



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

## 5011 JK FRONT COIL OVER/AIR BUMP STOP BRACKET KIT INSTALLATION

Version 1

### GENERAL NOTES:

- These instructions are also available on our website; [www.synergymfg.com](http://www.synergymfg.com) Check the website before you begin for any updated instructions and additional photos for your reference.
  - We recommend that you use a 2" x 12" travel coil over shock. This will give you an effective 4" tall bump stop spacer. 14" travel shocks can be used but you will lose 2" of up travel.
  - We recommend that you use some sort of secondary suspension bumpstop. A foam bumpstop can be added to the shock shaft for a simple installation or you can upgrade to the Synergy MFG air bump mounting kit that works in conjunction with these brackets. You can use most 2" air bumps or use the budget bump kit with your stock foam bump stops and mounting cups. You can easily add air bumps at a later time.
  - The installation of this bracket requires the complete removal of the stock shock and coil mounts on the frame and axle. A plasma cutter or oxy-acetylene torch works but you can also use a sawz-all and cut off wheel. The new bracket must be welded to the frame and axle tube. An experienced fabricator/welder is recommended to properly install this bracket.
1. Support frame of the vehicle on jack stands and remove the tires/wheels and shocks and coils. Leave the suspension components connected so you can cycle the suspension up and down.
  2. Cut the stock shock brackets from the frame. Be careful of the brake lines and any other components that are directly behind the shock and coil brackets.
    - a) Cut the rear and top of the shock mount.



