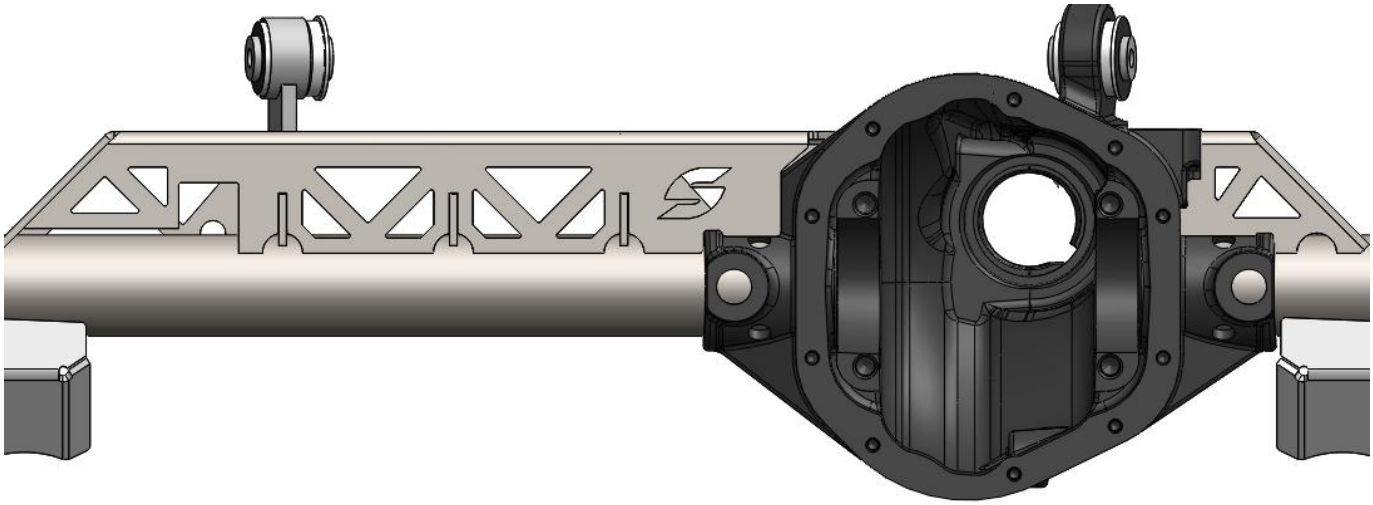
Revisions

Rev.	Description	Date	Approved
A	Initial Release Per ECO 16-045	4/4/16	A.S.
B	Revised Per ECO 18-013	2/27/18	A.S.

Jeep JK Dana 44 and 30 Front Axle Truss

Axle Truss Installation Instructions

Applications:
2007-2016 Jeep JK with Dana 44 or Dana 30 Front Axle



	TITLE: JEEP JK FRONT AXLE TRUSS INSTALLATION INSTRUCTIONS	
SIZE: A	DWG NO: 8012-15/16-INST	REV: B
	SCALE: N/A	PAGE 1 OF 17

Thank you for purchasing the best aftermarket products available for your vehicle. We strongly feel that the parts you are about to install should meet or exceed your expectations for performance. Proper assembly is critical to the performance of these components and the vehicle as a whole. Please take the time to carefully read these instructions and familiarize yourself with the installation procedure before working on your vehicle. If you have any questions PLEASE contact Synergy Manufacturing BEFORE beginning installation. Thanks again for supporting Synergy – enjoy the performance benefits of the best aftermarket products available for your vehicle!

Synergy Manufacturing
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Modifying or otherwise altering vehicle components may cause the vehicle to handle differently than originally designed. It is the driver's responsibility to familiarize themselves with the performance and handling characteristics of the modified vehicle. Vehicles with larger diameter than stock tires must be driven carefully and cannot be expected to perform as stock or meet OEM performance with regard to handling, braking or crash performance. Ensure all replacement components are compatible with vehicle capacities so as not to overload components, especially tires. It is up to the individual to ensure that the vehicle and all components are compatible with the intended vehicle use, including load ratings, road conditions, and driver abilities. Thorough and frequent vehicle inspections are recommended to ensure a safe and reliable state of readiness, especially after off-highway use.

