Install: OX Locking Rear Differential
Part Number: S-0502EUA00021N

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.

NOTICE The Initial Dealer Kit you received, contains (10) Hub Dust Caps (P/N: S-0641920) in the event one is damaged during removal.

TOOLS REQUIRED

- 10 mm Allen Wrench
- 11 mm Line Wrench
- 11 mm Socket
- 13 mm Socket
- 14 mm Socket
- 14 mm Wrench
- 19 mm Socket
- 21 mm Deep Well Socket
- 24 mm Wrench
- 29 mm Wrench
- 36 mm Socket
- Bearing Press
- Bearing Puller
- Brass Hammer
- Granite Table
- Height Gauge
- Pliers
- 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:
- Cable Mount Cylinder Bracket – 3 to 4 N•m
- Cable Mount Cylinder – 8 to 10 N•m
- Cable Length Jam Nut – 8 to 10 N•m
- Rear Axle Crown Nuts – 54 to 68 N•m
- Rear Brake Backing Plate Bolts – 34 to 47 N•m
- Rear Brake Drum Screws – 6 to 12 N•m
- Rear Differential Cover Bolts – 16 to 20 N•m
- Rear Differential Drain Plug – 27 to 40 N•m
- Rear Differential Filler Plug – 20 to 27 N•m
- Rear Differential Bearing Cap Bolts – 88 to 108 N•m
- Ring Gear Bolts – Incrementally 40, 60, 80 then 90 N•m

KIT COMPONENT TABLE

Kit Number S-0502EUA00021N

<table>
<thead>
<tr>
<th>Kit Component</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROXOR Locker Installation Kit</strong></td>
<td>Black RTV Sealer w/ Nozzle</td>
<td>1</td>
</tr>
<tr>
<td><strong>OX Locker Electric Shift System</strong></td>
<td>Electric Actuator, Cable Mount Cylinder w/ Bracket</td>
<td>1</td>
</tr>
<tr>
<td><strong>OX Locker Splash Shield</strong></td>
<td>Dielectric Grease</td>
<td></td>
</tr>
<tr>
<td><strong>Fastener Kit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OX Locker Rear Differential Cover w/ Shift Fork</strong></td>
<td></td>
<td>1</td>
</tr>
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<td><strong>OX Locker Rear Differential</strong></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
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REMOVAL PROCEDURE

Remove Rear Axle Carrier

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 Dust Cover.

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.
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 and discard bolts and cover.

15. Check and record the current backlash before removing the Rear Axle Carrier.

16. 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.

**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.

17. Remove (4) Differential Bearing Cap Bolts. Rotate the differential into a position to pry on the casting. Then pry the differential from the axle assembly.

18. Remove Ring Gear from original Carrier by removing all but (2) bolts on opposite sides. Using a hammer, lightly tap these (2) bolts to separate the Ring Gear from the Carrier.

**CAUTION** The Ring Gear bolts are hardened and left hand thread. Failure to remove them properly may result in shearing the bolt head.
BENCH PROCEDURE
Measure, Record and Build Up new Rear Axle Carrier

1. Using a granite table and height gauge, set-up the new Carrier to dimensionally match the original carrier. The two critical dimensions are the Ring Gear Flange height and the overall Carrier height.

2. Measure the difference between the new and original Ring Gear Flange height. Identify and record the difference between the two heights.

3. Add or subtract shims to the Driver’s side of the carrier until the two heights are identical.

4. Measure the difference between the overall height of the new Rear Axle Carrier and original. Identify and record the difference between the two heights.

5. Add or subtract shims to the Passengers side of the carrier until the two heights are identical.

6. Clean and apply a few drops of the supplied Loctite 263 to the end of each Ring Gear Bolt.
7. Install the Ring Gear to the new Rear 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.