b) Cut the front of the shock mount where it attaches to the coil mount



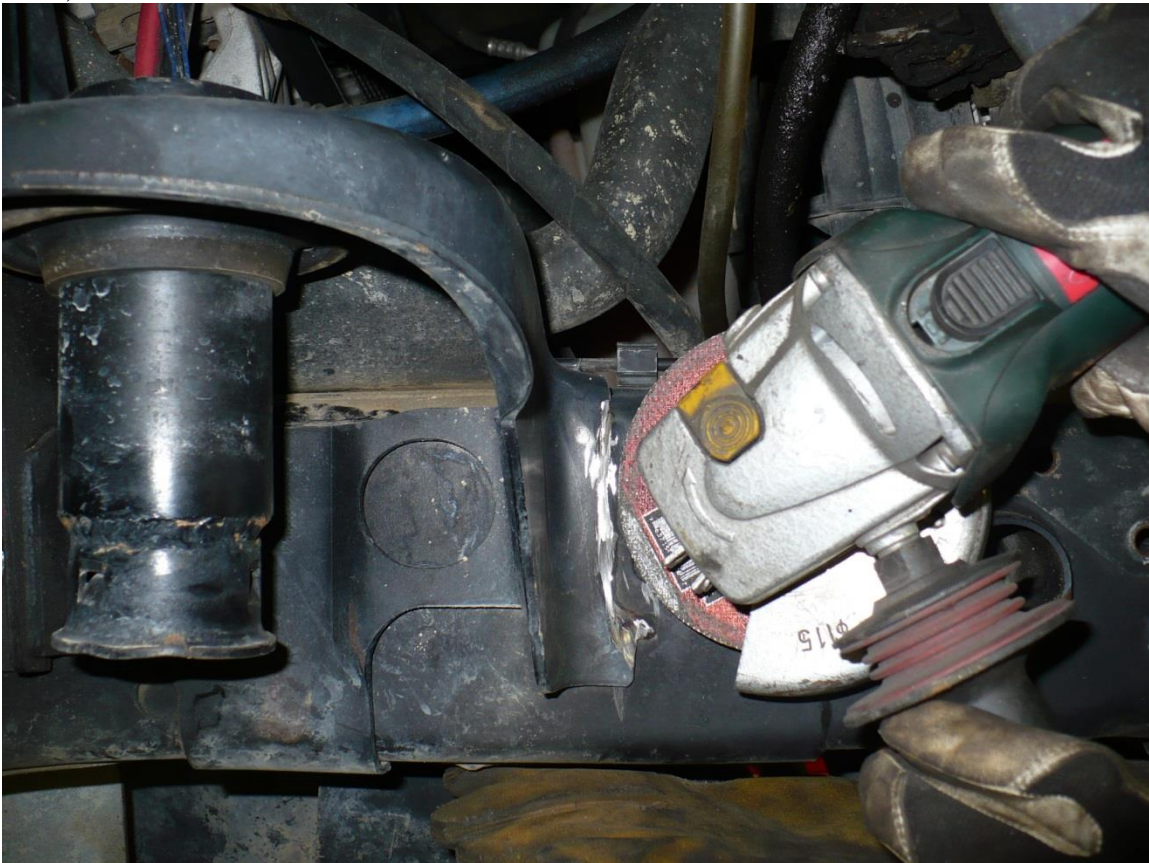
c) Remove the shock bracket



3. Remove the stock coil brackets from the frame.
  - a) Cut the upper coil bracket from the frame, a plasma cutter or oxy acetylene torch is recommend for this.



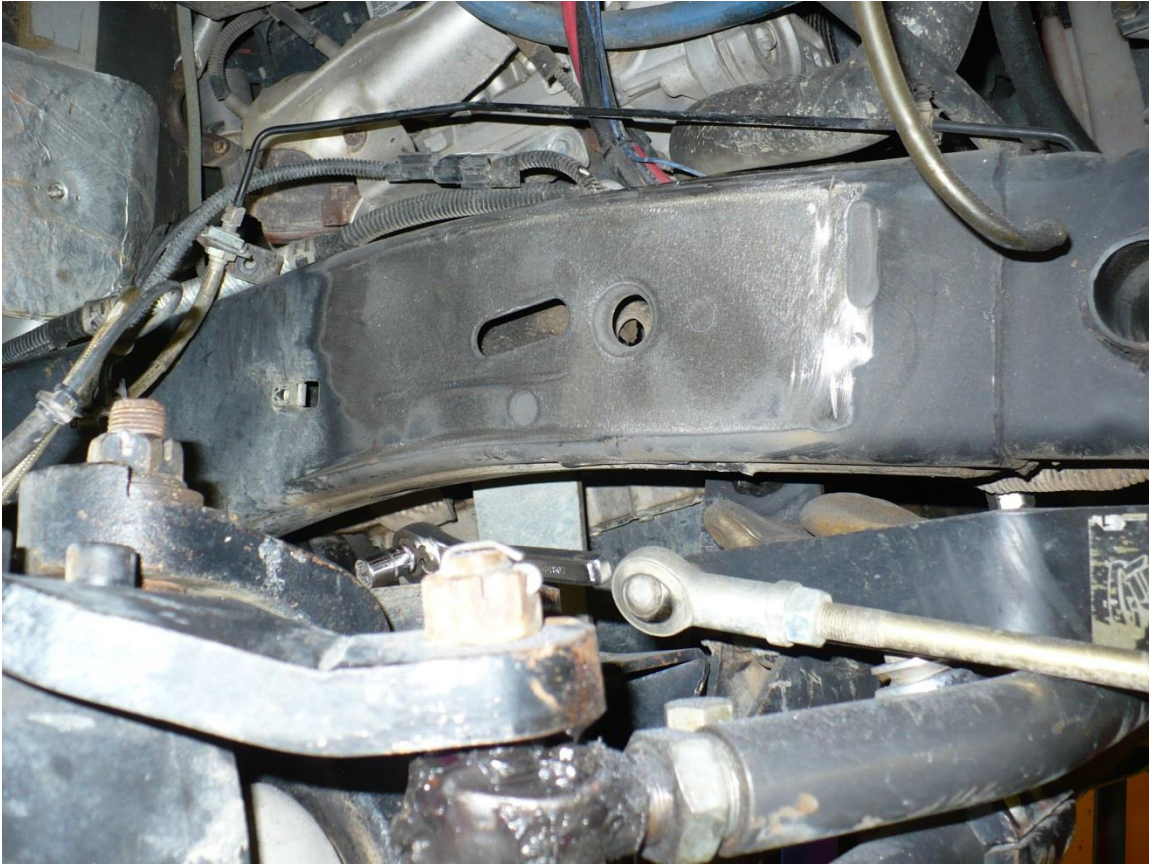
b) Cut the sides and bottom weld that attach the coil mount to the frame





c) Remove the remainder of the coil bracket and grind clean





4. Completely remove and grind clean the lower coil mount and shock brackets from the axle housing. Cut one side at a time then tack weld the new lower mount so you can reference the angle of the stock coil mount before you cut them both off.



