IRON ROCK OFF ROAD

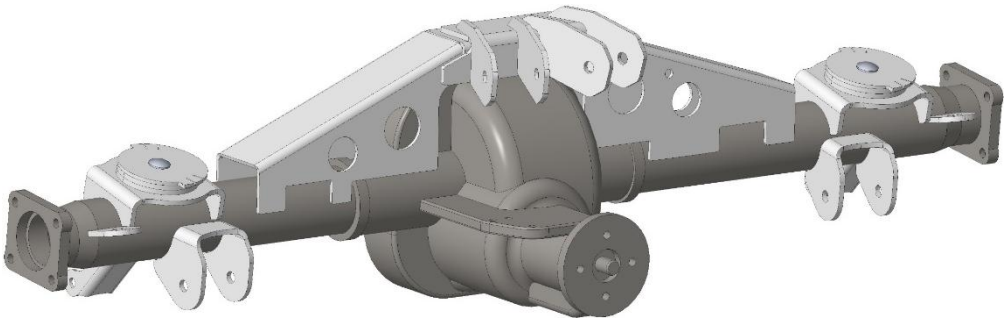
ZJ Rear Axle Swap Upgrade Kit for 4 Link Lift Kits Instructions

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

Parts Checklist:

- ❑ Instructions
- ❑ Iron Rock Off Road Decal 10001 (1)
  - ❑ Spring pad 99061 (2)
  - ❑ Lower control arm mount, driver's side 85006 (1)
  - ❑ Lower control arm mount, passenger's side 85005 (1)
  - ❑ Shock mount 92095 (2)
  - ❑ Sway bar link mount 99058 (2)
  - ❑ Lower coil spring retainer 99054 (4)
  - ❑ Upper coil spring retainer 99059 (2)

(4 Link Truss Sold Separately)



#191 ZJ 4 Link Axle Swap Upgrade Hardware (1)

- ❑ M12 x 60 hex bolt (2)
- ❑ 1/2 X 1 1/2 Carriage Bolt (2)
- ❑ M12 nylock hex nut, cl 10.9 (2)
- ❑ 1/2 gr8 hex nut (2)
- ❑ 7/16 F436 washer (4)

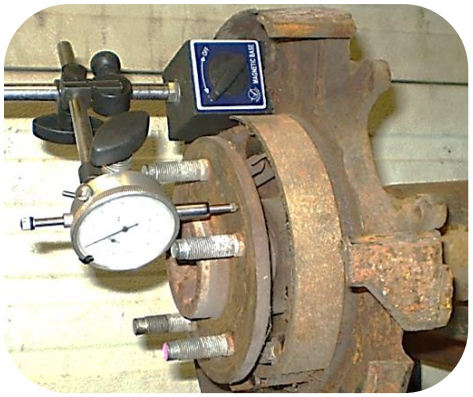
Before you begin:

- ❑ ***Ensure that all parts are present and in good condition using above shipping checklist. ***
- ❑ Read and understand all installation instructions.
- ❑ This kit requires welding and advanced fabrication skills. If this project is beyond your capabilities, check with a 4wd shop, welding shop, or other fabrication shop for assistance.
- ❑ Tools required:
  - ❑ Oxy/Acetylene torch, plasma cutter or angle grinder with a cut off wheel
  - ❑ Welder capable of welding 1/4" plate
  - ❑ Angle grinder with wire wheel
  - ❑ Angle finder (slope gauge)
  - ❑ Dial indicator with magnetic base
  - ❑ Tape measure
  - ❑ Basic hand tools
- ❑ If you have any questions before, during, or after installation contact Iron Rock Off Road

Find your donor axle:

These brackets are designed to work with **3" to 3.5" axle tube diameter like the Ford 8.8, Dana 60, JK Dana 44, GM Corp. 14 Bolt, Ford 9", and others with a similar diameter.

