



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

PPM-8240 JEEP XJ REAR SPRING HANGER BRACKET

Version 1.1

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.
- The installation of this suspension kit requires some major cutting, grinding, drilling and optional welding.
- You will need basic hand tools, a drill with a 3/8" drill bit, a grinder with cut off wheel or sawzall, floor jack or automobile lift, and two sturdy jack stands to complete this installation. A spot weld cutter will make removal of the stock spring hanger much easier. Part number: **4096A11** on www.mcmaster.com works well for this installation.

1) Unpack the brackets and hardware from the package and verify that all parts are present.

PPM-8240 Parts List

- 20: 3/8-16 x 1" Bolts
 - 20: 3/8-16 Top Lock Nuts
 - 40: 3/8" flat washers
 - 2: 9/16-18 x 4.5" Bolts
 - 2: 9/16-18 Top Lock Nuts
 - 2: 9/16" flat washers
 - 2: PPM-8240 Rear Spring Hangers.
- 2) Begin by jacking the rear of the vehicle up by placing a floor jack under the center of the diff and securely support the vehicle using jackstands to take the weight of the vehicle off the rear suspension. Leave the jack under the rear axle for the duration of the installation process.
- a. Remove the wheels, U-bolts, rear spring to shackle bolt, and forward spring to spring hanger bolt and remove the leaf springs.
 - b. To prevent damage to the interior of the vehicle, lift up the carpet in the rear passenger footwell as drilling into the vehicle will take place here. The bottom of the rear seat, and carpet underneath it will also need to be removed to access some of the holes drilled and prevent damage to the carpet.
- 3) With the rear springs removed, removal of the forward spring hanger can begin. Note that the forward spring hanger is spot welded to the vehicle in many places. It is not necessary to remove every part of the bracket and is not recommended since it is difficult to do without damaging the unibody around the hanger.

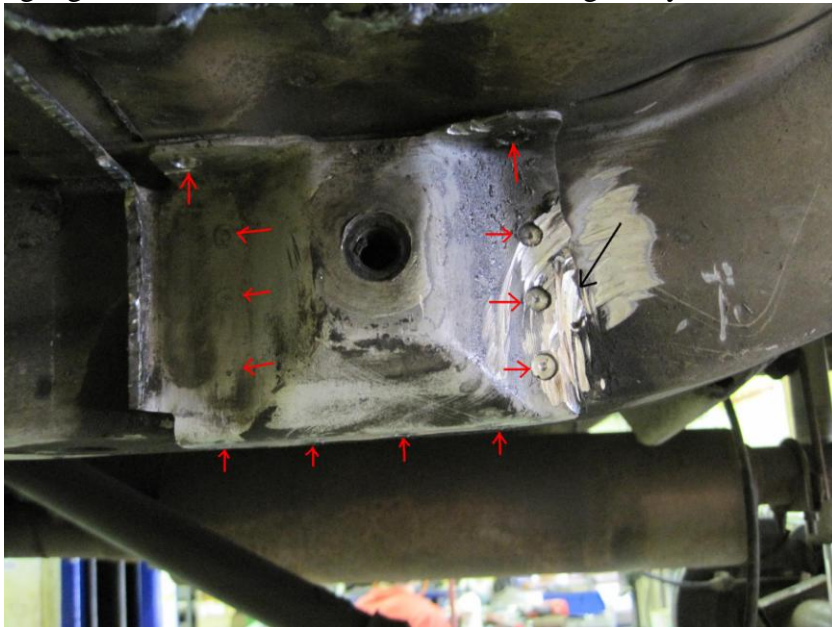
- a. Start by cutting off the outer and forward portions of the spring hanger as shown in the following 2 pictures.





