

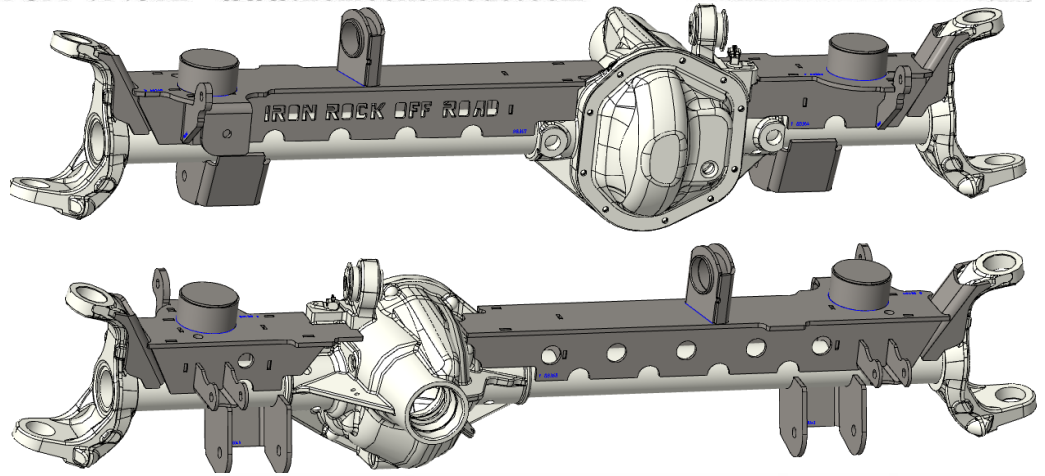
IRON ROCK OFF ROAD

**WJ – JK D44 Swap
COMPLETE AXLE Kit**

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

Parts List:

- Iron Rock Off Road Decal 10001 (1)
- Upper C Gusset 88149 (2)
- Front Left Plate 88364 (1)
- Rear Left Plate 88365 (1)
- Front Right Plate IRO 88367 (1)
- Top Left Plate, Spring Mount 88366 (1)
- Rear Right Plate, Long 88368 (1)
- Top Right Plate, Long 88369 (1)
- Track Bar Inner Bracket 88336(1)
- Inner Gusset Plate 88341 (4)
- Shock Mount 88342 (2)
- Left Sway Bar Link Mount 88345 (1)
- Right Sway Bar Link Mount 88346 (1)
- WJ Coil Spring Mount, Tube 92243 (2)
- WJ Coil Spring Mount, Cap 92054 (2)



ABS Wiring Kit 14640

- Wheel Speed Sensor Connector HP3945 (2)



WJ Front Axle Swap Brake Hose Kit 14595

#256 – WJ Front Axle Swap Brake Hose Kit

- Front brake hose LEFT 88377 (1)
- Front brake hose RIGHT 88378 (1)
- 5/16" Cushioned clamp (2)
- 1/4 x 1" Self-drilling screw (2)
- Brake Hose Clip BQ3052 (2)
- Brake Hose Bracket 88275 (2)
- #10 x 1 Self-drilling screw (2)
- Copper washer, M10 (4)



WJ Swap Drag Link Kit 14599

- Drag Link 95140 (1)
- Drag Link Spherical rod end XMR-12 (1)
- Drag Link Spherical rod end XMR 8-12 (1)
- Double adjuster 95017 (1)

#259 - Drag Link Hardware (1)

- 5/8-11 x 3" Tapered Bolt 80042 (1)
- 1/2-20 x 3-1/4" Drilled Hex Bolt 95167 (1)
- 9/16 F436 washer (1)
- 5/8-11 castle nut (1)
- 1/2-20 castle nut (1)
- Steering Clamp 95018 (3)
- M12 x 60mm hex bolt cl 10.9 (3)
- M12 nylock nut cl 10.9 (3)
- High Misalignment washer 95015 (2)
- High Misalignment washer 95006 (2)
- Spacer Sleeve 95123 (1)
- Pitman arm tapered sleeve 1/2" ID, 95043 (1)
- Pitman arm tapered sleeve 5/8" ID, 80039 (1)
- 5/8-11 x 3-3/4" drilled hex bolt, gr8 80041 (1)
- 3/8-16 x 1-1/4" hex bolt, gr8 (1)
- 3/8-16 nylock nut, gr8 (1)
- 3/8 Mil spec washer 95229A480 (1)
- 1/8" x 1-1/2" cotter pin (2)
- 7/16" F436 washer (4)



WJ Steering Stabilizer Kit 12564

- Steering Stabilizer (2962) (1)

#71 – WJ Steering Stabilizer Hardware (1)

