



INSTALLATION MANUAL

TORQ Locker for Can-Am SmartLok Differential Installation

Made in USA By:





INSTALLATION MANUAL

TORQ Locker Installation Instructions By:



INTRODUCTION

We suggest that you read these instructions before beginning your installation to familiarize yourself with the installation steps.

Installation of your new locker is accomplished by removing the differential gears from the differential case and installing the TORQ Locker™ components in their place. This type of installation can be made by the weekend mechanic who is familiar with the operation of a differential and who is able to exercise appropriate care during the installation process. Normal installation takes about two hours when these instructions are followed. They also assume that the installer is familiar with the procedures used in removing wheels, axle shafts, etc. Shortcuts should not be attempted unless the installer is very familiar with the shop manual procedures for the vehicle.

Great care has been taken in developing these instructions for the proper installation of the TORQ Locker™; however, the final results are the responsibility of the installer. After the locker is installed, the safe operation of the vehicle is the responsibility of the driver; anyone who drives it should read the Operator's Guide at the end of this manual for additional information on how to safely operate your new TORQ Locker™- equipped vehicle.



TORQ LOCKER™ PARTS LIST

- (2) Cam Gears
- (2) Springs
- (2) Axle Gears
- (1) Cross Pin
- (1) Case

TORQ Locker™ QUICK INSTALL OUTLINE

- 1.) **Prep vehicle for install:** Engage the parking brake, jack up the vehicle. Place 4 jack stands under your vehicle because the tires will need to be rotated for testing. Put the Vehicle in 4WD to secure the driveshaft.
- 2.) **Disassemble components to access the front differential:** Your vehicle may require more suspension components to be removed to access the front differential, this procedure varies by model and by aftermarket modifications.
 - a. **Remove Tires:**
 - b. **Remove Skid Plate:**
 - c. **Drain differential gear oil:**
 - d. **Pull the lower ball joint bolts :** This will allow for the knuckle to be pulled outward then the CV shafts can then be pulled out of the differential
 - e. **Remove the Shock Lower Bolts:** Use a ratchet strap to pull the shock out of the way
 - f. **Pull front Axle Shafts:** With the knuckle pulled out of the way, the axle shafts should come out with a hard tug. Be mindful of the snap rings on the ends of the axle plunging joints. Don't lose the snap rings. You can use a pry bar to ease the axle shafts out of the case, at the case
 - g. **Remove the Drivers side Brake Caliper & Axle Shaft**
 - h. **Disconnect electrical components from the Drivers side Differential Side Cover:**
 - i. **Remove the Differential mounting bolts:** This helps give you more room to work with
 - j. **Remove Differential breather tube:** Vice grips or by hand
 - k. **Remove the Driver's side Differential Side Cover:** place on a clean work surface
- 3.) **Partially Disassemble the Differential:**
 - a. **Remove the Ring Gear & Case:** Place on a clean work surface
- 4.) **Install the TORQ Locker:**
 - a. **Make Note of any shims found inside the housing:** Make sure each shim is reinstalled in the housing and on the locker case
 - b. **Remove the Tone Ring and Bearing from the Ring Gear side of the case:** Use a bearing puller or gently use flat head screwdrivers. Be careful with the Tone Ring, it can easily deform.
 - c. **Remove the OEM Ring Gear:** Clean the ring gear bolts and bolt holes with brake clean to remove any thread locker
 - d. **Bolt the Ring Gear to the TORQ Locker Case & use Red Thread Locker 272:** Torque ring gear bolts to Owner's/Shop manual specifications
 - e. **Reassemble the Differential – Reinstall any and all shims from the OEM case, Reinstall the bearing and tone ring**
 - f. **Install the Drivers Side Differential Side Cover:** Torque side cover bolts to Owner's/Shop manual specifications
 - g. **Fill the Differential with OEM specified gear oil**
 - h. **Reinstall the Axle Shafts, Shocks, Ball Joints, Tires**
- 5.) **Perform the Wheel Spin Test:** See detailed instructions later in this guide.
- 6.) **Complete Installation:** Leave the vehicle in gear, apply the emergency brake, remove the jack stands and lower the vehicle to the ground.

TORQ Locker™ INSTALLATION PHOTOS

- 1.) **Prep vehicle for install:** Engage the parking brake, jack up the vehicle. Place 4 jack stands under your vehicle because the tires will need to be rotated for testing. Put the Vehicle in 4WD to secure the driveshaft.