Parts List

8012-15 JK DANA 44 FRONT AXLE TRUSS		
QTY	**Part Number**	**Description**
1	801215-10	PASSENGER SIDE FORMED AXLE TRUSS
1	801215-11	DRIVER SIDE FORMED AXLE TRUSS
1	801215-12	PASSENGER SIDE UPPER CONTROL ARM BUSHING AXLE MOUNT
3	801215-04	JK AXLE TRUSS CENTER PLATE
2	4326-02	UPPER CONTROL ARM DUAL DUROMETER BUSHING (DDB) 12MM

8012-16 JK DANA 30 FRONT AXLE TRUSS		
QTY	**Part Number**	**Description**
1	801216-01	PASSENGER SIDE FORMED AXLE TRUSS
1	801216-02	DRIVER SIDE FORMED AXLE TRUSS
1	801215-12	PASSENGER SIDE UPPER CONTROL ARM BUSHING AXLE MOUNT
3	801215-04	JK AXLE TRUSS CENTER PLATE
2	4326-02	UPPER CONTROL ARM DUAL DUROMETER BUSHING (DDB) 12MM

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.

- It is highly recommended that this Truss be installed by an experienced welder/fabricator. Incorrect installation can result in a warped or otherwise damaged front axle housing.

- The pictures in the instructions are of an axle housing removed from the vehicle. This was done for image clarity. The axle housing does not need to be removed from the vehicle, but it does make installation easier.

Tools Needed

- Basic hand tools (wrenches, sockets, hammer, etc.)
- Bushing/Ball joint press or similar tool for bushing removal/install
- Metal cutting tool (Sawzall, die grinder, angle grinder, etc.)
- Metal cleaning tool (sandpaper, die grinder, angle grinder, etc.)
- Welder with capability of welding 3/16” steel
- Spray paint

Estimated Installation Time

3-5 Hours

Pre-Installation Checklist

☐ Is your current axle housing in good shape and not bent?

☐ Are you planning on installing an aftermarket track bar relocation bracket? Now is a good time.

☐ Have you installed inner ‘C’ gussets yet? Now is a good time.

☐ Have you sleeved your axle housing yet? Now is a good time.

INSTALLATION

The minimum disassembly required to install the Truss is as follows. Additional disassembly will potentially make installation easier.

1. Make sure vehicle is in Park and Emergency Brake is set. Lift front of vehicle and support frame with jack stands.

2. Remove both front upper control arms.

3. Removing the Track Bar, Drag Link, Tie Rod and Steering Stabilizer will make installation easier but it is possible to install the Truss without removing these components.

4. Remove stock passenger side front axle upper control arm bracket from Axle Housing. Using a Sawzall or cutoff wheel to remove the bracket works well. After the bracket is removed, clean up the area using a grinding disk, flapper wheel, or sander. See **Figures 1 and 2**.

Figure 1. Passenger Side Front Axle Upper Control Arm Bracket

Figure 2. Upper Control Arm Bracket Removed and Cleaned Up

5. Test fit both sides of the Truss, with the braces included, to make sure no additional material removal is required. If Truss fits well, then mark the areas to be welded on the housing. See **Figures 3 and 4.**