1. Be sure to get the correct gear ratio. Avoid excessive rust, excessive oil leaks, and rolled over donor vehicles. Be sure to get brake calipers, brake lines, and companion flange and bolts for pinion yoke. www.car-part.com is a great place to look for a donor axle assembly.
2. Recommended axle to use: Ford 8.8 rear axle assembly from 1995 -01 Ford Explorer with disc brakes. Older axles will work but will not have disc brakes, very old or car axles may have undesirable smaller axle shafts. Many Ford 8.8s have limited slip differentials.
3. Check housing and tubes for straightness: Using an angle finder, with the pinion horizontal, check the slope along the entire length of each tube. Any variance of 1/2 degree or more must be straightened or the housing replaced. Be sure to remove any rust or dirt from under the angle finder. Perform the same check with the pinion vertical.
4. Check for mechanical issues: Remove differential cover and inspect all internal components for rust, metal shavings, excessive play, wear pattern, etc….
5. Check for bent axle shafts: Using a dial indicator, check wheel mounting surface of each axle shaft for runout. Runout must be less than .008". Do not skip this step, if you do not have a dial indicator, an unwarped brake rotor bolted tightly to the wheel mounting surface can be used. Spin the axle shaft and look very closely, if you see any runout replace the axle shaft and check it again. A slightly bent axle shaft can cause a difficult to diagnose driveline vibration.



Installation:

Prepare the axle assembly:

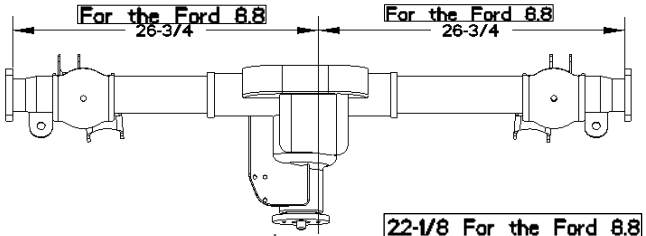
6. Cut off any brackets attached to the axle tubes. A plasma cutter, oxy/acetylene torch, or angle grinder with a cut off wheel can be used. Be careful not to cut into the axle tubes.
7. Using an angle grinder, remove any remaining bracketry. Be careful not to grind away any axle tube material.

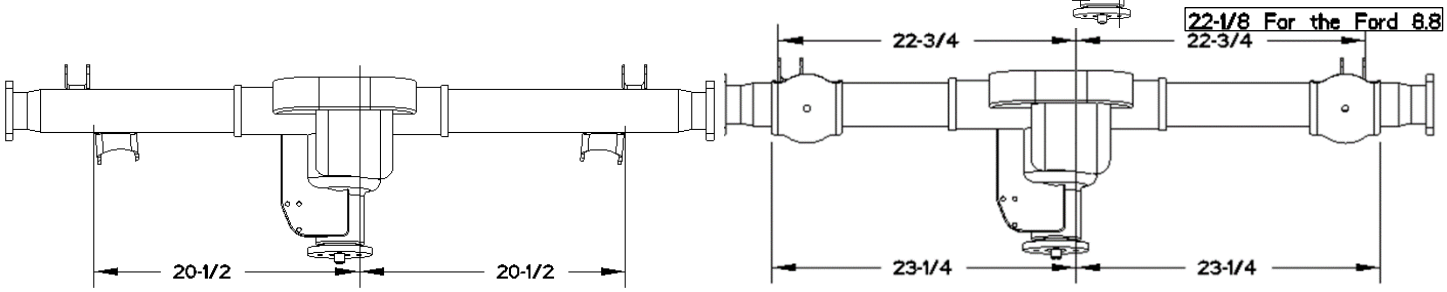
Weld tubes to housing:

8. The tubes should be welded to the housing for added strength. Be sure your welding material is suitable for welding to cast iron.
9. Thoroughly clean the surfaces where the axle tubes meet the differential housing. Failure to remove all contaminants will result in weld porosity.
10. Preheat the differential housing where it meets one axle tube to 425 degrees. Heat the entire area slowly and uniformly. Weld the tube to the axle housing. Weld a 1.5" long bead, then move to the opposite side of the same tube and repeat. Continue until weld is complete. Repeat for the other axle tube. Allow the assembly to cool as slowly as possible.
11. Remove all rust and debris from entire axle assembly as desired. All surfaces to be welded must be free of rust or contaminants.
12. Recheck housing and tubes for straightness to verify the axle has not warped.