- Steering Clamp 95018 (2)
- 7/16 USS washer (4)
- M12 x 90 cl10.9 hex bolt (2)
- M12 cl10.9 hex nut (2)

Lower Control Arm Mounts: (Choose width)

- WJ Width 88343 (2)
- Standard (2-5/8") Width 88344 (2)

WJ Offset Bump Stops: Front (choose height) 14636

- 2.25" 92332 (2)
- 3.25" 92338 (2)
- 4.25" 92340 (2)

#257 – WJ Offset Bump Stop Hardware

- M8 x 30 hex bolt, cl 8.8 (4)
- M8 hex nut, (4)
- 1/4" USS washer (4)

Optional Parts:

- Optional: Rock-Link UCA
 - WJ Axle Swap UCA 92335 (1)
- Optional: UCA Mount, Passenger 88374 (1)
 - UCA Bracket 88375 (2), Bushing Tube 92025 (1)
- Optional: D44 Locker Wiring Kit 10021771 (1)

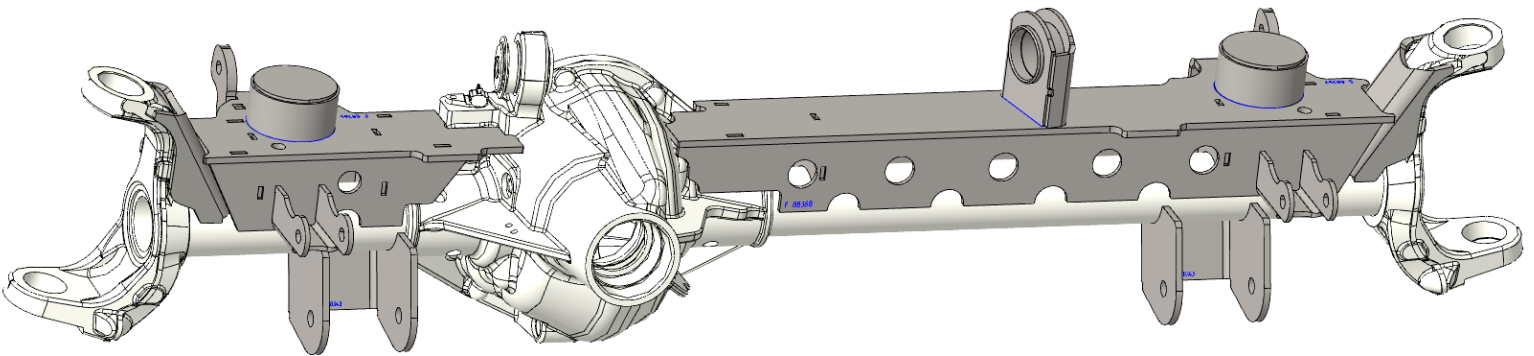
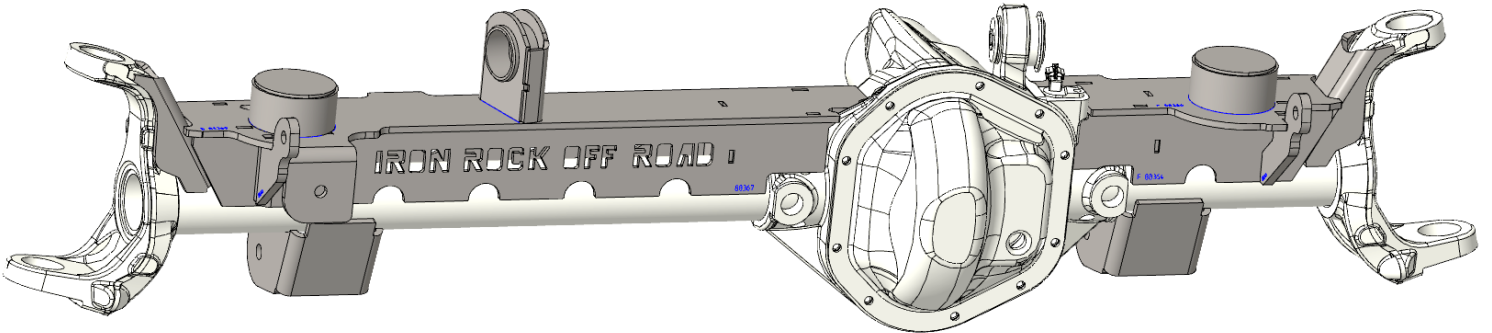


Safety Warning: *Important! Read Before Installation. *****

We recommend that this kit be installed by a qualified professional. Knowledge of suspension component function is necessary for safe installation and post installation inspections. We recommend that all welds be performed by a certified welder. A weld failure may result in serious injury or death, in addition to severe vehicle damage. Be sure to re-torque all suspension components after the first 100 miles of use, and frequently inspect all safety critical suspension components.