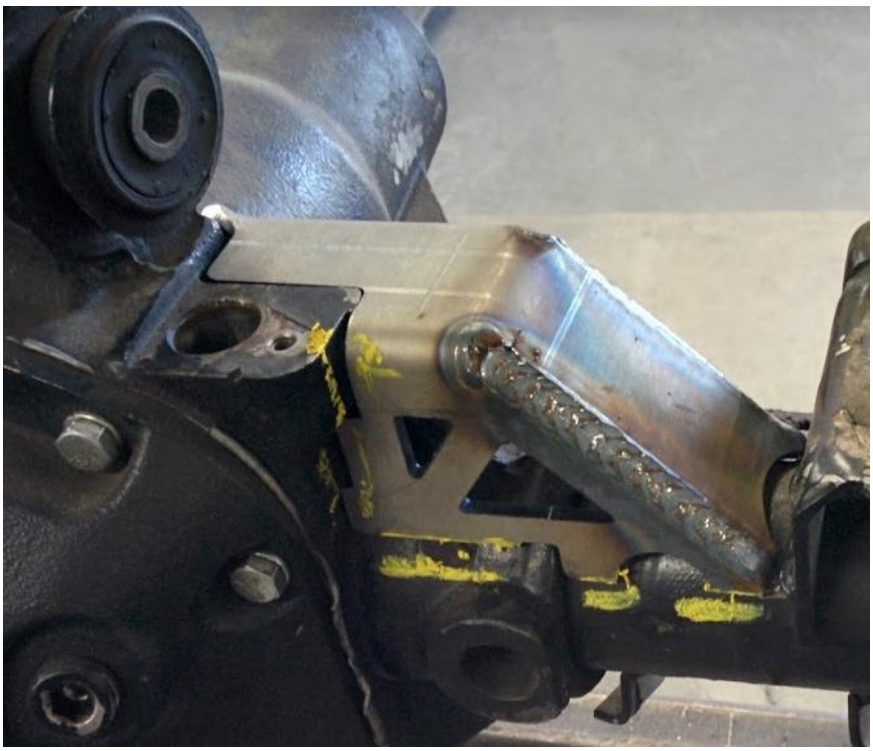

Figure 3. Driver Side Truss Test Fit and Marked (Dana 44 Shown)

Figure 4. Passenger Side Truss Test Fit and Marked

6. After marking the areas where the Truss meets the Axle Housing, remove the Truss and clean marked areas down to bare metal. See **Figures 5 and 6.**

Figure 5. Truss Removed, Showing Areas to Clean

Figure 6. Axle Cleaned to Bare Metal

7. Next, the Truss bend seams can be welded together. This is a good chance to verify your weld settings. **See Figures 7 and 8.**

Figure 7. Welding Truss Bend Seams

Figure 8. Welded Truss Bend Seams

8. Once the Axle Housing has been cleaned to bare metal, install the passenger side of the Truss WITH the 3 Center Plates. Make sure the Truss is in the correct location. The easiest way to ensure that the Truss is in the correct location is to make sure it is pushed all the way towards the Center Section in the middle of the axle and then rotated forward on the axle tube until the Truss contacts the Center Section and cannot rotate on the axle tube any farther. At this point the Truss should be parallel to the Axle Housing and meet the cast Center Section correctly. Tack weld the three Center Plates, one tack on each side. See **Figure 9.**

Figure 9. Center Plates Tack Welded

9. Next, carefully remove the Truss by lifting it straight up. The three Center Plates should not move. See **Figure 10.**

