



□ 5/16"-18 x 3/4" Button head bolt (1)

Optional Exhaust Kit (Engine Specific):

Optional: 3.6L Exhaust Driver Side Front Pipe 98021 (1) Passenger Front Pipe 98022 (1) Driver Side Mid Pipe 98018 (1) Passenger Mid Pipe 98017 (1) Driver Side Tail Pipe 98016 (1) Passenger Tail Pipe 98015 (1) Flo-Pro Muffler 4015 (2) Rubber Exhaust Hanger, Square (4) Front Exhaust Hanger Rod 98037 (2) Rear Exhaust Hanger Rod 98038 (2) Optional: 3.8L Exhaust Driver Side Front Pipe 98019 (1) Passenger Front Pipe 98020 (1) Driver Side Mid Pipe 98018 (1) Passenger Mid Pipe 98017 (1) Driver Side Tail Pipe 98016 (1) Passenger Tail Pipe 98015 (1) Flo-Pro Muffler 4015 (2) Rubber Exhaust Hanger, Square (4) Front Exhaust Hanger Rod 98037 (2) Rear Exhaust Hanger Rod 98038 (2) Optional Truss Kit (Axle Specific): Optional: JK Dana 44 Truss Top 88298 (1) JK D44 Front Truss Plate 88299 (1) □ JK D44 Rear Truss Plate 88300 (1) **Optional:** Dana 60 Truss Top 88298 (1) D60 Front Truss Plate 88304 (1) D60 Rear Truss Plate 88305 (1) Coil spring pad lower 80179 (2) Coil spring pad tube 80180 (2) Coil spring pad top plate 80181 (2) JK rear bump stop mount 80167 (2) Optional: GM Corp. 14 Bolt Truss Top 88298 (1) □ 14B Front Truss Plate 88301 (1) □ 14B Rear Plate Left 88302 (1) □ 14B Rear Plate Right 88303 (1) Coil spring pad lower 80179 (2) Coil spring pad tube 80180 (2) Coil spring pad top plate 80181 (2) □ JK rear bump stop mount 80167 (2) **Optional:** Sterling 10.5 Truss Top 88298 (1) 10.5 Front Truss Plate 88310 (1) 10.5 Rear Truss Plate 88311 (1) Coil spring pad lower 80179 (2) Coil spring pad tube 80180 (2) Coil spring pad top plate 80181 (2) □ JK rear bump stop mount 80167 (2) **Optional:** Blank Truss Top 88298 (1) Front/Rear Truss Plate 88306 (2) Coil spring pad lower 80179 (2) Coil spring pad tube 80180 (2) Coil spring pad top plate 80181 (2)

□ JK rear bump stop mount 80167 (2)

Coil Spring Mount



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

We recommend this kit 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 components after the first 100 miles of use, and frequently inspect all safety critical components.

Before you begin:

***Ensure that all parts are present and in good condition using above shipping checklist. ***

Welder

measure

- Read and understand all installation instructions.
- Tools required:
 - Floor jacks and jack stands
 - Basic hand tools
 - Torque wrench
 - Angle grinder. Sawzall
 - Angle grinder, Sawzall
 - Anti-seize compound

Notes:

- This kit requires cutting and removing of brackets off the frame, as well as welding in new frame brackets. It is highly recommended that this kit be installed by a professional shop with experience in frame modifications and structural welding.
- This kit requires relocating the fuel tank and vapor emissions system (evap). These modifications are not covered in these instructions. The vehicle owner is responsible for relocating the fuel tank and vapor emissions system (evap).
- Since this kit is extremely high ground clearance, the floor above the transfer case may need to be modified. No cutting was required on any model of JK in our testing. At most, minor bending of the floor pan is required for adequate clearance. This was achieved with a pry bar or placing a block of wood above the transfer case then raising it into place to bend the sheet metal. The needed clearance is, at most, 1/2 inch.

<u>Prepare the parts for installation:</u>

- 1. Adjustable Control Arms: Using the instructions on the last page assemble the flex ends into the threaded male ends for LCAs and UCAs.
- 2. HK #127s for the LCA threaded male ends (larger). HK #168s for the UCAs.
- 3. Use a light coat of anti-seize then thread the male ends into the control arms and adjust to the lengths in the chart as a starting point.

Multipurpose grease

Angle finder (digital is

17/32" drill bit and drill

preferred) and Tape

- 4. Install the clamping hardware into the control arms, do not fully tighten at this time.
- 3.8L (07-11) Automatic & All Manual Transmission: Locate the transmission mounting brackets 80172 and 80173. Bolt the brackets to the crossmember as shown using the 3/8 x 1" bolts in HK #241, button head bolts go inside the bracket, hex bolts go outside the bracket. Note: Match the cut-out section of bracket 80173 to the hole in the crossmember.