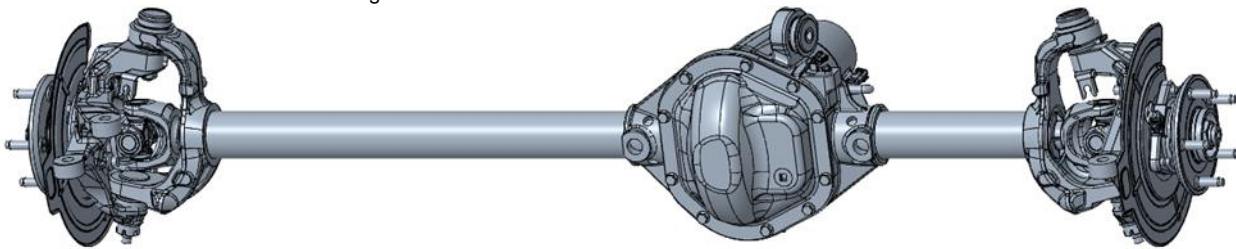
Before you begin:

- Fitment requirements:
 - For optimal performance these modifications have been made compared to OEM parts: Make any necessary accommodations.
 - Bump stop pads raised 1-1/4"
 - Sway bar link mounts moved out 1/2"
 - Shock mounts moved up 1/2" per side
 - Coil spring pads moved back 1/2" (to accommodate pushing the axle forward)
- If using products from other manufacturers, verify fitment before installation.**
- This product has not been tested at OEM suspension height and likely will not work. IRO recommends 4" lift or more.
- Minimum 4" of lift recommended for adequate suspension up-travel; 3" of lift is possible but ride quality will be compromised due to limited up-travel.
- Not compatible with Iron Rock Off Road Iron-Y long arm suspension.
- It is recommended to replace axle seals and ball joints after installation due to welding heat.
- Read all safety warnings and understand installation instructions.
- Check all 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 before scheduling installation.
- Be sure you have the following tools and supplies:
 - Basic hand tools
 - 4-1/2" Angle grinder with grinding, sanding, and cut-off wheels.
 - Sawzall
 - Welder
 - Torque wrench
 - Propane or MAP gas torch



Prepare the axle housing:

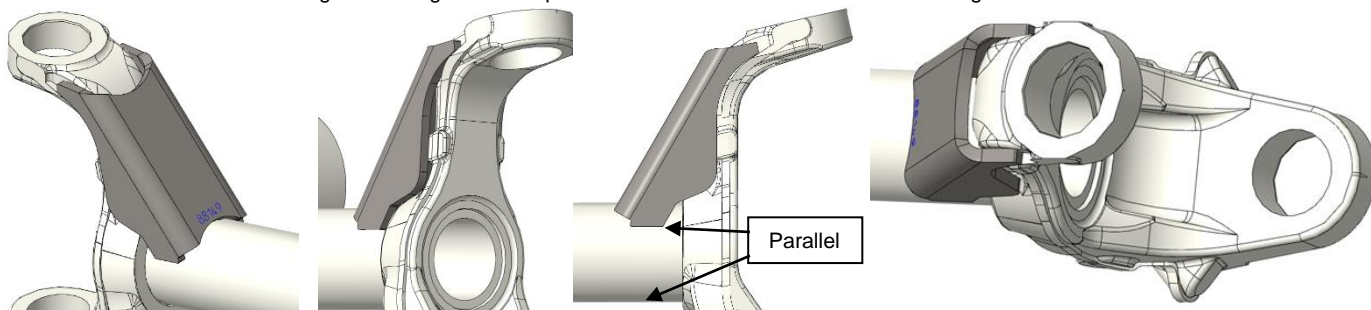
1. Remove the axle shafts and plug the axle tubes with rags to prevent metal shavings from entering into the axle housing.
2. Cut off all brackets from the axle housing. Be careful not to cut into the tubes at all.



3. Clean off any paint or any remaining bracket residue. A 4-1/2" angle grinder with a flap wheel works well for this.
4. Check the axle 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 1/4 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.
5. Clean off any paint or rust from the axle Cs. A wire wheel on a 4-1/2" angle grinder works well for this.