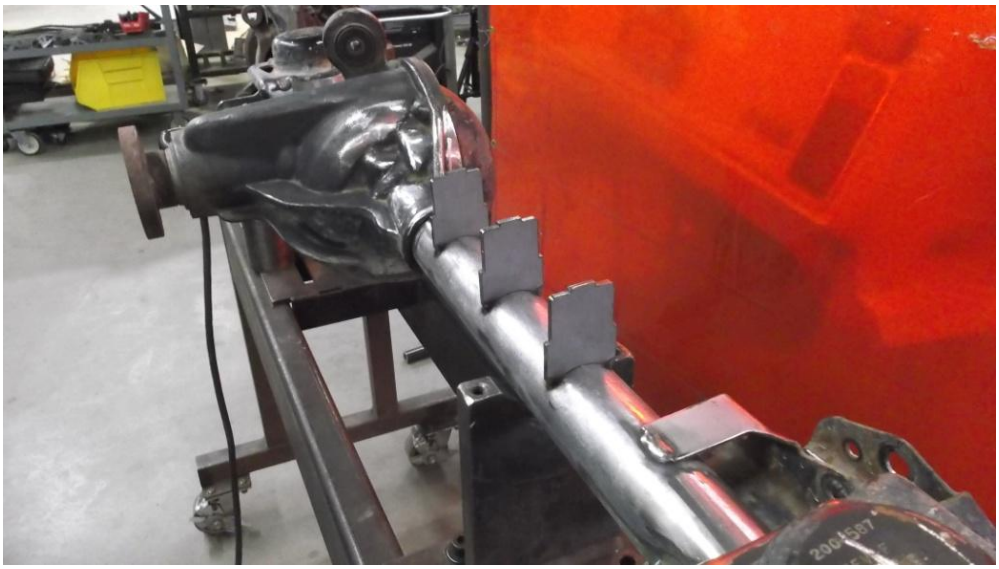

Figure 10. Tack Welded Center Plates

10. Next, carefully fully weld the Center Plates. The Truss can be used as a fixture to maintain the alignment of the plates during welding. See **Figure 11.**

Figure 11. Truss Used as a Fixture

11. Once the Center Plates have been fully welded, place both sides (passenger and driver) of the Truss back on the axle tube. Tack the Truss in several places on each side, alternating sides that are tacked. See **Figures 12 and 13.**