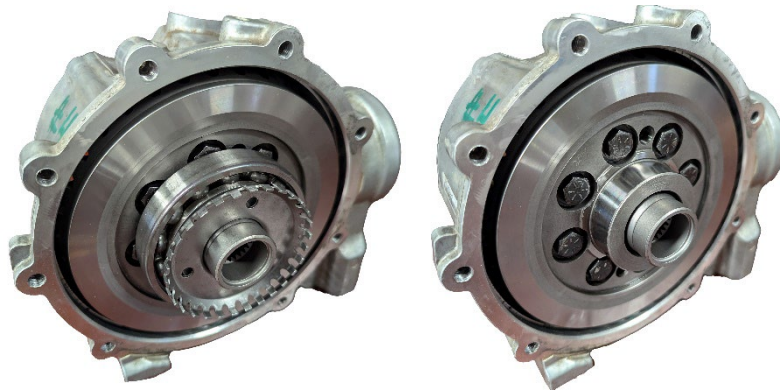
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 - e. **Remove the Shock Lower Bolts:** Use a ratchet strap to pull the shock out of the way
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 - h. **Disconnect electrical components from the Drivers side Differential Side Cover:**
 - i. **Remove the Differential mounting bolts:** This helps give you more room to work with
 - j. **Remove Differential breather tube:** Vice grips or by hand
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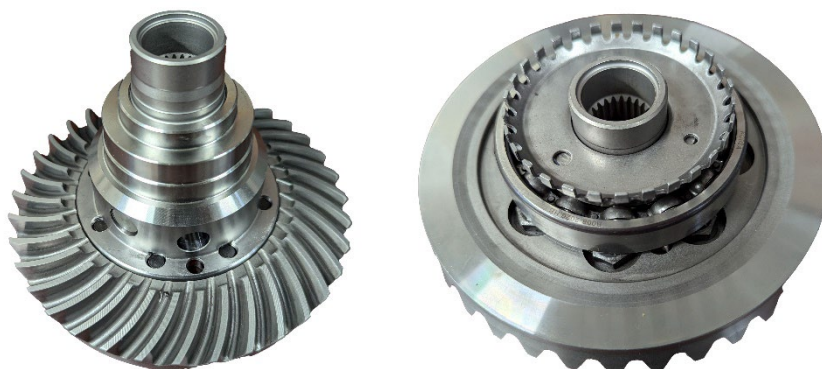
4.) **Install the TORQ Locker:**



- a. **Make Note of any shims found inside the housing:** Make sure each shim is reinstalled in the housing and on the locker case



- a. **Remove the Tone Ring and Bearing from the Ring Gear side of the case:** Use a bearing puller or gently use flat head screwdrivers. Be careful with the Tone Ring, it can easily deform.
- b. **Remove the OEM Ring Gear:** Clean the ring gear bolts and bolt holes with brake clean to remove any thread locker



- c. **Bolt the Ring Gear to the TORQ Locker Case & use Red Thread Locker 272:** Torque ring gear bolts to Owner's/Shop manual specifications
- d. **Reassemble the Differential – Reinstall any and all shims from the OEM case, Reinstall the bearing and tone ring**
- e. **Install the Drivers Side Differential Side Cover:** Torque side cover bolts to Owner's/Shop manual specifications
- f. **Fill the Differential with OEM specified gear oil**
- g. **Reinstall the Axle Shafts, Shocks, Ball Joints, Tires**

- 5.) **Perform the Wheel Spin Test:** See detailed instructions later in this guide.
- 6.) **Complete Installation:** Leave the vehicle in gear, apply the emergency brake, remove the jack stands and lower the vehicle to the ground.

Perform the Wheel Spin Test

- 1.) Jack the front or rear of the vehicle up and place on jack stands so tires are off the ground. Ensure the vehicle is stable.
- 2.) Place the vehicle in gear, in 4wd to lock the pinion.
- 3.) Tires must be installed to complete this test.
- 4.) Rotate the Drivers side tire forward until it stops against the locked drive shaft. Hold it in position and maintain moderate pressure.
- 5.) Rotate the Passenger side tire backwards. It should ratchet smoothly, with the locker clicking as the tire rotates.
- 6.) Next rotate the Drivers side tire backwards until it stops against the locked drive shaft. Hold it in position and maintain moderate pressure.
- 7.) Then, rotate the Passenger side tire forwards. It should ratchet smoothly, with the locker clicking as the tire rotates.
- 8.) Repeat steps 4-7 this time starting with the Passenger side tire
- 9.) If your locker ratchets smoothly, then you have passed the “wheel spin” test and you are ready to finish up.
- 10.) Any questions? Shoot us an email or give us a call. Info@torqmasters.com

Spin Test video

<https://www.youtube.com/watch?v=EDMEGM2nKdU>

TEST DRIVE

- 1.) After your installation is complete it's time to take your vehicle out for a test drive. Consult the Operator's Guide for detailed information on how to operate your vehicle on and off road.
- 2.) During your initial testing, take it easy the first few miles. Remember that a front rear locker-equipped vehicle will have some different handling characteristics that you will quickly adapt to. Front locker applications should see no change in handling characteristics while in 2WD. It is not recommended to test a front locker in 4WD on dry pavement.
- 3.) Try your locker on a low-traction surface like a gravel parking lot to feel how the added traction feels.
- 4.) Try adjusting your DPS to minimum and working up from there until you feel your preferred steering and handling in 4WD at various speeds and terrain.
- 5.) We find that DPS to minimum works well at slow speeds and DPS to medium or maximum works well for higher speeds.
- 6.) Note, there is a break-in period for your locker of about 100 miles after which the 'Click' noise should reduce slightly. The occasional 'Clunk' may be heard with this style of locker and should not be cause for concern.

