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Revisions			
Rev.	Description	Date	Approved
A	Revised Per ECO 19-038	3/27/19	A.S.



Jeep Dana 30/44 Inner Axle Sleeve Kit

Installation Instructions

Applications:

- Jeep Wrangler 1997-2018 (TJ and JK)
- Jeep Cherokee 1984-2001 (XJ)
- Jeep Grand Cherokee 1993-1998 (ZJ)



TITLE:
JEEP DANA 30/44 INNER AXLE SLEEVE KIT

SIZE	DWG NO:	REV
A	8012-09-INST	A
	SCALE: N/A	PAGE 1 OF 6



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 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 JK housing. Installation will be similar on a TJ, XJ or ZJ housing.

Tools Required

- Basic Hand Tools (Wrenches, Sockets, Hammers, etc.)
- Drill with 1/2" Metal Cutting Bit
- Angle Grinder
- Chop Saw or Band Saw (Optional)
- Welder (MIG, TIG with 312 filler optional for welding tubes to center section)
- Preheat torch (If welding axle tubes to center section)
- Paint

Estimated Installation Time

7-10 Hours

INSTALLATION

1. Cut the axle sleeves to the appropriate length based on Table 1.

Table 1. Axle Sleeve Cut Lengths

Model	Short Side Length	Long Side Length
TJ, XJ, ZJ Dana 30	8.50	24.25
TJ Dana 44	8.50	23.63
JK Dana 30 (No Cutting Needed)	11.38	27.25
JK Dana 44	11.25	26.50

2. Start by placing the front of the vehicle on jack stands placed on the front portion of the frame or on an automotive lift.
3. Remove the front wheels.
4. 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.
5. Remove the brake rotors.
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 8 hole locations, two on the top, two on the front, two on the back and two on the bottom. See **Figure 1**.

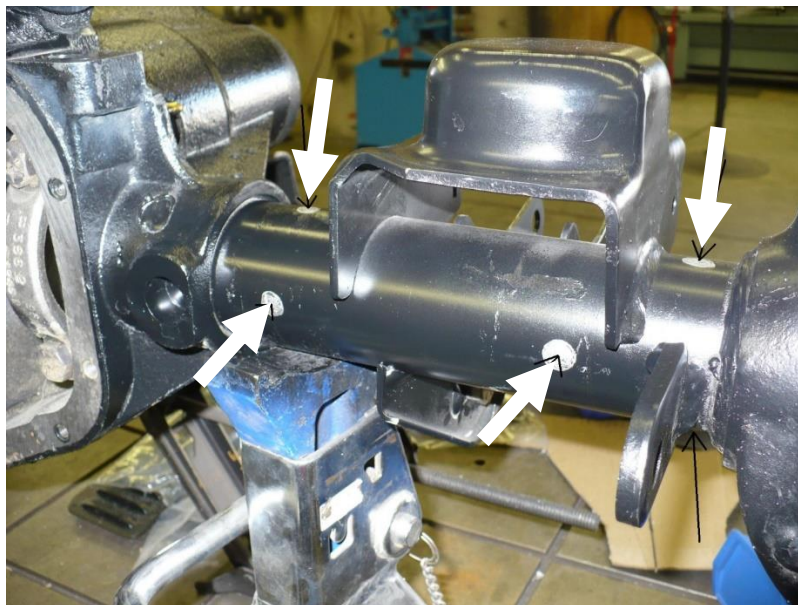


Figure 1. Marking Hole Locations On Short Side

12. On the long side of the axle housing mark 16 hole locations, four on the top, four on the front, four on the back and four on the bottom. See **Figures 2 and 3**.