Figure 12. Front Side of Axle Truss Tacked

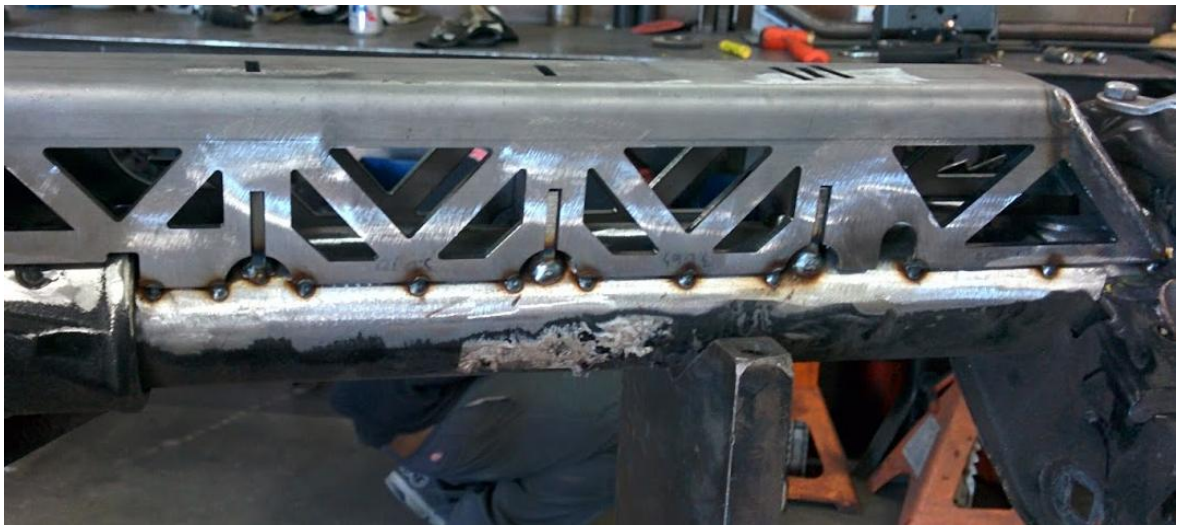

Figure 13. Back side of Truss Tacked

12. Once both sides are tacked, you may begin finish welding the Center Plates to the Truss. See **Figures 14 and 15.**

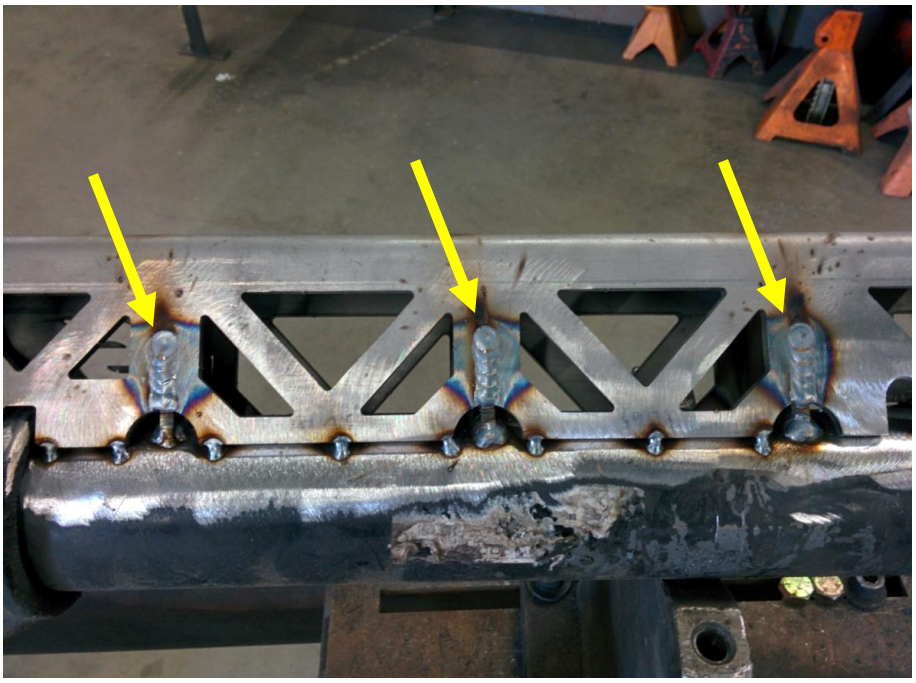

Figure 14. Center Plate Sides Welded to Truss

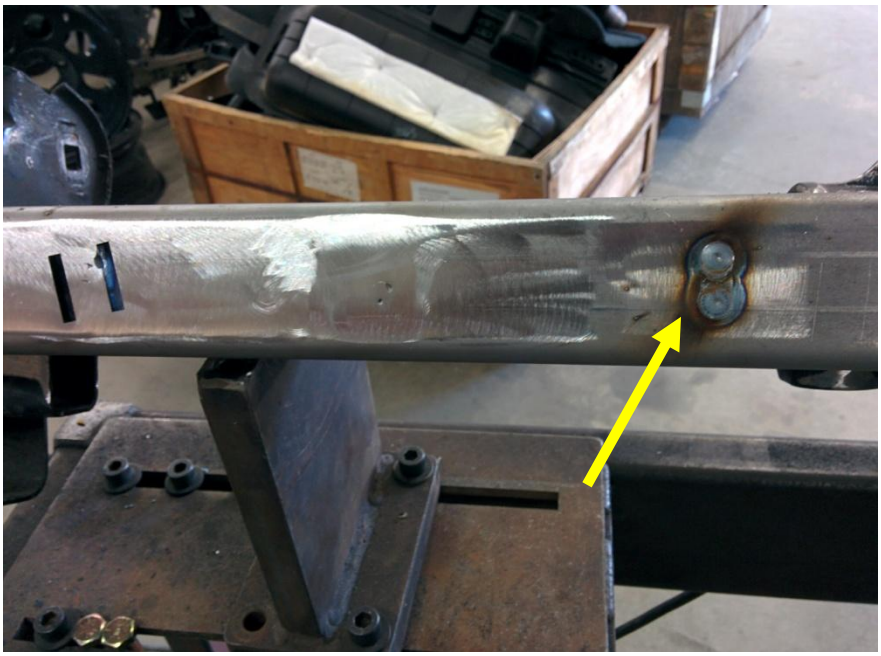

Figure 15. Center Plate Tops Welded to Truss

13. Next finish weld the Truss to the Axle Housing. It is recommended to go slowly and do small sections at a time to let the housing cool down between passes and alternate sides. It is very important not to get one section of the Axle Housing much hotter than the rest – this can result in a bent Axle Housing. See **Figures 16 and 17.**

