INSTALLATION MANUAL

TORQ Locker Can-Am Installation Instructions By:

Made in USA By:

INSTALLATION MANUAL

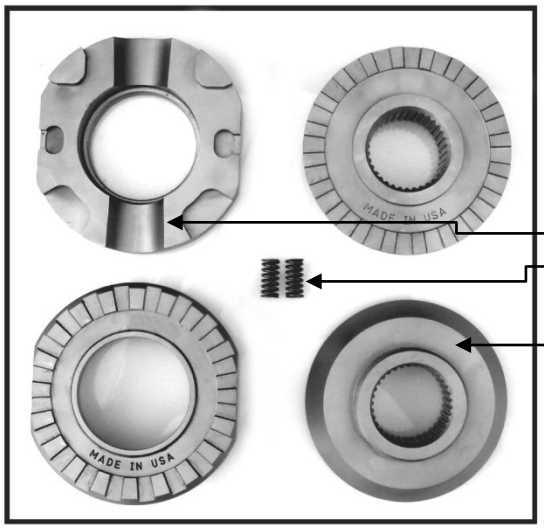
TORQ Locker Installation Instructions By:

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 three 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

Note: The TORQ Locker™ does not have spacers, as seen in The Aussie Locker™

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. **Loosen Driveshaft flange bolt:** Note – this may be a difficult bolt to remove, a ratchet wrench is helpful.
- e. **Pull the lower ball joint bolt :** This will allow for the knuckle to be pulled outward then the CV shaft can then be pulled out of the differential
- f. **Remove the Shock Lower Bolts:** Use a ratchet strap to pull the shock out of the way.
- g. **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.
- h. **Remove Differential mounting bolts:**
- i. **Disconnect Driveshaft:** Loosen the last of the driveshaft flange bolt and remove the driveshaft from the diff.
- j. **Remove Differential breather tube:** Vice grips or by hand
- k. **Remove the front Differential:** place on a clean work surface

3.) **Disassemble the Differential:**

- a. **Open the Differential Case:**
- b. **Remove the Cross Pin:** Snap Ring Plyers
- c. **Remove the Spider Gears:** Rotate the spider gears and they will fall out. Make sure to remove the Thrust Washers from the differential case – they may have fallen off back of all the spider gears. Thrust washers are NOT used in this installation.

4.) **Disable the Visco Lok**

- a. **Disable the Visco Lok:** See below for detail instructions
- b. **Note:** If you disable your Visco, and later choose to remove your TORQ Locker to go back to 3WD, you will need to buy a new or used Differential Case with a Visco. The Visco can not be enabled after disabling it, Can-Am does not sell the Visco fluid.

5.) **Install the TORQ Locker:**

- a. **Prep TORQ Locker for Install:** Apply medium grease, in a very, very thin coating, to the teeth of the gears and to the backs of the axle gears.
- b. **Install 2 Axle Gears:** Place the 2 gears in the case. Use one hand to hold the upper axle gear from falling into the middle of the case.
- c. **Install the Cam Gears:** Place the lower Cam Gear first. Note, align the Key-Way so that the pockets of the lower cam gear are facing the opening of the differential case. Slide in the Upper Cam Gear so that the Key-Ways align.
- d. **Install the 2 Springs:** Tip – Use a small flat head screwdriver to compress the spring with one end of the spring in to pocket. The spring should snap in.
- e. **Measure the Center Gap:** See detailed instructions later in this guide. Center gap between 0.150 and 0.190
- f. **Install Shims if Center Gap is too wide:** Use the shims supplied in the TORQ Locker kit.
- g. **Reinstall the Cross Pin:** Use snap ring plyers. Take care to install the snap ring without damaging it.
- h. **Reassemble the Differential Case & Install into the vehicle**
- i. **Fill the Differential with gear oil:** 2016 Maverick: 500 CC's of 75-90 Full Synthetic Gear Oil
- j. **Reinstall the Axle Shafts: **NOTE**** We suggest installing the Visco Lok side axle shaft first so you can rotate the gears in the differential. On the Visco Lok side of the diff there is a splined gear inside the Visco unit you will need to align that gear to the splined axle gear of the TORQ Locker. These two gears need to line up for the axle shaft to fully seat. If you find the Visco Lok side axle shaft is hard to install, rotate the axle shaft a quarter turn, and try again.

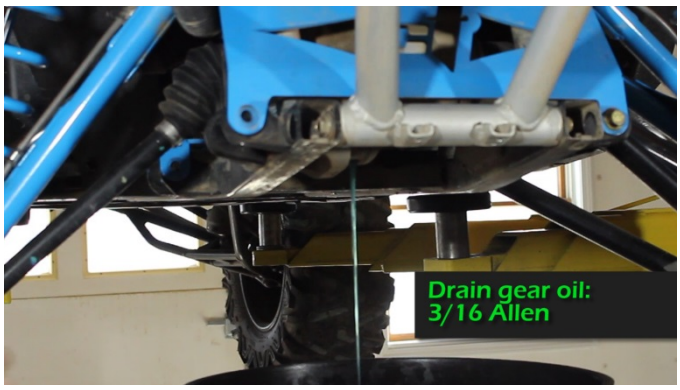
6.) **Perform the Wheel Spin Test:** See detailed instructions later in this guide.