3. Install both Differential Carrier Bearing Caps and torque to specifications.

4. Check to ensure that backlash is between .005" - .010" (.13 mm - .25 mm)

5. Use the supplied gear marking compound to check for proper gear mesh.

**INSTALLATION PROCEDURE**

1. Install Vent Tube Splash Shield in orientation shown, push in until fully seated.

**CAUTION** Correct installation of Vent Tube Splash Shield is critical to prevent axle lube leakage.

2. Clean the Rear Axle Cover mating surface then test fit the new Carrier into the Rear Axle Housing.
6. Test fit the OX Locker Rear Cover making sure the Shift Fork properly engages the Lock Ring.

7. Clean the sealing surface of the OX Locker Rear Cover, then apply a generous bead of the supplied RTV sealer.

8. Install the OX Locker Rear Cover with (2) supplied bolts in positions shown, again making sure the Shift Fork properly engages the Lock Ring.

9. Install the supplied Rear Brake Line Bracket with (2) supplied bolts in the position and orientation shown.

10. Install the other (6) supplied bolts and torque to specifications. Then remove any excess sealer.
11. Install and torque Rear Differential Drain Plug to specifications.

12. Install the Rear Brake Line to the new bracket with the supplied bolt.

13. Install the OX Locker Actuator Cable (short barrel end) and torque to specifications. The core cable (1/4-28 thread) does not thread into the Cover Piston and Shift Fork.

14. Route the OX Locker Actuator Cable as shown.

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

16. 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.

17. Install the (2) Brake Backing Plate bolts noted earlier as shown, then install the Brake Backing Plate.
18. 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.

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

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

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

22. Install the Cotter Pin and fold ends, then install the Dust Cap.

23. 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.
24. Bleed the Rear Brakes. Refer to Section 15 in the ROXOR Service Manual for more details on the brake system.

3. Install the Cable Mount Cylinder and Bracket to the back side of the Body Vertical Crossmember using the (4) supplied fasteners and torque to specifications.

INSTALLATION PROCEDURE

1. Using the template provided, mark and drill (4) holes for mounting the Electric Actuator to the Body Vertical Crossmember. Then apply sealer/primer to the bare metal to prevent rusting.

4. Apply none drying lubricant to the OX Locker Actuator Cable (long barrel end), install the threaded sleeve and tighten cable length jam nut.

2. Separate the Cable Mount Cylinder and bracket from the Electric Actuator by removing (2) fasteners.

5. Adjust the static OX Locker cable length between 1/16 - 1/8" past the Cable Mount Cylinder edge as shown. Then snug the Mount Jam Nut and the Cable Length Jam Nut.
6. Reinstall the Electric Actuator to the Cable Mount Cylinder using the (2) fasteners removed earlier and torque to specifications.

9. Connect harness ground to ground stub near battery. Then remove the inline fuse and route OX Locker harness thru bulkhead.

7. Connect the supplied wire harness to the Electric Actuator, then route the harness along the left frame rail and up the driver’s side of the Engine and Transmission into the Engine Bay. Do not secure the harness at this time.

10. Remove the Deutsch conneeter from the Ignition Switch and install the red power wire into the position shown.

8. Remove one of the bulkhead grommets and install a slit/hole to route wire harness thru.

11. Reconnect the Deutsch conneeter to the Ignition Switch, remove one of the switch plates from the dash and then route the rest of the OX Locker Harness thru the opening.
12. Reinstall the inline fuse. Connect the OX Locker Switch to the harness following the color scheme listed on the switch, then install switch to dash panel. Power on the Ignition Key and verify the Electric Actuator is working. The switch will light up when the OX Locker is engaged.

13. Verify that the system is engaging and disengaging the Rear Axles properly. Add fluid to the Rear Differential and secure the OX Locker Cable and Harness before giving your ROXOR a trial test. Refer to Operator's Guide for Differential Fluid specifications and quantity.
ACTUATOR MOUNTING TEMPLATE
REAR OX LOCKER ONLY

For PROPER SCALE this document must be printed with the below parameters:
- Paper Size = 11" x 8.5"
- Orientation = Landscape
- Page Sizing = Actual Size