5. Position the new lower shock/bumpstop bracket on the housing. Tack weld the bracket to the axle tube when positioned correctly.



- a) The inner edge of the shock bracket should be about 1" from the outer edge of the lower control arm brackets



- b) The outer edge of the lower shock bracket should be about 1 ½” from the machined edge adjacent to the weld on the inner C.



- c) The top of the bump stop pad on top of the lower shock mount should be level to the ground at ride height. An alternative way to measure this is to make this level to the top of the stock coil bracket on the opposite side.





You may need to trim the back of the track bar bracket to clear the new lower shock bracket.

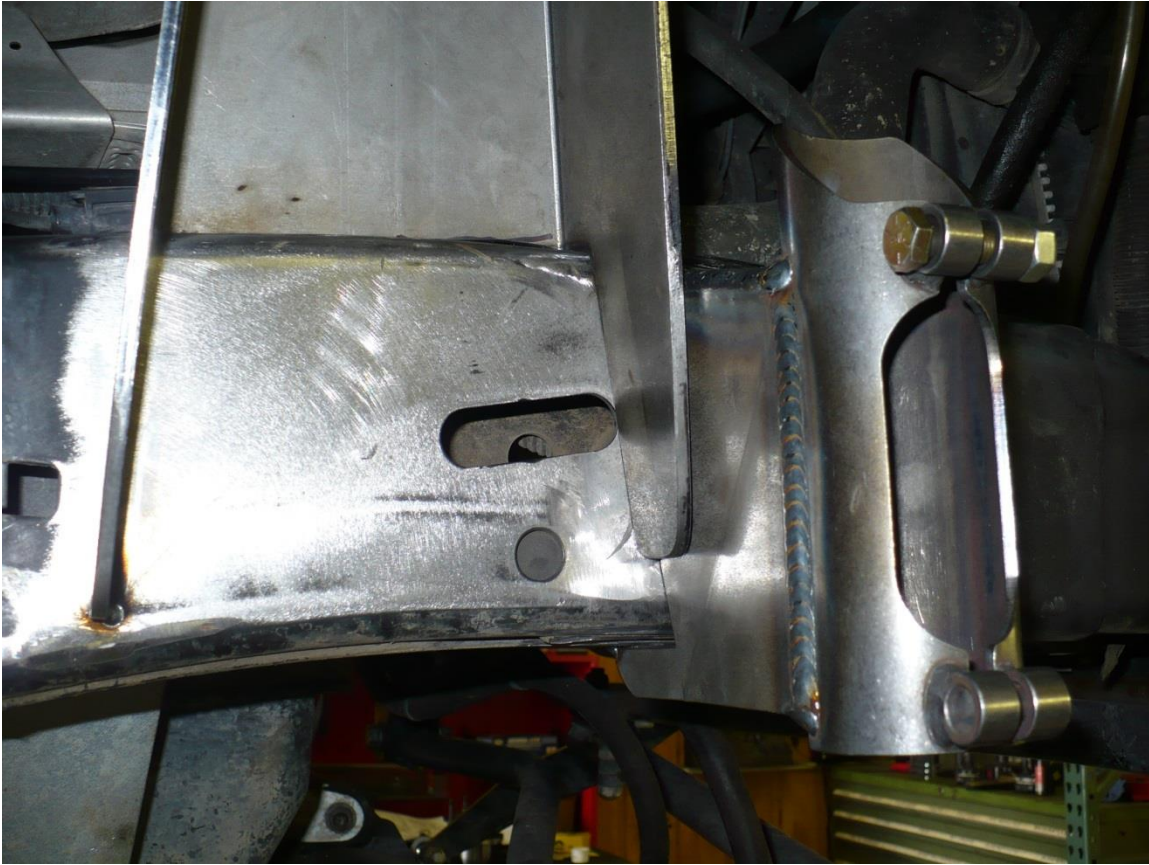
6. Position the new upper shock brackets on the frame, the brackets are left and right specific so you will need to determine which side is which by fitting them to the frame. We recommend that you paint the upper mount before you tack weld into place. Leave the areas that you will be welding unpainted.
  - a) The rear edge of the upper shock bracket should be located along the front edge of rectangular hole for the brake line bracket.