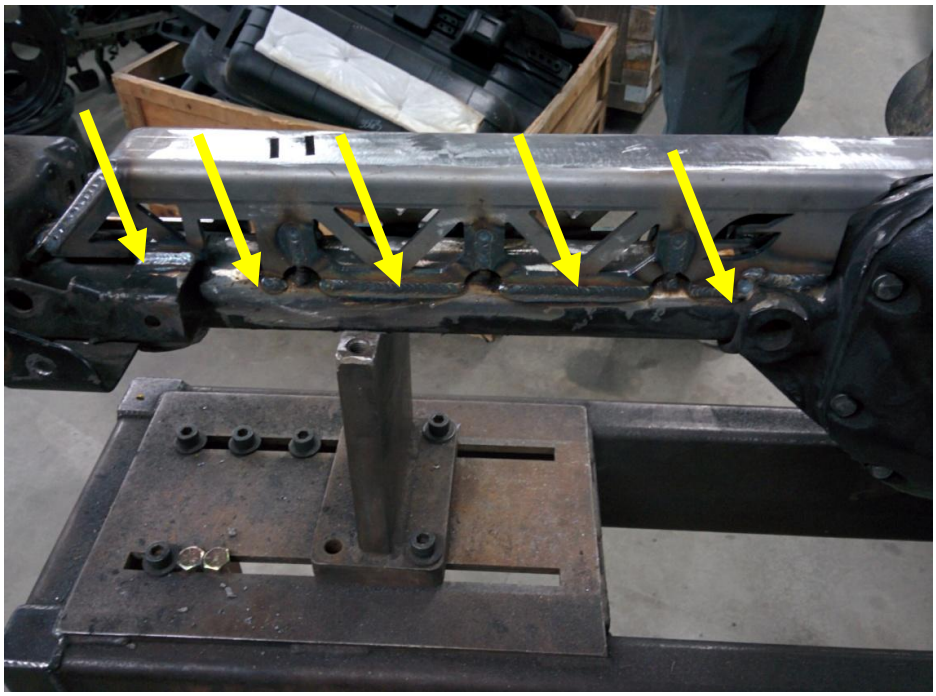

Figure 16. Weld Locations Between Truss and Axle Housing

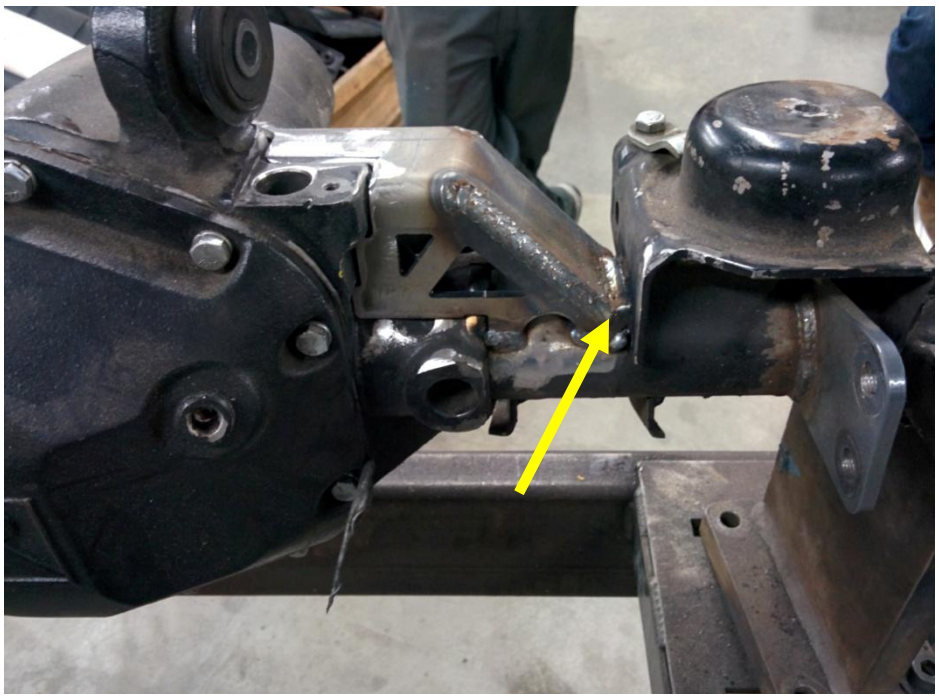

Figure 17. Weld Location Between Truss and Coil Mounts

14. Next is welding the Truss to the axle Center Section. This is considered optional. The Center Section is made of cast iron and can be difficult to weld. Ideally the casting should be heated prior to welding and TIG welded with a high nickel content filler rod. It is possible to MIG or stick weld the truss to the center section, but welds will tend to be porous and of low quality. It is important not to get the Center Section too hot, and very important to let it cool slowly. It is best to wrap the area immediately after welding in a welding blanket to help retain heat. See **Figure 18.**