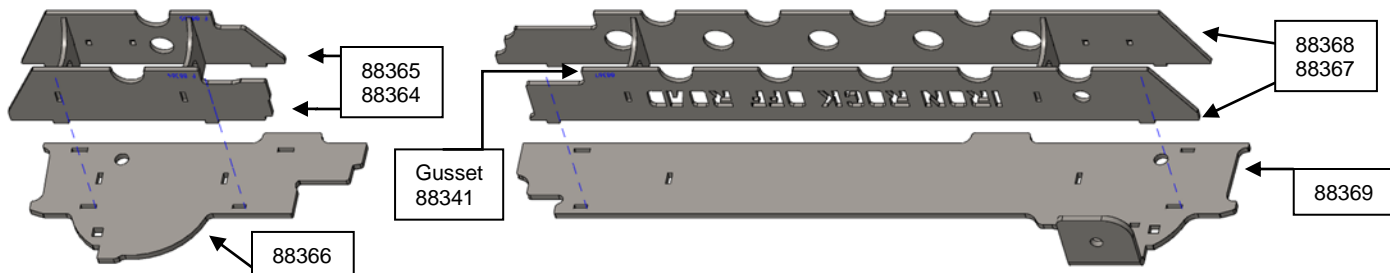
Truss Installation:

6. **C gussets:** Locate the axle C gussets, 88149. Test fit the C gussets onto the upper portion of the Cs. The bottom edge to the C gusset should be parallel to the axle tube. Some minor grinding inside the tips may be required to make a nice, tight fit.
7. Using the C gussets as a guide, mark any areas around the edges that might need to be cleaned. Remove the gussets, clean, and reinstall.
8. Double check that the bottom edge of the C gussets are parallel to the axle tube then tack weld the C gussets.

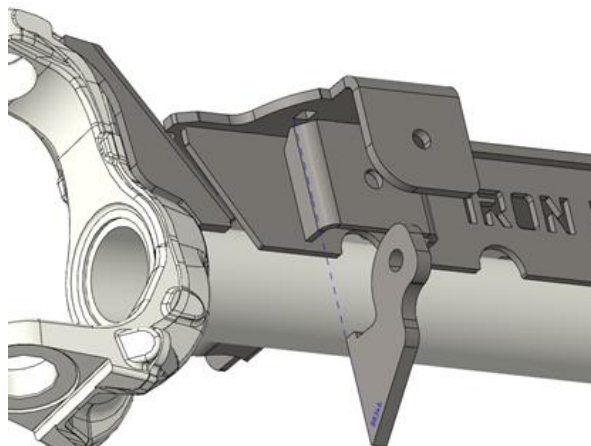
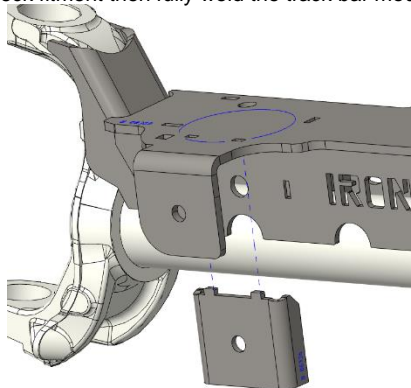


9. **Truss Assembly:** Locate the plates, 88364, 88365, 88366, 88367, 88368, 88369, and 88341.
10. Place two 88341 gussets between plates 88364 & 88365 then insert into 88366. Use a few small tack welds to hold the pieces together.
11. Place two 88341 gussets between plates 88367 & 88368 then insert into 88369. Use a few small tack welds to hold the pieces together.

