



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

## PPM-8012-01 / 8012-09 / 5901-30 / 5901-44 JEEP DANA 30/44 INNER AXLE SLEEVE

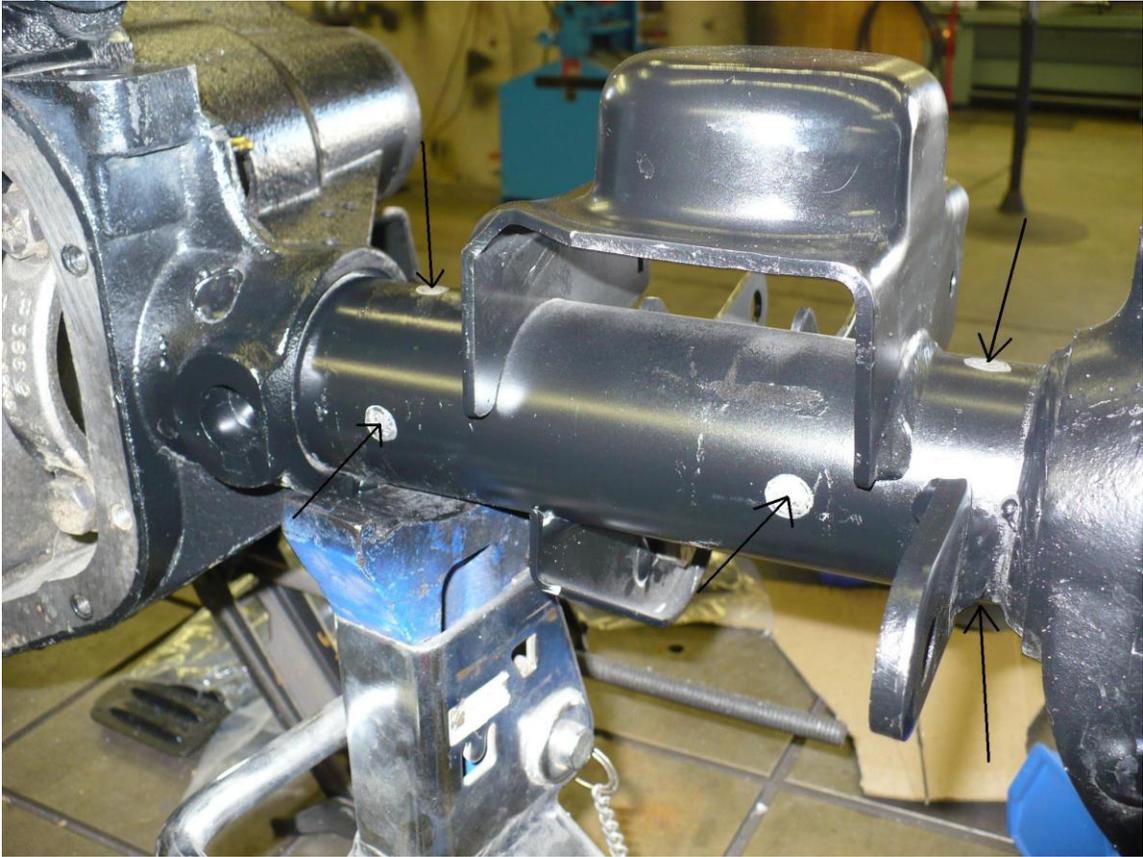
Version 3.0

### 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.
- The installation of the inner axle sleeves requires removal of the wheels, brakes, axle shafts and axle housing assembly.
- Installation of the sleeves requires drilling 1/2" holes at various places on the axle housing.
- A competent welder is needed for completing the plug welds and circular welds around the axle housing tube for proper installation.
- It is recommended to remove the axle housing completely; this will make drilling and welding much easier.
- It is not necessary to remove the differential and gears or even drain the oil. Just be careful to not let metal chips in the housing when drilling the holes for the plug welds. Be careful to keep the housing level so gear oil does not leak out.
- The following instructions cover installation on a D30 / 44 JK housing. Installation will be similar on a TJ housing.