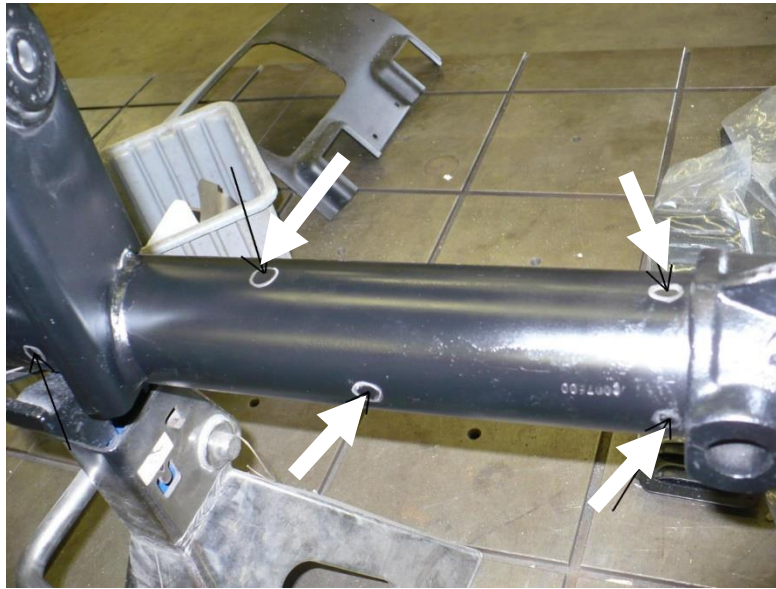


Figure 2. Marking Hole Locations Inside UCA Bracket On Long Side



Figure 3. Marking Hole Locations Outside UCA Bracket On Long Side

13. Center punch all hole locations. We recommend either stuffing a rag or towel in the housing all the way in against the axle seals on each side of the housing to prevent metal shavings from entering the differential. Alternatively, a shop vac hose may be placed in the tube and the vacuum run during drilling.
14. Drill all holes with a 1/2" drill bit.
15. 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.
16. Remove all metal shavings from both sides of the axle housing after drilling and prepping for welding. 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. If a rag was stuffed in the axle tubes, remove the rags and all debris with them.
17. When all the metal shavings are removed, slide in the inner axle sleeves until they are flush with the end of stock axle tube. See **Figure 4**. It may be necessary to use a mallet to slide the tubes all the way in if the axle is corroded or bent. Make sure the sleeves have been cut to the correct length from step 1.

