**WORK INSTRUCTION OVERVIEW**

**WARNING**
- **DO NOT ATTEMPT THIS PROCEDURE IF YOU DO NOT HAVE PROPER TOOLS, TRAINING, AND FACILITIES.**
- Never consider using a two-post lift that is not certified according to ANSI/ALI ALCTV-2011 or ANSI/UL 201.(autolift.org)
- Read and follow all instructions provided when installing this product. Failure to do so may result in placing occupants at risk of serious injury or death.
- To protect bystanders and the service technician(s), shut vehicle off, remove the Ignition Key and secure vehicle to prevent unintended movement.
- Never operate the vehicle in excess of manufacturer’s specifications.

**CAUTION**
- For safety and long life of your Spartan Locker, it is important that your tire diameters are as close to identical as possible.
- Differing tire sizes can cause premature wear to your Spartan Locker, shortening its life and causing possible damage to your differential.
- Measure each tire regularly to make sure that they match from the ground to the top of the wheel, adjusting tire pressure as necessary.

**NOTICE**
- It is recommends that this Spartan Locking Differential accessory be accompanied with the Warn Locking Hub accessory to reduce premature wear.
- Please be aware that the Spartan Locker is designed to fit open carriers only. It will not install into any type of limited slip carrier.

**TOOLS REQUIRED**
- 6 mm Allen Wrench
- 10 mm Allen Wrench
- 12 mm Socket
- 14 mm Socket
- 19 mm Socket
- 21 mm Deep Well Socket
- 50 mm Socket
- Pliers / Wire Cutter
- Ball Peen Hammer
- Dowel Pin Driver
- Protective Eye-wear
- Pry Bar (Large)
- Pry Bar (Thin)
- Socket Wrench
- Torque Wrench (Ft-Lbs)
- Torque Wrench (Nm)

**TORQUE SPECIFICATION**
Tighten each fastener to the torque specification below:
- **Front Spindle Nuts** – 54 to 68 N•m (40 to 50 ft. lbs.)
- **Front Brake Backing Plate Bolts** – 34 to 47 N•m (25 to 35 ft. lbs.)
- **Front Brake Caliper Mounting Bracket Bolts** – 78 to 88 N•m (57 to 65 ft. lbs.)
- **Front Differential Cover Bolts** – 16 to 20 N•m (12 to 15 ft. lbs.)
- **Front Differential Drain Plug** – 27 to 40 N•m (20 to 30 ft. lbs.)
- **Front Differential Filler Plug** – 20 to 27 N•m (15 to 20 ft. lbs.)
- **Front Differential Bearing Cap Bolts** – 88 to 108 N•m (65 to 80 ft. lbs.)
- **Ring Gear Bolts** – Incrementally 40, 60, 80 then 90 N•m (30, 44, 59 then 66 ft. lbs.)

**KIT COMPONENT TABLE**

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Kit Number S-0502AUA00041N
INSTALLATION PROCEDURE

1. Position the vehicle on a hoist and raise to a comfortable work height. Refer to Operator’s Guide for proper lifting locations.

2. Remove the front differential drain plug with a 10 mm Allen wrench and allow the fluid to drain.

3. Remove front wheel and tire with a 21 mm socket.

4. Remove (6) 6 mm Allen head bolts.

**NOTICE** This procedure includes the removal and installation of the recommended Warn Locking Hub accessory in the following steps.

5. Remove (6) 14 mm drive flange bolts.

6. Flatten all outer spindle nut, toothed lock washer tabs.
7. Remove (1) outer spindle nut, (1) toothed lock washer and (1) inner spindle nut with a 50 mm socket.

8. Remove (2) brake caliper mounting bracket bolts using a 19 mm socket.

9. Use caution removing brake rotor, hub and bearings. Be sure to keep all parts in their original location and orientation.

10. Remove (6) 14 mm backing plate bolts.

11. Remove wheel bearing spindle.

12. Pull front axle shaft assembly out until you feel it disengage the differential.

   Then repeat all previous steps on opposite side, before going to the next step in this procedure.

13. Remove the master tie rod assembly cotter pin and castle nut with a 19 mm socket. Separate and secure it forward out of the way of the differential cover.
14. Remove (10) 12 mm differential cover bolts.

15. Mark differential bearing caps so they can be reinstalled in their original orientation, then remove (4) bearing cap bolts with a 19 mm socket.

16. Rotate the differential into a position to pry on the casting. Then gently remove the differential from the axle assembly.

17. Clean the axle and cover sealing surfaces.

18. Remove ring gear from carrier by removing all but (2) bolts on opposite sides with a 14 mm socket. Using a hammer, lightly tap these (2) bolts to separate the ring gear from the carrier. Then remove the last (2) bolts.

**CAUTION** The Ring Gear bolts are hardened and left hand thread. Failure to remove them properly may result in shearing the bolt head.

19. Remove the cross pin shaft retaining pin, then remove the cross pin shaft.

20. Remove original side gears, pinion mate gears and thrust washers and discard.

**NOTICE** Do not use thrust washers with this Spartan Locker kit, a potential risk to property and/or equipment damage may result.
21. Sub-assemble (4) alignment pins with (4) springs, then install
(2) assemblies into each driver and retain with supplied wires.

22. Install side couplers into differential carrier case.

23. Install (2) spacers, one into each driver as shown.

24. Install (2) drivers into differential carrier case as shown.

25. Remove (4) wire retainers, allowing the pin assemblies to extend fully into the seating notches of the opposite driver. Align drivers and install cross pin shaft.

**NOTICE** The cross pin shaft supplied in this kit is multi-use. Verify cross pin shaft, to retaining pin fit before installation to avoid part damage.

26. Push retaining pin into cross pin shaft until fully seated.

27. Clean and apply a few drops of Loctite 242 to the end of each ring gear bolt.
28. Install the ring gear to axle carrier. Torque bolts incrementally, in a criss-cross pattern, gradually increasing torque until the specifications are met.

**CAUTION** The ring gear bolts are hardened and **left hand thread**. Failure to install them properly may result in part damage.

29. Install the differential carrier assembly into the axle assembly. Make sure the pinion gears mesh properly before fully seating and installing bearing caps.

30. Torque bearing cap bolts to specifications.

31. Push axles in until they engage the differential.

32. Apply a generous bead of the supplied RTV sealer to the differential cover.

33. Install (10) 12 mm differential cover bolts and torque to specifications.

34. Install wheel bearing spindle, then install (6) 14 mm backing plate bolts and torque to specifications.
35. Install hub and rotor assembly, then install (1) inner spindle nut, (1) toothed lock washer and (1) outer spindle nut and torque to specifications. Bend at least one tab on the toothed lock washer.

36. Install brake caliper mounting bracket bolts using a 19 mm socket and torque to specifications.

37. Slide the axle forward slightly and install the snap ring. Then complete the locking hub installation.

38. Install master tie rod assembly, install castle nut and torque to specifications, then install cotter pin and fold one end over nut.

39. Install front wheel and tire and torque to specifications.

40. Install differential drain plug and torque to specifications, then remove differential fill plug.
41. Fill differential with recommended fluid, reinstall fill plug and torque to specifications.