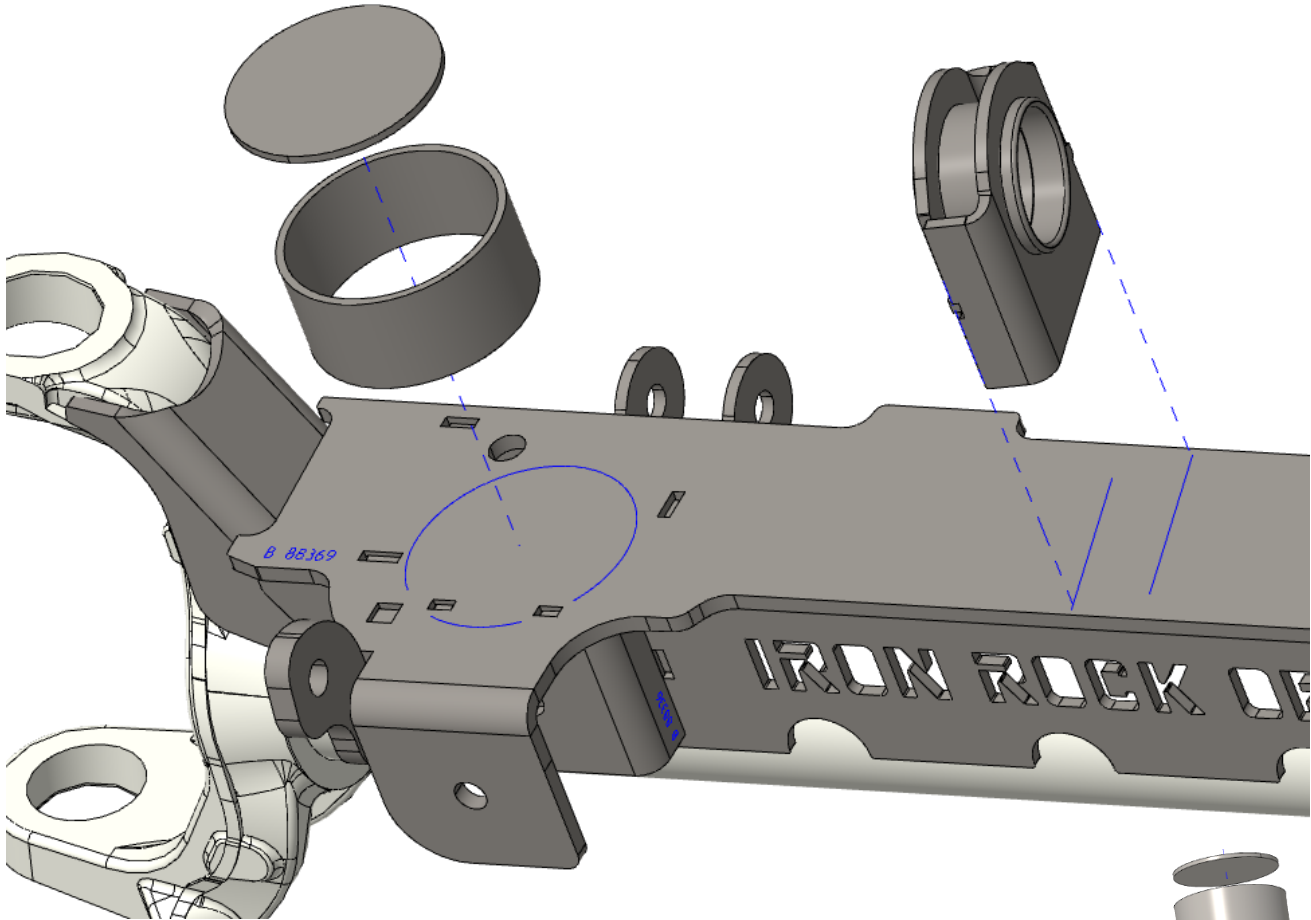
****Ensure that all joints are tight and that your truss assembly matches the picture below before tack welding.**



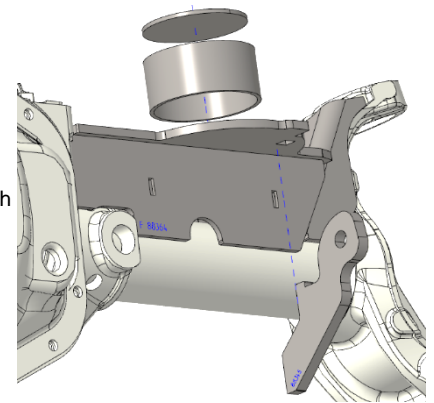
12. Set the two truss pieces onto the axle housing. Check that all the surfaces of the axle that meet up with the truss are clean and ready to weld.
13. Using the truss pieces as a guide, mark the areas of the differential that need to be cleaned. Remove the truss, clean the axle, and reinstall.
14. Tack weld the truss to the axle assembly at several locations along the truss. Some minor clamping might be necessary to achieve a tight weld joint.
15. Fully weld the truss to the axle tubes. Weld in short alternating 2" segments on opposite sides of the axle assembly. Allow a short cooling off period between welds. Ensure good weld penetration but try to minimize the amount of heat applied and the heat affected zone. Preheat the cast differential housing before welding and wrap with a welding blanket to avoid cracking after welding.
****When welding the truss assembly be sure to leave clearance near locating slots for the rest of the components to be easily assembled onto the truss.**
16. Cover with welding blanket to ensure a slow, even cooling process.
17. **Track Bar Mount:** Locate 88336 and 88346. Insert 88336 up, into the top plate then add a small tack to hold it in place.
18. Add the sway bar link mount 88346 beside 88336. Use a small tack weld to hold it in place.
19. Check that the track bar bolt holes are aligned and verify the width is 1-5/8" inside the track bar mount. ****Tip:** Install your track bar bushing sleeve in the mount before welding to guarantee proper fitment.
20. Double check fitment then fully weld the track bar mount to the truss.