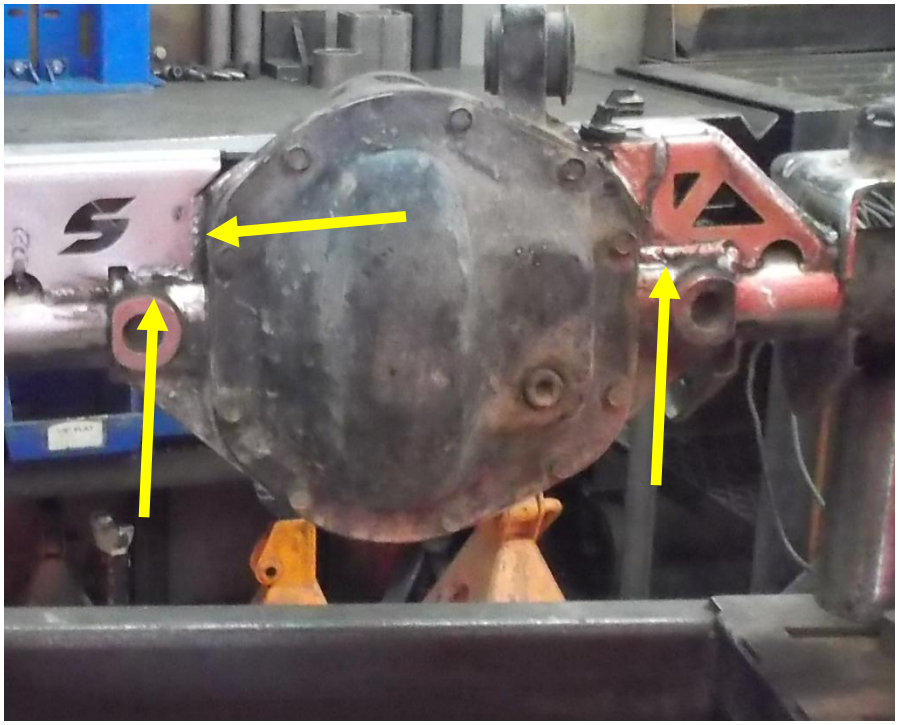

Figure 18. Truss Welded to Center Section

15. Once the Truss is fully welded to the Axle Housing, place the Bushing Mount into its holes on the Passenger Side Truss. It is symmetrical and not directional. Fully weld to the Truss. See **Figure 19.**

Figure 19. Bushing Mount Welded to Truss

- Next, paint the entire Axle making sure to cover any bare metal to prevent rust. Several coats of paint are recommended. See **Figure 20.**

Figure 20. Painted Front Axle Housing

- Next press the two Upper Control Arm bushings into the Axle. The bushings are pressed in from the Driver side to the Passenger side. The bushings will go into the housings until they hit the taper approximately 1/3 of the way along the outer shell. This is normal. The bushings are an OEM style replacement and have the same dimensions as stock. See **Figures 21 and 22.**