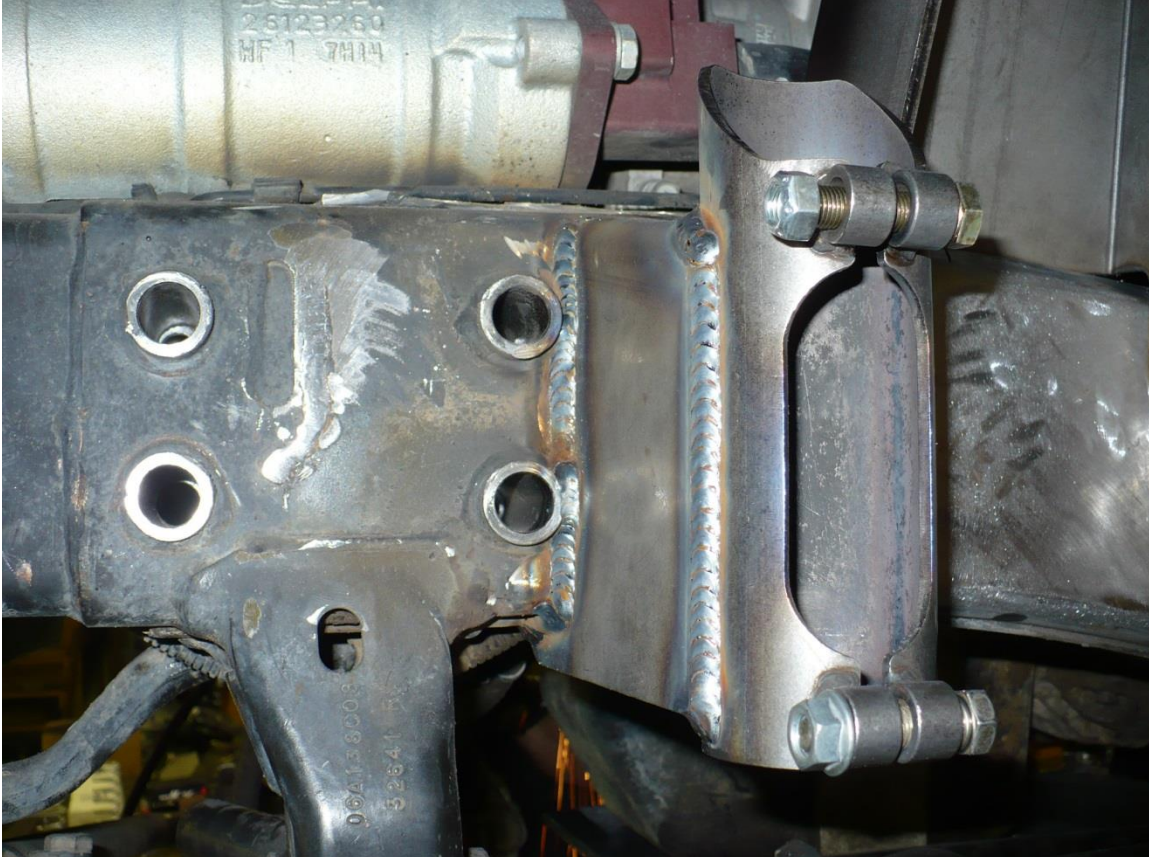
- b) The top of the upper shock mount should fit up in the pocket where the stock shock bracket was located. When the upper shock bracket is correctly positioned, tack weld into place, then repeat on the other side.



7. Tack weld the air bump mounting brackets into place. Position the back of the air bump mounting bracket against the front of the shock brackets. The air bump mounting brackets are left and right specific; the side with the diagonal bend is the rear of the bracket. Put that side against the shock bracket.
  - a) Move the air bump bracket all the way back so it is against the front of the shock bracket.