NOTES & HELPFUL HINTS

- **Axle Seals:** Inspect while you are in the differential, now would be a good time to replace if needed
- **Differential case and bearings:** If there are any chips or cracks in the case, and/or the bearings are worn, replace them.
- **Check with your local Can-Am Dealer:** for any recalls prior to installing the TORQ Locker. If there is any front differential work to be performed under Can-Am Warranty, your dealer may be able to install your TORQ Locker at a discounted labor rate.

TORQ Locker™ WARRANTY

TORQ Locker™ TWO YEAR LIMITED WARRANTY

Torq-Masters Industries warrants each new TORQ Locker™ to be free from defects in material and workmanship under normal use and service following the date of purchase of the part for a period of two years. This warranty is limited to the manufacturer's repair or replacement of the defective parts only, providing the product, including all components and parts, is returned to the manufacturer or its authorized representative, together with proof of purchase and all relevant documentation, transportation charges prepaid. This warranty excludes labor or consequential damages or injury. This warranty excludes damage to the TORQ Locker™ as a result of driveline component failures that were not manufactured by Torq-Masters Industries Inc. The decision as to whether the defective part is to be repaired or replaced will rest solely with Torq-Masters Industries, Inc.

Any failure of the product as before described must be reported to the manufacturer within fifteen (15) days of failure and an authorization code number obtained for return of the product to manufacturer or its authorized representative. Proper proof of purchase must be furnished in order to obtain an authorization code; and this code number must be included with the relevant paperwork before mentioned. Please contact us to obtain a return authorization code.

Notes:

This warranty is in lieu of all other warranties express or implied and all other obligations or liabilities on the part of the manufacturer. The manufacturer neither assumes nor authorizes any other entity or person to assume for it any other liability in connection and sale of TORQ Lockers™

This warranty covers the original purchaser only. This warranty does not cover defects caused by any of the following: modification, alteration, repair or service of the product by anyone other than by the manufacturer or its authorized representative, physical abuse to or misuse of the product, improper diagnosis, installation or operation thereof in a manner contrary to the installation manual accompanying the product, and road, offroad or accident damage. No repair or replacement of any part made under this warranty shall be deemed to alter or extend the term of the warranty in any way.

The manufacturer disclaims any implied warranties of merchantability of the goods or fitness of the goods for any purpose. The manufacturer has no liability for incidental, consequential or special damages including, but not limited to, claims of personal injury or property damage and claims of liabilities by third parties not the original purchaser to the product. While this warranty gives specific legal rights, some States have special laws regarding warranties which regulate limitation and time periods. These rights vary from state to state and purchaser is urged to review laws of his jurisdiction in the event of a warranty question.

If the purchaser disagrees with any of the terms of this warranty, please return the purchased item to Torq-Masters Industries, Inc. within three (5) business days of notification of shipment. Buyer is responsible for all shipping charges for receipt and return of product. A decision by the purchaser to retain the item purchased will be deemed acceptance of the specific terms of this warranty.

TORQ Locker™ is 100% made in the USA.

Please direct any questions to: info@torqmasters.com

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TORQ Locker is a trademark of Torq-Masters Industries Inc.



Operators Guide

Your TORQ Locker™ is designed to provide you with dramatic improvements in traction performance. However, the safe operation of your vehicle is the responsibility of the driver, and it is suggested that all drivers carefully read this TORQ Locker™ guide.

- Do not engage 4WD, with a front TORQ Locker™, when driving on dry pavement – this will put unnecessary strain on your front axle shafts and axle joints.
- Advise anyone working on your vehicle that the vehicle is locker-equipped.
- Having the proper tire air pressure is not only essential for proper locker operation but also for driving safety. Large diameter tires are especially susceptible to creating locker problems when the tire diameters are significantly different or when tires are inflated to different pressures. Tires should always be inflated to manufacturer's specifications.
- Depending on many factors you may hear a clicking sound when you are making a turn. This is normal for automatic lockers and is a positive indication that your locker is working properly.
- Additional backlash is the nature of locker design. Due to the additional backlash you may hear a "clink" or "clunk" sound from time to time. This sound is part of normal locker operation.
- Your new TORQ Locker™ provides you with dramatic increases in traction performance. You can travel further, faster and with more traction than before. With this improved capability comes new responsibilities. You can get deeper in the woods and further up the hills than before. In case of emergencies or vehicle breakdowns it is a good practice to always travel with other off roaders for safety.