- 7. Remove front wheels
- 8. Remove front sway bar links.
- 9. Support the axle with jack stands and remove shocks.
- 10. Disconnect brake line from bracket on frame rail and cap the line.
- 11. Remove the front brake lines and brake hose brackets.
- 12. Remove coil springs.
- 13. Disconnect drag link and front track bar.
- 14. Remove the factory upper and lower control arms.
- 15. Remove front driveshaft.
- 16. Remove front axle.
- 17. Cut the factory exhaust as shown in the pictures then remove the cut pipe.
- Look for the short straight section in the OEM exhaust. When cutting, leave as much of the straight pipe as possible for the new pipes to slip onto.





Control Arm Length (Center to Center)

39-1/2"

41-1/4"

31-7/8"

42-1/2"

3.6L

Front UCA (Upper Control Arm)

Front LCA (Lower Control Arm)

Rear UCA

Rear LCA

- 18. Support the transfer case with a jack stand and remove transmission crossmember. 3.6L Automatic transmissions: Remove the rubber transmission mount and hardware, save for later.
- 19. Cut off the front upper and lower control arm mounts from the frame. Do not cut into the frame. Ensure the frame is completely smooth, clean, and ready for welding.
- 20. Temporarily reposition the wire harness on the passenger side frame, up and over the top side of the frame. On the driver's side, lightly bend brake lines up and out of the way for cutting and welding the transmission crossmember mounts.
- 21. Cut the factory transmission crossmember mounts off of the frame. Do not cut into the frame. Ensure the frame is completely smooth, clean, and ready for welding.
- 22. Crossmember Mounting Brackets: Locate tranmission crossmember mounts and the alignment block 80149.
- 23. Align the crossmember mounting brackets on the frame by inserting the alignment block into the oval shaped hole in the bracket and the matching hole on the frame. The rear edge of the bracket should be parallel to the seam on the frame and to the bottom of the frame.
- 24. Tack weld the brackets in place. Make the tack welds large enough to support the transmission crossmember but small enough to cut off if needed.
- 25. 3.8L Automatic & All Manual Transmissions: Locate the tranmission bracket and install loosely with the factory hardware. Bushings are offset toward the rear of the Jeep. Bolts will be tightened after the crossmember is installed.



26. 3.6L Automatic Transmission Only: Locate the OEM rubber transmission mount and install it onto the new transmission crossmember with the original hardware. Note the orientation of the offset center section (Arrow). Install the transmission bolt plate onto the rubber mount with OEM hardware.



27. Use a jack to raise the transfer case until it contacts the floor. Rubicon: Note the location above the t-case input where the seam of the t-case comes together. This seam is where floor clearance is needed. Lower the drivetrain back down and clearance the floor pan by prying up or hitting with a hammer. Rubicon t-case needs more clearance, Non-Rubicon t-cases need almost no clearancing.



28. Temporarily install the transmission crossmember into the frame mounts with two 1/2 x 6-1/2" bolts. HK #242 Check that the transmission aligns with the transmission mounts on the crossmember. (3.8L & Manual transmission) Tighten the bolts holding the transmission bracket.



Bracket edge parallel to frame seam

- 29. Fully weld the outside edge of the crossmember brackets as well as the two horizontal plug weld holes. Weld 1 to 2 inch stitches on each bracket to minimize heat build up and avoid warping.
- 30. With the welds cool, remove the transmission crossmember and paint the crossmember mounting brackets and any bare sections of the frame.
- 31. **Fuel Lines:** Unclip the fuel line from the bracket on the passenger side of the transmission and bend it rearward approximatly 45°
- 32. Clip the fuel line back into the bracket then locate HK #243.



- 33. Attach the fabric heat sheild to the fuel lines as shown in the picture.
- 34. Remove the clip from the threaded stud on the floor and install the ladder clip with hardware in **HK #243**. Secure the fuel line with a zip tie. *For ease of assembly: Insert the zip tie into the last hole of the ladder clip before tightening the nut.
- 35. Upper Control Arm Bracket: Cut the upper control arm mount off of the passenger side of the front axle. Be sure not to cut into the axle tube.
- 36. Measure 5-7/8" from the flat surface of the spring mount and make a mark on the axle tube. (dotted line in picture)
- 37. Measure 6° difference from the differential cover mounting surface (circle area) to the front of the UCA bracket. Use the witness marks on the UCA bracket to make sure that the angle finder is parallel to the bracket.
- 38. Align the corner of the UCA bracket to the mark then tack weld the new upper control arm mount to the axle. Double check measurements then fully weld to the axle.