Measure:

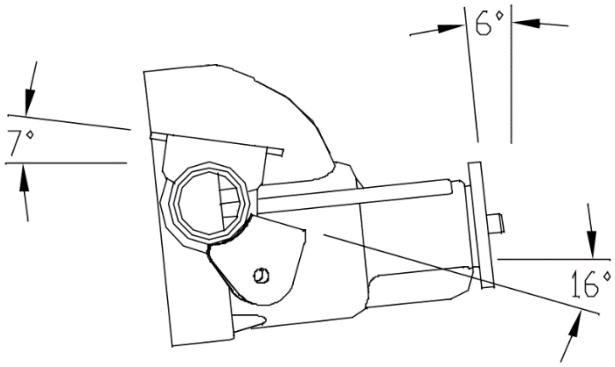
13. Determine the center of your axle. Measure from the flanges, wheel mounting surfaces, or brake rotors (or drums). Mark the center.
14. Mark the location of each bracket on the axle. See drawings.
15. Support the axle assembly on jack stands. Set the pinion angle to exactly 6 degrees up. If you wish to adjust your pinion angle up or down compared to a stock axle, do so at this time.





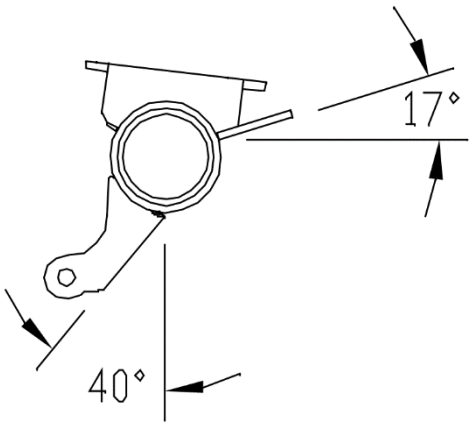
Install brackets:

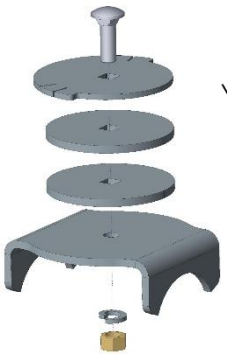
16. Tack weld lower control arm mounts to the axle with the top surface at a 16 degree down angle. Note left and right bracket. See drawing.
    ******Tip: When tack welding, ensure your tack welds are strong enough for a test fit, but easy to cut apart if necessary.
17. Tack weld upper control arm mounts to axle with rear surface exactly vertical.
18. Tack weld spring pads to axle with front side down at a 7 degree angle. 7 degree angle is OEM, adjust if desired.
19. Install sway bar link mount. Bottom surface of sway bar link mount is exactly flush to bottom edge of spring pad.
20. Tack weld shock mounts in place. 40 degree angle is similar to OEM, adjust if desired. See Drawing. Note: For the Ford 8.8 only, the driver's side shock mount is moved inward compared to passenger side. This is done to clear the brake caliper under suspension flex.
21. Tack weld the track bar mount to the axle tube and upper control arm mount.



Test fit:

22. Test fit axle assembly into vehicle: Loosely install lower and upper control arms.
23. Install the springs (see spring retainer diagram) and put the weight of the vehicle onto the axle assembly. Note: The front of the vehicle must also be resting on the tires or jack stands under the axle so no weight is transferred onto or off of the rear axle.
24. Verify that weight applied to the rear suspension exactly matches typical driving conditions.
25. Verify pinion angle is correct.
26. Verify spring pad angle is correct. Adjustable spring pads are available if springs need to be pushed forward or back on the axle.
27. Verify shock mounting locations are correct.
28. Verify track bar mount location is correct.
29. Make adjustments as needed.





Finish weld:

30. Remove axle assembly from the vehicle.
31. Fully weld each bracket to the axle tubes.
    ***Tip: If desired, the spring pads do not need to be fully welded onto the axle tubes. About 1.5" of weld on each corner is sufficient. This allows you to easily change the spring pad angle if needed for suspension upgrades or installation of a transfer case slip yoke eliminator.
    ***Tip: to avoid warpage, avoid excessive heat buildup. Weld in short time increments in one area then move to another part of the axle. Allow time to cool between welds in the same spot.
32. Recheck housing and tubes for straightness to verify the axle has not warped.
33. Prep and paint axle assembly.
34. Run brake lines.
35. Install into Jeep.