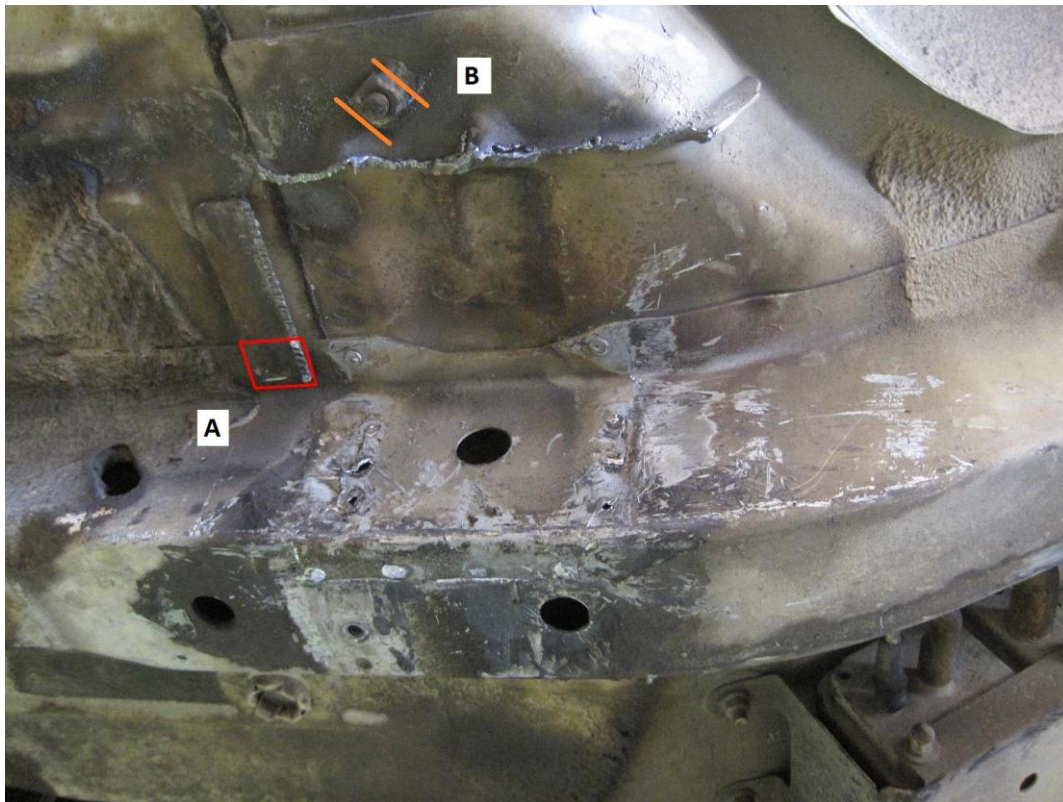
This is how the spring hanger should look after the first cuts.

- 4) Next, remove the inner part of the rear spring hanger by first locating the approximately 12 spot welds holding the inner bracket on (6 on the face of the frame, 4 on the under side of the frame and 2 on the body to frame rail seam).
 - a. Drill out the spot welds using at least a 3/8" diameter spot weld cutter being careful not to drill through the unibody.
 - b. There is also a seam weld on the rear of the hanger that needs to be cut. A 4.5" angle grinder with cut-off wheel works well, again try not to cut into the unibody.



Red Arrows indicate spot welds; black arrow indicates the seam weld. All of which need to be cut to remove the inner part of the spring hanger cleanly.

- 5) Once welds have been cut, remove the inner spring hanger using either a hammer and chisel, or an air hammer with a chisel end. Be careful not to damage the unibody if using an air-hammer.



- a. Note the red square near letter A which encompasses the remainder of the forward section of the spring hanger. This piece of the bracket will need to be cut off for the new spring hanger to be installed. Cut along the body to frame seam towards the outside of the body to remove this piece. A grinder with cut off wheel works well.
- b. Note the 2 orange cut lines near letter B. This weld nut will need to be cut off. Remove the torx head bolt from the under side of the seat and cut off the weld nut.
- 6) Grind smooth the unibody and remainder of the bracketry so the new spring hanger can mount flush to the frame and body.



- a. Test fit the new spring hanger and grind smooth any other interfering bracketry. (If welding the bracket on as well, mark and clean the desired areas of the unibody where planning to weld. The new hanger should fit snug to both the unibody and the bottom of the body itself.)
- b. Note that the fuel and brake lines on the passenger side will need to be slightly moved so the hanger can fit flush to the unibody.
- c. Positioning of the hanger can be done 3 ways.
 - i. Utilize the hole in the unibody where the old spring bolt went through and line it up with the hole on the new spring hanger for the spring bolt.
 - ii. Measure 3.75" from the front of the spring hanger to the nearest body seam in front of the spring hanger.
 - iii. The spring hanger should only be able to go so far forward as the unibody gets wider in front of where the new hanger goes. Position the hanger as far forward as it can go, it will butt up to the widened portion of the unibody.



- 7) With the hanger positioned, begin drilling the ten $3/8$ " holes, using the hanger as a guide to bolt the hanger to the body



- 8) Once all 10 holes have been drilled, loosely start all ten 3/8" bolts. Drop the bolts in from the top, using washers under both the bolt head and top lock nut. Once all bolts and nuts have been started, snug them down and torque them to 40 ft/lbs.





Top view of spring hanger bolts, looking down under the rear seat.

- 9) If welding of the bracket on is desired as well, clean the areas desired to weld (Up to the installer, the following pictures is what is recommended for a simpler install. If building a Jeepspeed or serious rockcrawler, more welding may be desired.)



- 10) Paint any areas of bare metal exposed, secure fuel and brake lines and reinstall rear suspension.
 - a. Install the 4.5" long 9/16" bolt provided in the kit as the forward spring to spring hanger bolt. Utilize the washer under the bolt head, and install the top lock nut on the back side.



- b. Snug all suspension components enough to set vehicle under its own weight, Torque U-bolts, forward and rear spring bolts once vehicle is sitting under its own weight.
 - i. Torque U-bolts to 95 ft-lbs
 - ii. Torque the forward and rear spring bolt to 110 ft-lbs.
- 11) Check all hardware after 500 miles of driving. We also recommend checking all hardware before and after all offroad trips to avoid failure from loose fasteners.

Installation is Complete