- 39. Clean the welded area then paint the axle assembly.
- 40. Transmission Crossmember:
- 41. Install the new transmission crossmember and secure it with 1/2 x 6-1/2" bolts, 1/2 washers, and 1/2 nylock flange nuts. **HK #242**

6°

- 42. Secure the transmission to the crossmember with M10 x 80 bolts from **HK #241** (3.8L Automatic or Manual trans) or OEM bolts (3.6L Auto trans).
- 43. Lower the transmission down onto the crossmember.
- 44. Install the new front upper contol arm using M14 x 100 bolts **HK #242.** The threaded male end installs on the axle. Do not tighten bolts at this time.
- 45. Install the new lower contol arms using the factory hardware at the axle, M14 x 110 bolts at the crossmember **HK #242.** Do not tighten bolts at this time. The rubber bushing goes to the axle and the flex end at the frame.
- 46. Reinstall coil springs and shocks.
- 47. Reinstall front track bar and sway bar links.
- 48. Reconnect drag link.
- 49. Reconnect brake line to brackets on frame rail and bleed brakes.
- 50. Reposition jack stands under the front axle.
- 51. <u>Rear 4-Link Crossmember:</u> Locate the factory crossmember in the frame that needs to be
- removed. This crossmember is reward of the seam in the frame where the center section joins the rear section of frame. See picture.52. Temporarily reposition the wire harness on the passenger side frame, up and over the top side of the frame. On the driver's side, lightly bend brake lines up and out of the way before cutting out the crossmember.
- 53. Cut this crossmember out and grind the frame smooth.
- 54. Locate the rear 4-link crossmember.
- 55. Slide the 4-link crossmember up between the center section frame rails then slide it rearward until it stops against the seam where the center section joins the rear section of frame.
- 56. Mark the areas where the crossmember will be welded to the frame.
- 57. Remove the crossmember and prepare the marked areas for welding. Remove all paint and rust from the frame.
- Reinstall the crossmember into the frame. Use a jack to hold it.
 **Tip: paint the top of the crossmember before reinstalling.
- 59. Check that the rear 4-link crossmember is 25-3/4" from the transmission crossmember on both sides. To ensure proper fitment, install the flat belly skid plate temporarily before welding the rear crossmember in place.



5-7/8" to bracket corner

- 60. Flat Belly Skid Plate: Locate the flat belly skid plate and HK #271
- 61. Bolt the skid plate to the 4-link crossmember then to the transmission crossmember. Leave the bolts loose for now. Make sure the skid plate is centered left-to-right; adjust the transmission crossmember left-to-right if necessary. Ensure the 4-link crossmember is square to the transmission crossmember.
- 62. Tack weld the 4-link crossmember into the frame in several places.
- 63. Using the flat belly skid plate as a template, mark the frame where the mounting holes need to be drilled to mount the skid plate to the frame.
- 64. Lower the skid plate and drill the mounting holes with a 17/32" drill bit and install the rivet nuts, **HK #244** using the rivet nut install tool, **HK #173**.
- 65. Torque the 6 transmission crossmember mounting bolts to 90 lb-ft.
- 66. Torque the 4 transmission adapter bracket bolts to 40 lb-ft.
- 67. Doulble check skid plate fitment, then fully weld the 4-link crossmember into the frame.
- 68. Prep the 4-link crossmember and welded areas for paint then apply several coats of paint.

Rear Axle Installation:

- 69. JK D44 Rear: Support the frame with jack stands, allow the rear axle to droop as much as possible and support it with jack stands. Remove the shocks, springs, sway bar, control arms, and track bar.
- 70. Remove the track bar bracket, upper and lower control arm brackets. Cut the factory track bar mount off the frame. Keep the bump stop pads and spring mounts. All other brackets should be removed from the axle assembly. The front portion of the bump stop pads (parking brake mount) needs to be trimmed for LCA bracket clearance. The parking brake cannot be used.
- 71. <u>All Other Axles:</u> Remove all brackets from the axle tubes, remove all surface rust and paint, and prepare the surface for welding. Mounting locations for new coil spring mounts, bumpstop mounts, and an axle specific truss will be shown in the diagrams below.
- 72. <u>Find the axle centerline</u>. All bracket locations are based off of the axle centerline. To find the axle centerline measure the axle total width from wheel mounting surface to wheel mounting surface and divide in half. Double check by measuring from the left side and from the right side to ensure accuracy.