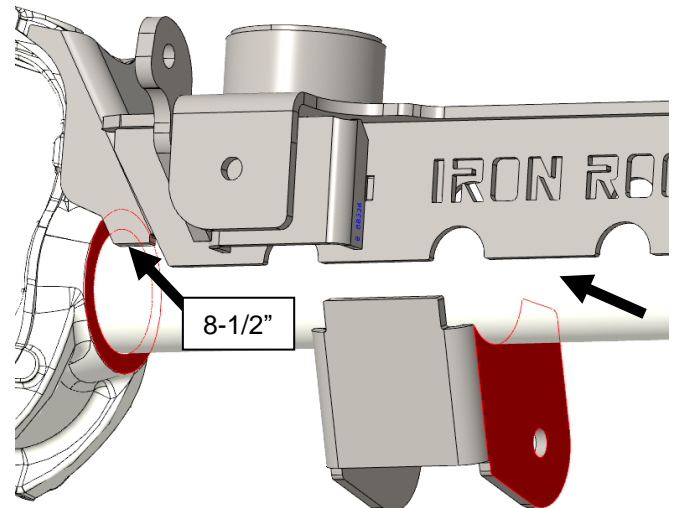
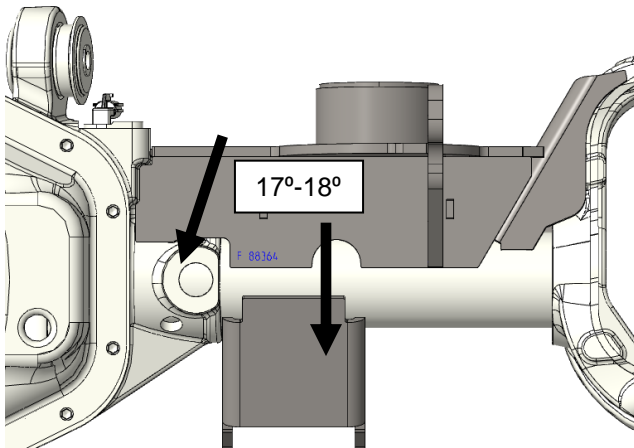
21. **Spring Mount:** Locate tube 99243 and cap 92054. Align the tube 99243 to the etched circle on the top plate of the truss and tack into place.
22. Center the cap on top of the tube and tack it into place.
23. Repeat this process for the other spring mount.
24. Double check placement then fully weld the spring mount to the truss.



25. **Upper Control Arm Mount:** Locate the assembled upper control arm mount 88374.
26. Align the long UCA mount to the etched lines on the top plate of the truss, tack in place. The passenger UCA mount does not have a specific mounting orientation, it can mount either way.
27. Double check fitment then fully weld the upper control arm mount to the truss.
28. **Sway Bar Mount:** Locate 88345. Insert 88345 onto the front of the driver side spring mount and secure it with a small tack weld.
29. Double check fitment then fully weld the sway bar mount.
30. **Shock Mounts:** Locate the two shock mounts 88342. Insert 88342 tabs into the slots on the back side of the truss. The open side of the bracket faces up, secure them with a small tack weld.
31. Double check fitment then fully weld the shock mounts.
32. **Lower Control Arm Mounts:** Locate 88343 or 88344 and an angle finder. With the driver side lower control arm mount touching the differential, set the angle between 17°-18°. Measure the angle from the front face of the bracket to the differential cover mounting surface (arrows). Tack in place.
33. Measure 8-1/2" from the passenger axle C to the outside surface of the passenger side lower control arm bracket. See picture below.
34. Set the angle of the passenger bracket between 17°-18°. Measure the angle from the front face of the bracket to the differential cover mounting surface.
35. Tack the bracket into place then recheck measurements for both brackets and fully weld them to the axle.