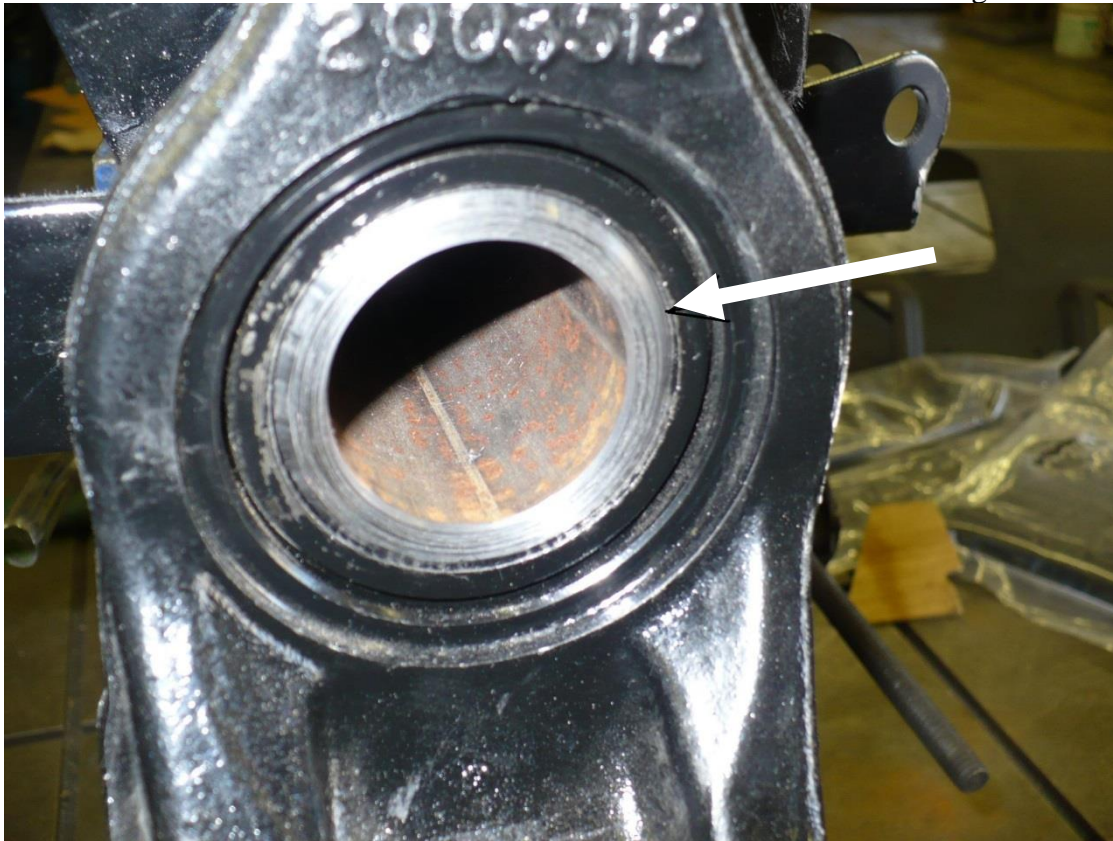


Figure 4. Inner Axle Sleeve Installed Flush With Axle Tube

18. With the paint removed from the inner C, weld around the stock axle tube to the new inner sleeve. It is important that this weld is not built up too much, it may interfere with the inner axle shaft if it is too large. Large weld beads should be ground flat.
19. Now begin to weld all the plug welds to the new inner axle sleeves.
20. When complete, grind down all the plug welds smooth with the axle tube.
21. 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. It is important that the housing cools slowly to prevent cracking.
22. Paint all bare metal on axle.



JEEP DANA 30/44 INNER AXLE SLEEVE KIT INSTALLATION INSTRUCTIONS

23. Reassemble and install axle into the Jeep. Torque all suspension bolts when the vehicle is sitting on flat ground with the tires on. See torque values in **Tables 2 and 3**.

Table 2. Jeep TJ/XJ/ZJ Bolt Torques

Unit Bearing Bolt	75 lb-ft
ABS Sensor Bolt	96 in-lb
Front Driveshaft Yoke Bolt	30 lb-ft
Axle Nut	175 lb-ft
Lower Ball Joint Stud	80 lb-ft
Upper Ball Joint Stud	75 lb-ft
Drag Link TRE Stud	55 lb-ft
Tie Rod TRE Stud	55 lb-ft
Lower Shock Bolt	20 lb-ft
Lower Control Arm Bolt	130 lb-ft
Upper Control Arm Bolt	60 lb-ft
Track Bar Axle Bracket Bolt	55 lb-ft
Sway Bar Link Bolt	55 lb-ft
Caliper Mounting Bolts	11 lb-ft

Table 3. Jeep JK Bolt Torques

Unit Bearing Bolt	75 lb-ft
ABS Sensor Bolt	45 in-lb
Front Driveshaft Yoke Bolt	81 lb-ft
Axle Nut	100 lb-ft
Lower Ball Joint Stud	70 lb-ft
Upper Ball Joint Stud	70 lb-ft
Drag Link TRE Stud to Knuckle	63 lb-ft
Tie Rod TRE Stud	63 lb-ft
Lower Shock Bolt	56 lb-ft
Lower Control Arm Bolt	125 lb-ft
Upper Control Arm Bolt	75 lb-ft
Track Bar Axle Bracket Bolt	125 lb-ft
Sway Bar Link Bolt	75 lb-ft
Caliper Mounting Adapter Bolts	120 lb-ft

Installation is Complete