(WHEEL MOUNTING SURFACE TO WHEEL MOUNTING SURFACE)

- 73. Tack together the rear truss assembly and set it on the axle.
- 74. Position the truss rear surface parallel to the diff cover mounting surface and tack into place.
- 75. Locate LCA mounting brackets 88286, 88287, 88288. Tack them together leaving a minimum of 2-5/8" between the vertical plates. Be careful to build a left and a right oriented bracket, they should be mirror images of eachother.
- 76. Measure 23-1/8" from the axle centerline and make a vertical mark on the axle tube.
- 77. Position the top, inside corner of the LCA mount on the mark, set the bottom of the bracket to 12.5° from the top of the truss, and tack into place. Reapeat for the opposite LCA bracket.



78. Locate the shock mount 88290, and tab 88291. Insert the tab into the bracket then tack them together leaving a minimum of 1-1/2" between the tab and bracket. **Tip: use a shock bushing sleeve and bolt, installed loosely, to set the distance.



- 79. Measure 21-7/8" from the axle centerline and make a vertical mark on the axle tube.
- 80. Position the edge of the shock bracket on the mark, set the angle of the bracket to 48.3° from the top of the truss, and tack into place.
- 81. Axle Swap Builders: Set the bump stop pad and spring mount parallel to the top of the truss and set at the distances shown in the diagram.
- 82. Double check bracket locations and angles then fully weld each bracket. Weld in short sections, moving frequently to minimize warping.
- 83. Remove weld spatter, pay special attention to bolt holes and mounting surfaces.
- 84. Prepare all welded areas and brackets for paint and apply several coats to prevent rust.
- 85. Install the new upper contol arms using M14 x 100 bolts HK #269. The threaded male end installs on the axle. Do not tighten bolts at this time.
- 86. Install the UCA clamping hardware loosely into the tabs on the UCAs HK #186. Do not tighten bolts at this time.
- 87. Install the new lower contol arms using M14 x 110 bolts **HK #269**. The rubber bushing goes to the axle and the flex end at the frame. Do not tighten bolts at this time.
- 88. Reinstall coil springs.
- 89. Reinstall shocks.
- 90. Reposition jack stands under the front and rear axles.
- 91. Exhaust: Locate the front two exhaust pipes. (shortest)
- 92. Position the front two pipes over the transmission crossmember and slide them onto the original exhaust.

*On the 3.8L loosen the the exhaust connection upstream of the catylitic converter (cat) and reposition the cat pipes to align with exhaust. ARROW



93. Mount the rubber exhaust hanger on the frame behind the transmission crossmember then slip an exhaust hanger rod into the mount.94. Slide the mufflers onto the front pipes then route the mid pipes through the 4-link crossmember and into the mufflers.

95. Rotate and adjust the exhaust pipes for maximum clearance around the drivetrain, crossmember, and frame. The mid pipes should go straight through the 4-link crossmember.



- 96. Double check clearances then tack weld the front pipes to the cat pipes. Then tack weld the mufflers to the front pipes.
- 97. With the mid pipes going straight through the 4-link crossmember, swing the exhaust hanger rod up to the front pipes and tack into place.



- 98. Slip the tail pipes onto the mid pipes.
- 99. Mount a rubber exhaust hanger on the frame above the last bend of the tail pipe then slip an exhaust hanger rod into the mount.



100. Rotate the tail pipe until the end section is parallel to the frame then tack the hanger rod into place.

101. Rotate and adjust the mid pipes for maximum clearance around the control arms and frame and tack them into place.



- 102. Double check all exhaust pipes for proper clearance between the frame, crossmembers, suspension, and the body, then fully weld into place. **It may be helpful to lower the transmission crossmember to get more room to weld.
- 103. Start the engine and check each connection for exhaust leaks. Be sure all pipe connections are fully sealed with weld.
- 104. Reconnect brake line to brackets on frame rail and bleed brakes.

Final Torque and Adjustments:

- 105. With the Jeep on jack stands under the front and rear axles, temporarily install a tire on one side.
- 106. Verify that each axle is centered as desired front to rear. Check caster before adjusting.
- 107. 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.
- 108. Adjust control arms to the desired position.
- 109. To adjust axle front to rear, adjust upper and lower control arms by the same amount. 12 turns equal one inch.
- 110. To adjust only caster or pinion angle, adjust only the upper control arms (3 turns equals roughly 2 degrees).
- 111. To adjust both, adjust both at the same time.
- 112. ***Caster angle/Pinion angle may need to be adjusted after a test drive to eliminate driveline vibrations. ***
- 113. Check front axle position left to right. Adjust track bar length as needed.
- 114. With the vehicle weight on the suspension, tighten the upper and lower control arm bolts to 130 lb-ft.
- 115. Torque the upper and 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.
- 116. Install tires and wheels. Torque lug nuts to spec. (Typical specification is 85-115 ft-lbs., depending on your wheels)
- 117. Recheck all fasteners and torque any remaining loose nuts or bolts to spec.