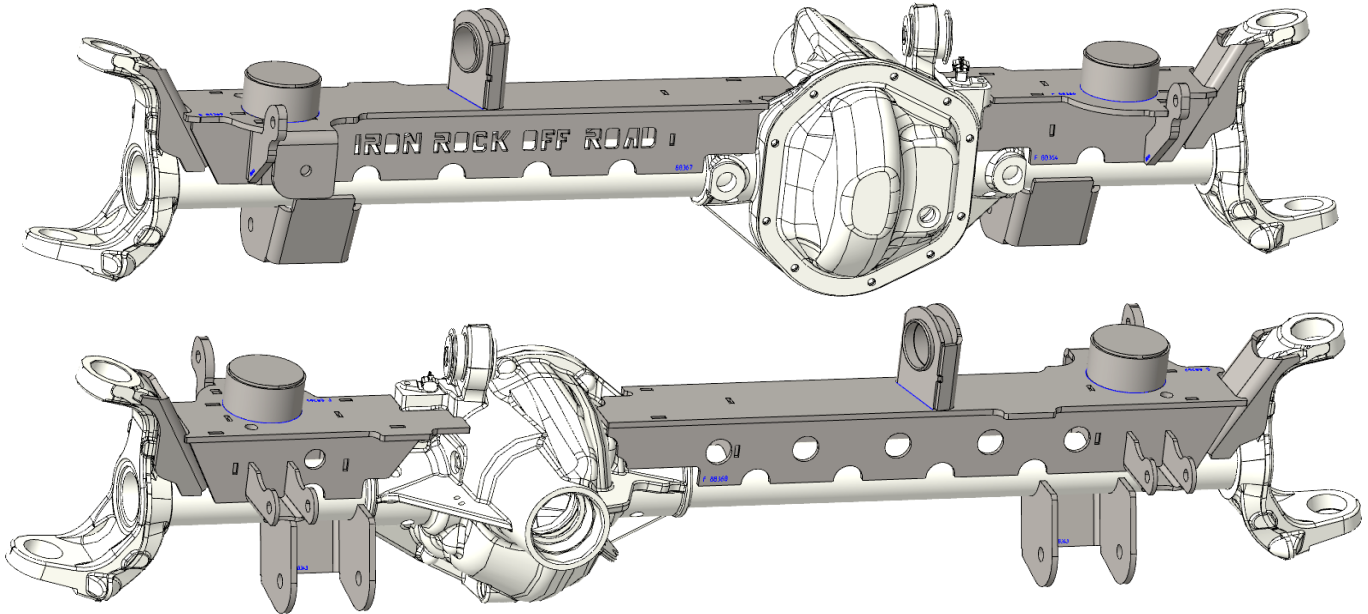


**Driver side LCA mount: Preheat the cast differential before welding. Wrap welded area in a welding blanket to avoid cracking after welding.



Final Check and Paint:

36. Recheck the truss and axle assembly for any section that may have been left unwelded during assembly. Weld any area that may have been missed and allow a short cooling off period between welds. Ensure good weld penetration but try to minimize the amount of heat and the heat affected zone.
37. Cover with welding blanket to ensure a slow, even cooling process.
38. Remove any weld spatter and prepare axle assembly for paint.
39. Repeat step 4 to verify that the axle housing and tubes are still straight. The axle must be completely cool for this measurement.
40. It is recommended that you install new axle seals and ball joints due to welding heat.
41. Paint axle assembly and install in your Jeep.



ABS Wheel Speed Sensor Kit

42. Attach your wheel speed sensor harness to the wheel bearing.
43. Route the harness through the axle C and attach it to the factory ABS bracket on the upper ball joint.
44. On the frame side, locate the original ABS connector and cut it off close to the back of the connector to leave as much wire as possible.
45. Strip off some of the insulation from the original wires and off the new ABS connector wires.
****Note the color of the original wires, one solid color, one with a stripe.**
46. Slide a piece of heat shrink onto each wire of the new ABS connector, then crimp on a slice to each one.
47. Crimp the red wire to the original stripe wire and crimp the black wire to the original solid color wire.
*****Note: the orientation the wiring is the same on both the driver and passenger sides of the Jeep.**
48. Heat the shrink tubing and wrap the new leg of the wiring harness in electrical tape to protect it.
49. Connect the ABS wheel speed sensor harness to the new connector.

Brake Hoses:

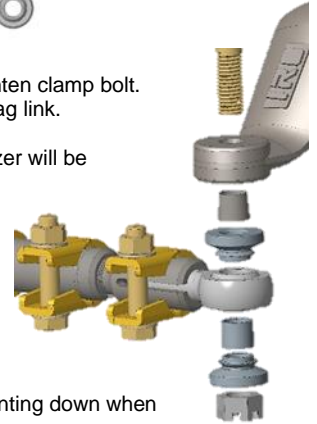
50. Attach the new brake hose to the caliper using the original bolt and new copper washers. The caliper fitting should point forward.
51. Route the new brake hose around the front of the shock.
52. Ensure there is enough slack in the hose for steering and full flex of the suspension and secure the hose to the truss with the supplied clamp and self-tapping screw.
53. Disconnect the hard brake line from the original brake hose and remove the original brake hose bracket from the uni-frame.
54. Position the new brake hose bracket on the uni-frame below the original bracket. Install the new bracket using the supplied self-tapping screws.
55. Orient the new brake hose to avoid moving suspension, drivetrain, and the exhaust. Attach the new brake hose to the bracket with the supplied clip.
56. Attach the brake line to the new brake hose.
57. Double check that the new brake hose is not stressed during full droop, full steering, and full flex.
58. Bleed the brakes and check for leaks.
59. Using zip ties, secure the ABS harness to the brake hoses. Ensure there is enough slack in the cable for steering and full flex.