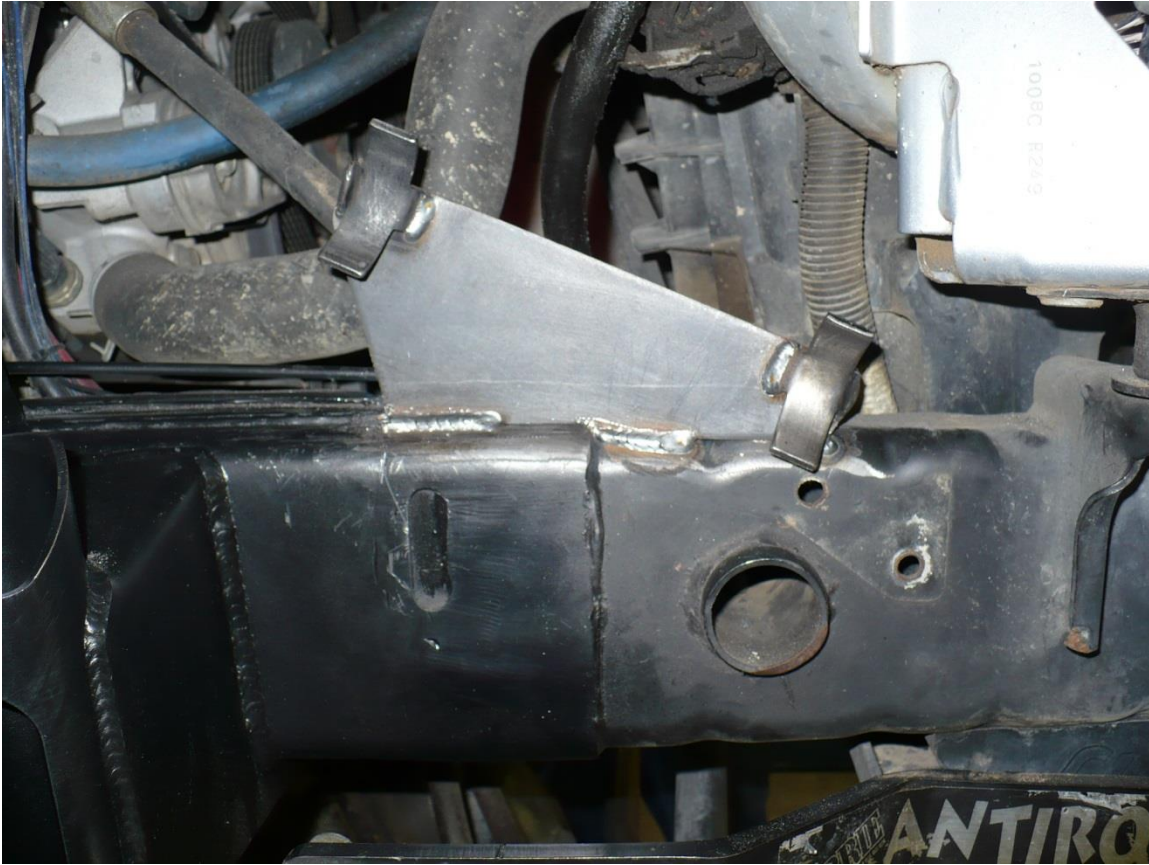
b) Make sure the front of the air bump mount is just behind the steering box mounting tubes.



c) Move the air bump mounting bracket all the way up so the bottom fingers are up against the bottom of the frame.



