pin pointing out-board. Use the 1/2" x 1" bolt with a washer.  
Tip: Before tightening determine your desired orientation for the retaining pin.
53. Hold the disconnect pin in your desired orientation and torque the bolts to 70lb-ft.
54. Install the bushings into the sway bar links using plenty of multi-purpose grease.
55. Apply grease to the disconnect pins and slide the sway bar link onto the disconnect pins.  
**\*NOTE:** Twist the passenger side link onto the lower pin first, then slide it onto the upper pin. It is a snug fit with the factory track bar bracket, but it is achievable.
56. Secure the sway bar link in place using the spring pins.  
**\*NOTE:** The spring pin should take some effort to install. This is done on purpose to keep the link secure and noise free.
57. Reinstall tires and torque lug nuts to spec.
58. Lower vehicle to the ground.
59. With the vehicle back on the ground, pull the spring pins and slip the sway bar links off the disconnect pins.
60. Swing the sway bar up to its highest position.
61. Flex the suspension and steer fully left and right. Check for possible interference between the tires and sway bar.
62. Reconnect the sway bar links to the axle.
63. For ease of installation and best performance, re-grease the sway bar bushings periodically.



## **Final Safety Warning:**

**\*Both sides of the sway bar must be disconnected. Do not operate vehicle with only one side of the sway bar connected.**

Re-torque all fasteners after 100 miles, and frequently inspect all safety critical suspension components. It is the responsibility of the installer to ensure 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.

