SYNERGY MFG. 870 INDUSTRIAL WAY, SAN LUIS OBISPO, CA (805) 242-0397

5052- SYNERGY SUSPENSION UNIVERSAL REAR 4-LINK KIT

Version 1.0

GENERAL NOTES:

- These instructions are also available on our website; *www.synergymfg.com*. Check the website before you begin for any updated instructions and additional photos for your reference.
- These instructions include only the link suspension kit, you will need to accommodate steering, spring and shock mounts in addition
- This is a universal kit and will likely require modifications to these components to fit your application correctly
- The installation of this suspension kit requires extensive cutting, grinding and fabrication. Many of the major suspension brackets on the frame will need to be cut off and ground smooth. A plasma cutter or oxy-acetylene torch works best but you can also use a grinder with a cut off wheel.
- You will need basic hand tools, MIG welder a grinder with cut off wheel or sawzall, floor jack or automobile lift, and two sturdy jack stands to complete this installation.

1. Unpack the suspension components from the boxes, verify that all parts are intact and in good condition.
2. Read all the following steps before beginning installation. If you do not have the proper tools or ability to install the components properly do not attempt installation. Find a creditable, local shop to do the installation work.
3. Take some baseline measurements of your existing suspension so you know what you had, measure the distance from the axle to the frame at ride height, axle to the ground, and axle location front to back.
4. Make a plan and take notes of what you want to change, i.e. move the axle rearward 4-6" is common.
5. Tack weld everything, do not finish weld any component until you have cycled the suspension and checked that everything clears adequately.

FRAME LINK BRACKETS

6. Use a floor jack under the center of rear axle to lift the tires off the ground. Place jack stands under each side of the rear portion of the frame rails to support the weight of the vehicle. Raise or lower the floor jack under the rear axle to remove and install suspension components.
7. Remove the rear suspension components and the entire rear axle assembly

8. Cut off any suspension bracket on the frame that you will not be using, i.e. lower control arm brackets, shock mount, spring mounts, track bar brackets, leaf spring hangers, etc
9. Position and clamp the new rear frame control arm brackets on the frame. The front to back location is entirely up to you, on a TJ or YJ, up against the back of the T-case skid plate is generally is where it goes. You may need to relocate or push the brake, fuel lines above the frame control arm bracket.

10. Mark the bracket where the top edge of the frame is.

11. Remove the control arm bracket and cut at the line.

12. Reposition the control arm bracket to the frame and tack weld the upper plate on.
13. Remove the control arm bracket again and weld the top plate on.

SYNERGY MFG. 870 INDUSTRIAL WAY, SAN LUIS OBISPO, CA (805) 242-0397

14. Reinstall and tack weld the control arm brackets on the frame. Double check the front to back location and make sure they are the same side to side.

AXLE LINK BRACKETS

15. Cut off all or any unwanted suspension brackets from the axle housing. Use a grinder with a cut off wheel, plasma cutter or oxy-acetylene torch. Grind the welds smooth.
16. It is best to set the axle on jack stands with a jack supporting the pinion to set the pinion angle. Adjust the pinion to your desired angle, 10-15 degrees is typical for this type of application.
17. Position the lower control arm brackets on the axle tube. These brackets are made for a 3" axle tube, you may need to modify them to fit your axle tube if it's a different size. This is not a set location and is up to you to find the optimum position.

Typically the lower control arm brackets are 42-44" apart, center to center. Make sure they angle inward looking from the top. Tack weld to the axle tube.

18. Mount the axle truss with the upper control arm brackets. This is typically mounted with the top level. Tack weld to the axle tube

SYNERGY MFG. 870 INDUSTRIAL WAY, SAN LUIS OBISPO, CA (805) 242-0397

LOWER CONTROL ARMS

19. Position the axle housing back under the vehicle on jack stands. Set the front to back location and set the axle at ride height and correct pinion angle based on your notes and dimensions from the beginning.
20. Measure center to center of the bolt holes of the lower control arm brackets. This will be the length of the lower control arms. Thread the rod ends or Johnny Joints with jam nuts into the threaded bungs. Only leave a couple of threads exposed past the jam nuts. Measure from the center of rod end to the step on the threaded bung were the tube is to be welded. Subtract two times this dimension from your center to center measurement and this is the cut length of you tube.
21. Cut the lower control arm tubing to the length calculated above and tack weld the threaded bungs in.

22. Install the lower control arms to the axle and frame brackets.

UPPER CONTROL ARMS

23. Measure center to center of the bolt holes of the upper control arm brackets. This will be the length of the upper control arms. Thread the rod ends or Johnny Joints with jam nuts into the threaded bungs. Only leave a couple of threads exposed past the jam nuts. Measure from the center of rod end to the step on the threaded bung were the tube is to be welded. Subtract two times this dimension from your center to center measurement and this is the cut length of your tube.
24. Cut the upper control arm tubing to the length calculated above and tack weld the threaded bungs in.
25. Install the upper control arms to the axle and frame brackets.

SYNERGY MFG. 870 INDUSTRIAL WAY, SAN LUIS OBISPO, CA (805) 242-0397

FINAL CHECK AND ASSEMBLY

26. The following components are not covered in these instructions, but now would be the time to address them
    - Shock and spring mounts
    - Anti-sway bar mounts
    - Brake lines
    - Parking brake cables
    - Drive shaft angle or slip
    - Differential breather length

33. Cycle the suspension and double check that everything clears satisfactorily.

34. Remove the control arms, axle housing and weld:

- Weld the axle housing control arms brackets
- Weld the frame control arm brackets to the frame
- Remove the rod ends from the control arms and weld the tube bungs

35. Paint all components and reinstall, torque the 9/16 hardware to 150 ft-lb
36. Have the vehicle aligned by a professional shop. Check all hardware after 500 miles of driving. We also recommend checking all hardware before and after all off road trips to avoid failure from loose fasteners.