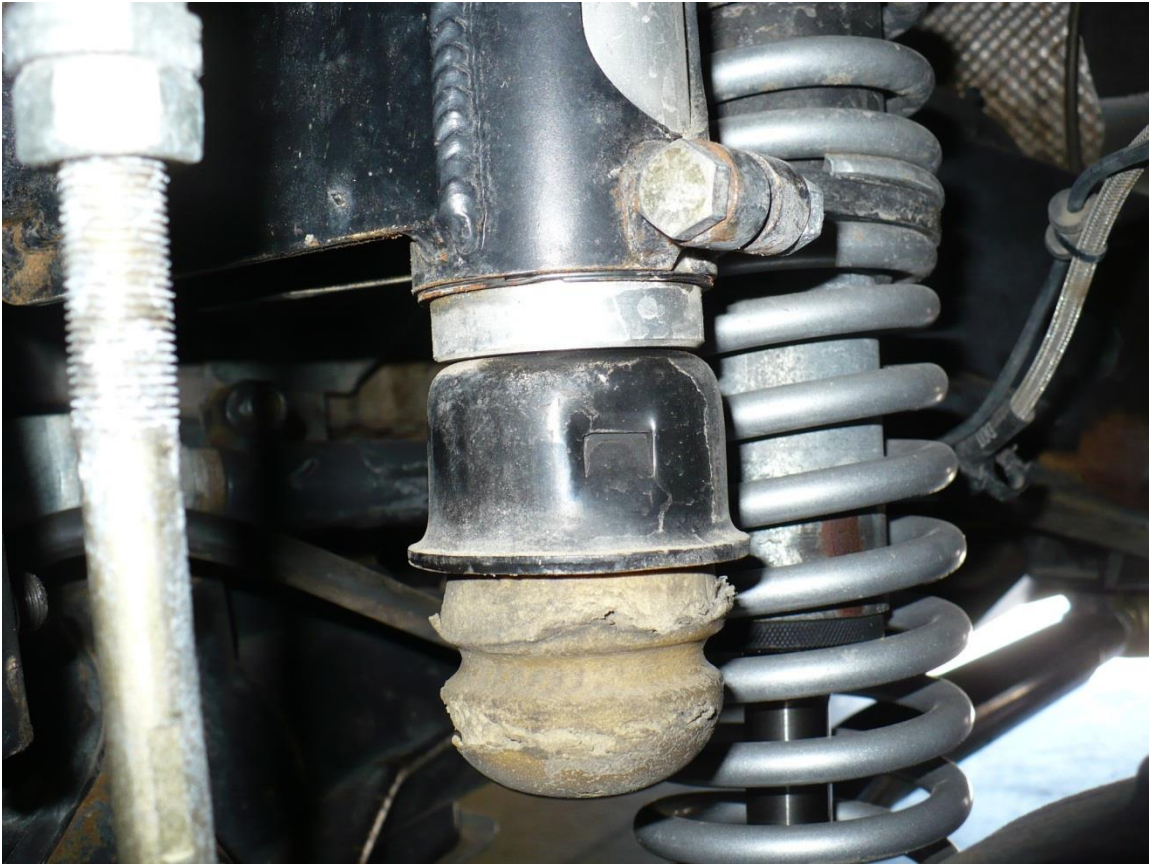
8. If you have remote reservoir shocks and purchased the remote reservoir mount kit, mount the remote reservoir mounting brackets as shown below. The brackets are left and right specific; there is a step in the bottom edge of the bracket that fits the welded seam on the top of the frame. Position the bracket where the radius on the corner of the frame ends, about  $\frac{1}{2}$ " from the outside of the frame.



9. If you are not using air bumps and purchased the budget bump kit, cut the bump stop cup from the stock upper coil mount. Be careful to just cut the weld and leave the bottom of the cup intact. You will need a  $\frac{3}{8}$  x 1 coarse thread bolt and washer to attach the cup to budget bump.



Install the snap ring in the lowest groove; this will give you the same collapsed length as an air bump.



10. Now that all the shock and air bump brackets are tack welded into place, we recommend that you bolt the shocks into place without the coil springs and cycle the suspension to check that every thing clears. Make sure that the air bumps bottom out before the shocks do. Also check for brake line, driveline and steering linkage over-extension.
11. If everything fits and clears well, weld the brackets to the frame and axle mounts:
  - a) Weld all edges that the coil over shock bracket and air bump bracket contact the frame. Weld both inner vertical seams and the top of the frame between the shock bracket and frame. Weld the rear vertical seam above and below the brake line bracket hole. Weld the front, top and bottom of the air bump bracket. Also weld the back of the air bump mount to the front of the shock bracket.
  - b) Weld all edges that the lower shock bracket contacts the axle tube, front, bottom and both sides.
12. Clean the welds and paint the new brackets and frame.
13. Assemble the front suspension and coil over shocks. Torque the ½” shock bolts to 80 ft-lbs and the bump stop pinch bolts to 10 ft-lbs.