Install: Spartan Lunchbox Locker - Rear
Part Number: S-0502AUA00041N

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

- 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

- 10 mm Allen Wrench
- 11 mm Line Wrench
- 11 mm Socket
- 12 mm Socket
- 13 mm Socket
- 14 mm Wrench
- 14 mm Socket
- 19 mm Socket
- 21 mm Deep Well Socket
- 24 mm Wrench
- 29 mm Wrench
- 36 mm Socket
- 50 mm Socket
- Pliers / Wire Cutter
- Ball Peen Hammer
- Bearing Puller
- Bearing Press
- Granite Table
- Height Gauge
- Pliers
- Dowel Pin Driver
- Protective Eye-wear
- Pry Bar (Large)
- Pry Bar (Thin)
- Slide Hammer (5 lbs.)
- Socket Wrench
- Torque Wrench (Ft-Lbs)
- Torque Wrench (Nm)

TORQUE SPECIFICATION

Tighten each fastener to the torque specification below:

- Rear Axle Crown Nuts – 54 to 68 N•m (40 to 50 ft. lbs.)
- Rear Brake Backing Plate Bolts – 34 to 47 N•m (25 to 35 ft. lbs.)
- Rear Brake Drum Screws – 6 to 12 N•m (4 to 9 ft. lbs.)
- Rear Differential Cover Bolts – 16 to 20 N•m (12 to 15 ft. lbs.)
- Rear Differential Drain Plug – 27 to 40 N•m (20 to 30 ft. lbs.)
- Rear Differential Filler Plug – 20 to 27 N•m (15 to 20 ft. lbs.)
- Rear 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

Kit Number S-0502AUA00041N

<table>
<thead>
<tr>
<th>Kit Component</th>
<th>Description</th>
<th>Qty</th>
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<tbody>
<tr>
<td>Side Couplers</td>
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<td>2</td>
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<tr>
<td>Drivers</td>
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<tr>
<td>Spacers</td>
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<tr>
<td>Alignment Pins and Springs</td>
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<td>4</td>
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<tr>
<td>Cross Pin Shaft</td>
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<tr>
<td>Wire Retainers</td>
<td></td>
<td>4</td>
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</table>
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 Rear Differential Drain Plug and allow to drain completely.

3. Remove Rear Wheel and Hub Dust Cap.

4. Remove Rear Brake Drum Retaining screw, then remove the Brake Drum.


6. Use a puller to remove the Wheel Stub Hub from the Rear Axle.

⚠️ CAUTION ⚠️ Securely grip the puller and hub while tapping with a hammer. This will prevent the puller and hub from falling on release and potentially injuring yourself or bystanders.

NOTICE The Initial Dealer Kit you received, contains (10) Hub Dust Caps (P/N-0641920) in the event one is damaged during removal.
7. Remove (6) bolts from Axle Retainer. Note that the front and rear bolts (circled in red) are different from the others bolts and require the lock washers on re-assembly.

8. Remove the brake line from the Brake Backing Plate and install cap to prevent fluid loss.

9. Using a brass punch and hammer, lightly tap the Brake Backing Plate to separate, then securely hang off to the side of the wheel well.

10. Retain the shims from behind backing plate and note their re-install order.

11. Re-install the Wheel Stud Hub loosely, then install a slide hammer to (3) Wheel Studs as shown.

12. Remove the Axle and Bearing Assembly.

13. Repeat these steps on the opposite side. Once both axles have been removed, proceed to next step.

**WARNING** It is extremely important to keep bearing caps, bearings, races, axles and shims in their original position with original mating parts. Failure to do so may result in damage to the vehicle and/or components involved in this procedure, placing occupants at risk of serious injury or death.
14. Remove (10) Rear Differential Cover Bolts, then use a thin pry bar to remove the Differential Cover.

15. Mark Differential Bearing Caps as shown, so as not to lose original position or orientation. These must be re-installed in the same position and orientation.

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16. Remove (4) Differential Bearing Cap Bolts then gently pry out the Carrier as shown.

17. 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. |

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

19. 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. |

**DISCARD**
20. Sub-assemble (4) alignment pins with (4) springs, then install (2) assemblies into each driver and retain with supplied wires.

21. Install side couplers into differential carrier case.

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

23. Install (2) drivers, with spacers into differential carrier case. Then install the rear axle spacer before installing the cross pin.

24. 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.

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

26. Clean and apply a few drops of Loctite 242 to the end of each ring gear bolt.
27. 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.

28. Clean the Rear Axle Cover mating surface, then install Carrier into the Rear Axle Housing.

29. Install both Differential Carrier Bearing Caps in original location and torque to specifications.

30. Clean the sealing surface of the Rear Cover, then apply a generous bead of RTV sealer.

31. Install the Rear Cover with (10) bolts making sure to re-install the Brake Line Bracket. Then torque all bolts to specifications.

32. Install the Rear Axle, and fully seat the bearing and race. Add grease if necessary.

33. Install the Shims retained from earlier, in the same order and orientation.

**WARNING** It is extremely important to keep bearing caps, bearings, races, axles and shims in their original position with original mating parts. Failure to do so may result in damage to the vehicle and/or components involved in this procedure, placing occupants at risk of serious injury or death.
34. Install the (2) Brake Backing Plate bolts noted earlier as shown, then install the Brake Backing Plate.

35. Secure the Axle Retainer with (2) lock washers and (2) lock nuts at the front and rear positions. Then install the (4) remaining bolts with (4) nuts only, and torque all fasteners to specifications.

36. Remove cap, then install and tighten the Brake Line to the Brake Backing Plate.

37. Line up the keyed joint on the Wheel Stud Hub and install to Axle Shaft.

38. Install washer and Rear Axle Crown Nut and torque to specifications. Always rotate nut in a clockwise direction to line up cotter pin path.

39. Install the Cotter Pin and fold ends, then install the Hub Dust Cap.
40. Install the Brake Drum and secure with (1) screw. Then install the Tire and Wheel, torquing the Lug Nuts to specifications. Repeat these steps on the opposite side. Once both tires have been installed, proceed to next step.

41. Bleed the Rear Brakes. Refer to Section 15 in the ROXOR Service Manual for more details on the brake system.

42. Install and torque Rear Differential Drain Plug to specifications.

43. Fill differential with recommended fluid, reinstall fill plug and torque to specifications.