Drag Link:



60. Slide a clamp onto knuckle end of drag link (right-hand threads). Install a bolt and nut loosely.
61. Thread one XMR-12 (3/4" hole) rod end fully into the end of the drag link until it stops. Thread it back out 2 full turns. Tighten clamp bolt.
62. Slide a clamp onto the opposite end of the drag link then thread double adjuster (left-hand threads) into the end of the drag link.
63. Slide a clamp onto the double adjuster then thread the XMR 8-12 (1/2" hole) rod end into the double adjuster.
64. Install M12 x 60mm bolts, nylock nuts, and washers into drag link clamps. Do not tighten at this time. The optional stabilizer will be installed in the empty clamp after the steering wheel is centered.
65. Install tapered sleeve into the bottom of the pitman arm then install the drag link to the pitman arm using two 1/2" high misalignment washers, and 1/2-13 x 3-1/4" drilled bolt, castle nut and washers.
66. **Over The Knuckle ONLY:** Insert the 5/8-11 x 3" Tapered Bolt into knuckle from the bottom side. Install the draglink to the tapered bolt using the high misalignment washers, castle nut, and cotter pin.
****OTK Drag Link installation requires Track Bar Drop Bracket 10415 (4" lift minimum) ****
67. **Under The Knuckle ONLY:** Insert tapered sleeve into the steering knuckle. Install drag link under the knuckle using drilled 5/8-11 x 3-3/4" bolt, the high misalignment washers, castle nut, and cotter pin. Washer on top under castle nut.
****UTK Drag Link installation requires 29.5" extended length shocks or shorter.**
68. Orient the drag link with the bend forward and both heim joints resting as shown in the picture. The clamps should be pointing down when oriented properly. Tighten 5/8" & 1/2" bolts to 100 ft-lb, adjuster clamps to 55 ft-lb.



- Steering wheel alignment:**
69. Ensure all fasteners are torqued to spec and cotter pins are installed.
 70. Go for a short test drive.
 71. Note steering wheel angle when driving straight and steady.
 72. Drive straight into your working area making sure steering wheel angle matches angle during test drive.
 73. Loosen only the double adjuster clamps on drag link.
 74. Turn only the double adjuster until steering wheel is straight.
 75. Tighten clamps. Ensure the clamping bolts are on the front side of the drag link. Bolts vertical, nuts on top. See picture.
 76. Test drive again, recheck steering wheel angle.
 77. Repeat steps if necessary.



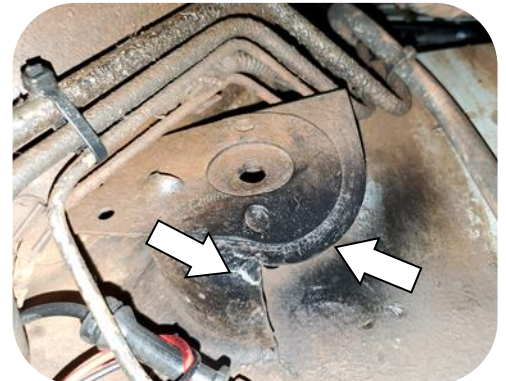
Steering Stabilizer:

78. With the steering wheel centered and the Jeep at ride height, turn the steering wheel to the right until full lock is reached. This should be the point where the steering stabilizer would be fully collapsed: its shortest length.
79. The steering stabilizer runs from the drag link to the track bar itself.
80. Install a steering clamp onto the track bar. Use the provided M12 x 80 bolt from hardware kit #71 to attach the stabilizer to the steering clamp. Place a 7/16 washer on each side and between the stabilizer and the steering clamp.
81. Attach the other end of the stabilizer to the empty clamp on the drag link using the M12 x 80 bolt, nut and washers.
82. Ensure the stabilizer is fully collapsed by compressing it by hand.
83. Note the location of the stabilizer clamp on the drag link.
84. Extend the stabilizer slightly (approx. 1/8") and tighten the clamp.
85. Torque the stabilizer clamp to 55 ft-lb and 65 ft-lb at the bracket.
86. The stabilizer should now be centered with the tires pointed straight ahead. Double check by cycling the steering both directions to ensure stabilizer does not limit your steering angle.



Optional – Rock - Link Upper Control Arm:

87. Remove your Rock- Link upper control arm (UCA) and measure the length from center to center.
88. Loosen the clamping bolt and remove the threaded male end. Inspect the male end, re-grease if necessary, and install into the new UCA.
89. On the Jeep, clearance the lower corner of the driver's side OEM UCA mount by bending or cutting as shown in the picture.
90. Install the new UCA and check caster.
**** Important: caster needs to be 2.5° or more for proper drive shaft clearance. If in doubt, remove springs and flex test suspension: driver's side up, passenger's side down.**



Final Safety Warning:

* Re-torque all fasteners after 100 miles, and frequently inspect all safety critical suspension and steering 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.