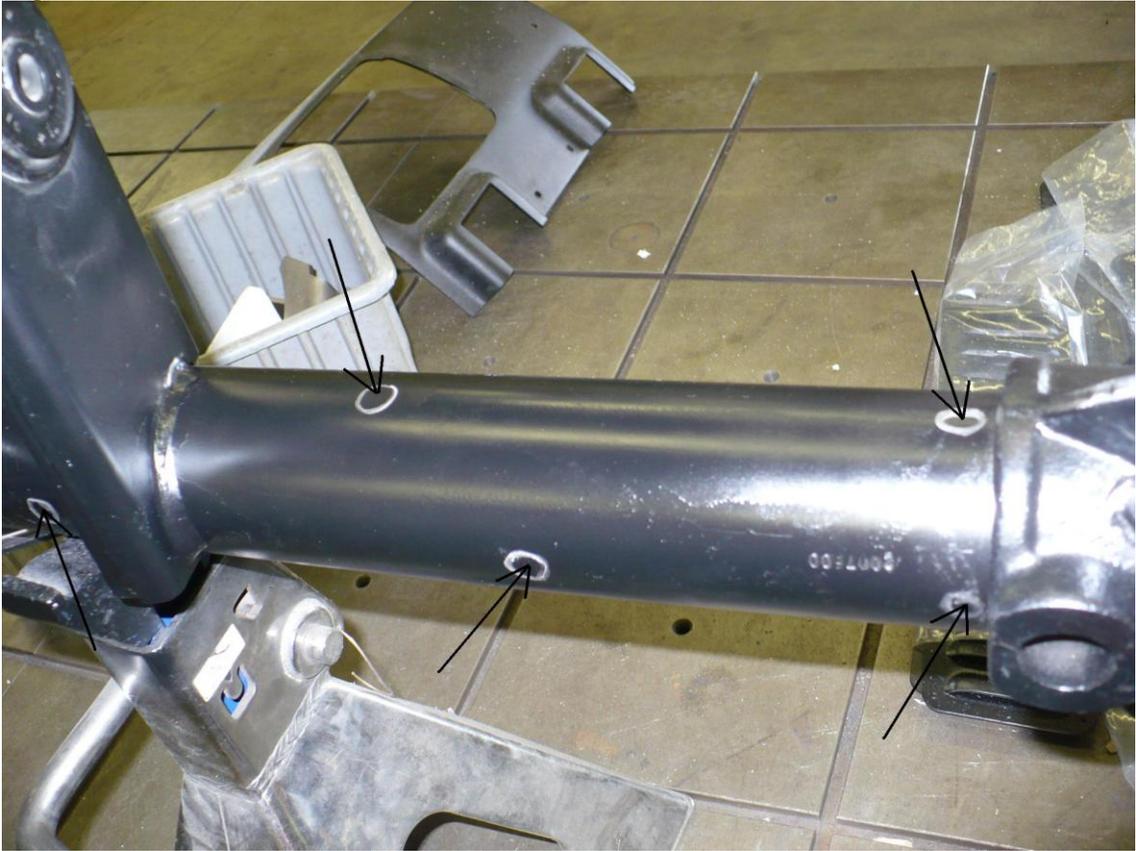
1. Start by placing the front of the vehicle on jack stands placed on the front portion of the frame or on an automotive lift.
2. Remove the front wheels.
3. Remove the brake caliper mounting bracket from knuckle using a 21mm socket and remove the brake calipers, hang or tie the brake calipers to the frame out of the way.
4. Remove the brake rotors.
5. Remove outer axle nut using a 35mm socket.
6. Remove the ABS sensor from the unit bearing using an 8mm allen wrench.
7. Remove the 3 unit bearing bolts from the inside of the knuckle using a 13mm 12 point socket
8. Remove the unit bearings and axle shafts.
9. Remove the shocks, sway bar links, coil springs, locker actuator connectors, driveshaft, draglink, track bar and all control arms at the housing. This will allow for removal of the complete housing.
10. Place the axle housing on jack stands on the ground or work bench for the drilling and welding process.
11. On the short side of the axle housing; mark the holes shown in Figure 1 and repeat the pattern for the back/underside of the housing.

**Figure 1**



12. There should be a total of 8 holes on the short side of the housing.
13. Now mark all the holes needed for the long side of the housing, shown in Figure 2 and Figure 3.

**Figure 2**



**Figure 3**



14. Repeat the hole pattern for the back/underside of the housing. There should be a total of 16 hole locations.
15. Center punch all hole locations and drill with a 1/2" drill bit.
16. Remove all paint around the hole surface, around the axle center section where the axle tubes press in, and at each end of the axle tube where the inner C presses on to the housing.
17. Remove all metal shavings from both sides of the axle housing after drilling and grinding. A telescoping magnet or long rod with a 1 1/2" radius tab welded at 90 degrees can be used to scoop out the shavings.
18. When all the metal shavings are removed, slide in the new inner axle sleeves until they are flush with the end of stock axle tube. See figure 4

**Figure 4**



19. With the paint removed from the inner C, weld around the stock axle tube to the new Inner Sleeve. As seen in Figure 4.
20. We recommend that you weld the cast iron center section to the stock axle tubes. The best method is to TIG weld with stainless 312 rod with a slight amount of pre-heating. Another option is to MIG weld with a little pre-heating. See Figure 5

**Figure 5**



21. Now begin to weld all the plug welds to the new inner axle sleeves.
22. When complete, grind down all the plug welds smooth with the axle tube.
23. Repaint your axle.
24. Reassemble and install your axle into the Jeep. Torque all suspension bolts when the vehicle is sitting on flat ground with the tires on. Torque the following items:

- Unit Bearing Bolts 75 ft-lbs
- ABS Sensor 34-50 in-lbs
- Axle Nut 100 ft-lbs
- Brake Caliper Brackets 120 ft-lbs
- Driveshaft Bolts 80 ft-lbs
- Track Bar Bolt 125 ft-lbs
- Lower Control Arm Bolts 125 ft-lbs
- Upper Control Arm Bolts 75 ft-lbs
- Lower Shock Bolts 56 ft-lbs
- Drag Link Nut 80 ft-lbs
- Sway Bar Nuts to 90 ft-lbs

25. Installation is Complete.