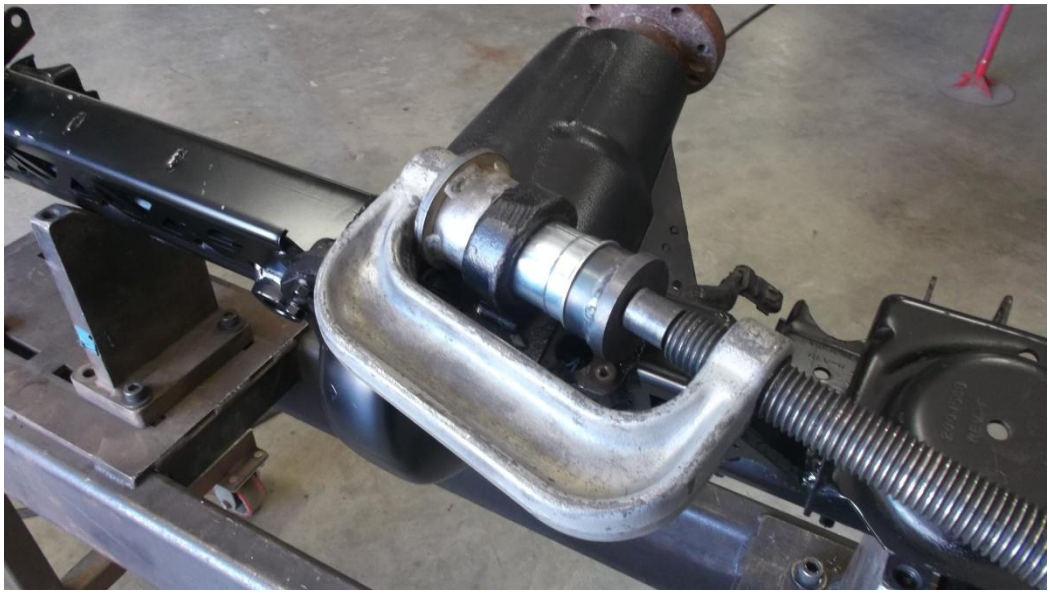

Figure 21. Installing Upper Control Arm Bushing with Ball Joint Press

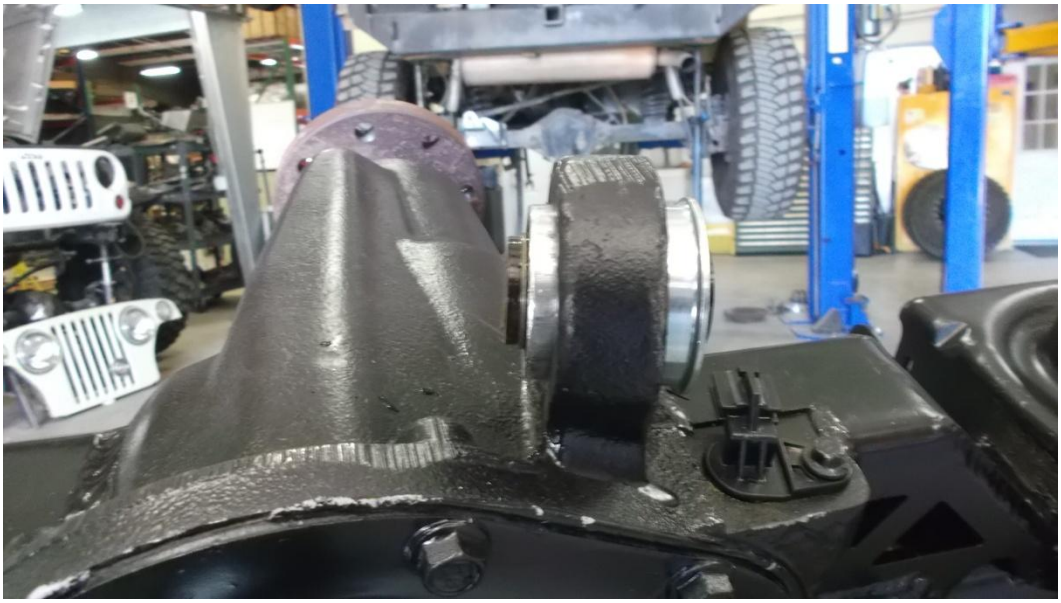

Figure 22. Correctly Installed and Seated Bushing

- Reinstall any parts removed from vehicle in order to install Truss. It is recommended that you cycle the front suspension (remove the springs and move the axle all the way up and down) in order to verify that there are no clearance issues.

Installation is Complete!

Post-Installation Checklist

☐ Did you remember to torque all the hardware and install all the cotter pins?

☐ Make a stop at the alignment shop. Tires are expensive and can get ruined by a bad alignment. Often, if the alignment is good the shop will not charge you.

☐ Did you find any worn out parts during the install that should be replaced? Get the new parts on order!

☐ Don’t forget to do a bolt check again after a few hundred miles of driving.