- 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. Install the flat belly skid plate using 3/8 x 1" bolts, torque to 30 lb-ft.

| ster angle. See chart for | | |
|----------------------------------|--------|--|
| Caster Angle (Starting point) | | |
| Lift Height | Caster | |
| 2.5" | 7° | |
| 3.5" | 6.5° | |
| 4" or more | 5⁰ | |



Shown with suspension at ride height

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 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.





Parts Checklist:

- □ Iron Rock Off Road Logo Decal 10001 (1)
- □ Ironrockoffroad.com decal (1)
- Skid Plate 80123 (1)
- Skid Plate Access Panel 80126 (1)
- Support Arm, Driver 80129 (1)
- □ Support Arm, Passenger 80132 (1)
- #248 Engine Skid Hardware (1)
 - □ 3/8"-16 x 3/4" Button head bolt, S/S (2)
 - □ 3/8"-16 x 1" Serrated flange bolt (2)
 - 3/8" USS washer (4)
 - M10-1.5 x 40 hex bolt class 10.9 (2)
 - M10-1.5 nylock flange nut (2)
 - □ 1/2"-13 x 1-1/2" hex bolt, gr8 (2)
 - □ 1/2" USS washer (4)
 - □ 1/2"-13 nylock nuts (2)
 - □ 5/16"-18 x 1" Taptite flange bolt (1)
 - □ 5/16"-18 x 3/4" Button head bolt (1)

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

We recommend this system be installed by a qualified professional. Knowledge of component function is necessary for safe installation and post installation inspections. Be sure to re-torque all components after the first 100 miles of use, and frequently inspect all safety critical components.

<u>Before you begin:</u>

- ***Ensure that all parts are present and in good condition using above shipping checklist. ***
- Read and understand all installation instructions.
- Tools required:
 - Floor jack and jack stands
 - Basic hand tools
 - Torque wrench

<u>Note:</u> The JK Rock-Link Front Long Arm System is required prior to installation of this engine skid plate system.

Prepare the parts for installation:

 Using the provided 5/16 thread forming hex bolt, thread the bolt hole for the skid plate access panel. *An extra 5/16 button head bolt is provided if you prefer a lower-profile fastener.

Installation:

- 2. Lift front of vehicle and support with jack stands under frame rails.
- 3. Allow the front axle to droop away from the chassis as much as possible to make install easier.
- 4. Locate the skid plate support arms and HK #248.
- 5. Install the driver side support arm into the rear-most hole on the engine mount bracket on the frame. Use a 1/2" bolt, washer and nut. Do not tighten the hardware at this time.











6. Install the passenger's side support arm into the forward-most hole on the engine mount bracket on the frame. Use a 1/2" bolt, washer and nut. Do not tighten the hardware at this time.



Install the engine skid plate using 3/8" bolts at the crossmember and M10 bolts, washers, and nylock nuts at the support arms.
 With all the bolts installed, tighten the 1/2" bolts at the frame to 60 lb-ft., tighten the M10 bolts to 60lb-ft., tighten the 3/8" bolts to 30 lb-ft.



- 9. Install the access panel in the skid plate by inserting the tabs up, into the opening then hinging the panel up to the skid plate.
- 10. Secure the access panel with a $5/16 \times 3/4$ " serrated flange bolt.









I-877-919-JEEP www.ironrockoffroad.com Fits All Iron Rock Off Road Long Arm Systems, WJ A-Arms, and Build Your Own Flex End Assemblies.

Before you begin:

- Read and understand installation instructions.
- o 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:
 - o 5/32" Allen head socket
 - 3/8" open end wrench
 - o 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° ¼"-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.



Reference Only Complete joint shown fully assembled without housing





Figure 1







Before you begin:

- o Read and understand installation instructions.
- o 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:
 - o 9/64" Allen head socket
 - 3/8" open end wrench
 - o Inch-lb. torque wrench
 - o Multipurpose grease/grease gun

<u> Parts Checklist:</u>

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)
- □ ¼"-28 90° grease zerk fitting (1)
- □ ¼-28 straight grease zerk fitting (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
- 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 65 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.
- - *Reference Only* Complete joint shown fully assembled without housing

13. Re-torque bolts to 65 in-lbs.