7.) **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 DETAIL PHOTOS

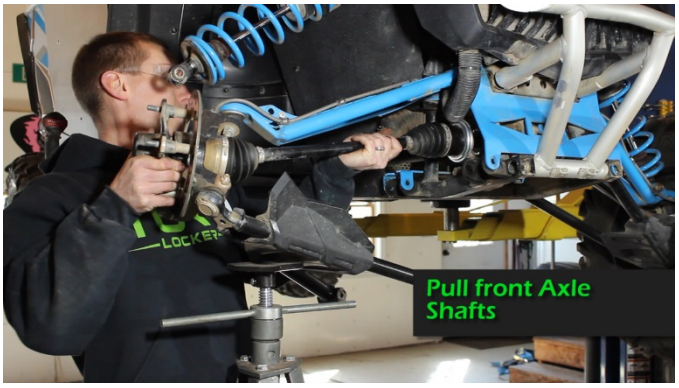
Disassemble components to access the front differential:

a. **Remove Tires:**
b. **Remove Skid Plate:**
c. **Drain differential gear oil:**



a. **Loosen Driveshaft flange bolt:** rotate the shaft so you can access the flange bolt with a ratchet wrench, then put the vehicle into 4WD. Note – this may be a difficult bolt to remove, a ratchet wrench is helpful.
b. **Pull the lower ball joint bolt :** This will allow for the knuckle to be pulled outward then the CV shaft can then be pulled out of the differential

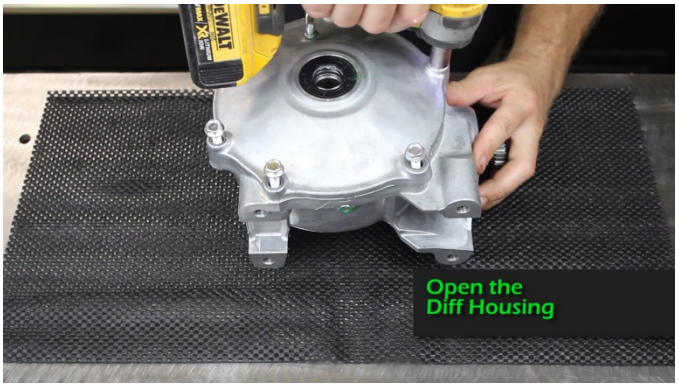
a. **Remove the Shock Lower Bolts:** Use a ratchet strap to pull the shock out of the way.
b. **Pull front Axle Shafts:** With the knuckle pulled out of the way, the axle shafts should come out with a hard tug. Be mindful of the snap rings on the ends of the axle plunging joints. Don't lose the snap rings.
c. **Remove Differential mounting bolts:**

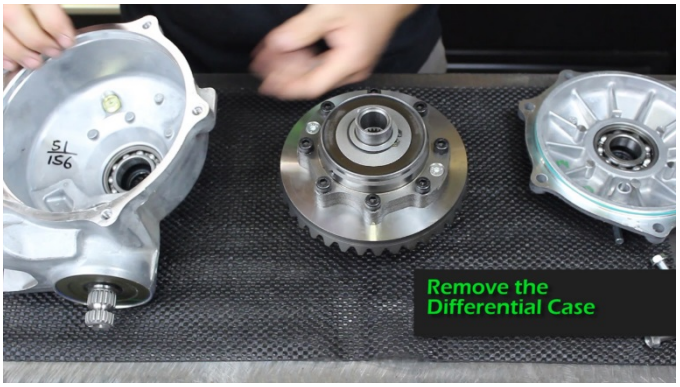


a. **Disconnect Driveshaft:** Loosen the last of the driveshaft flange bolt and remove the driveshaft from the diff.
b. **Remove Differential breather tube:** Vice grips or by hand
c. **Remove the front Differential:** place on a clean work surface

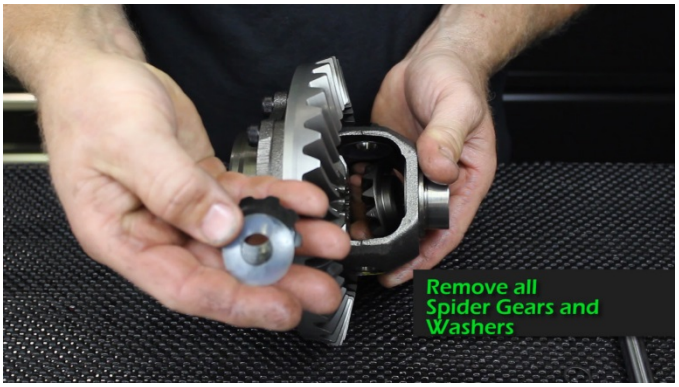
Disassemble the Differential:

a. **Open the Differential Case:**



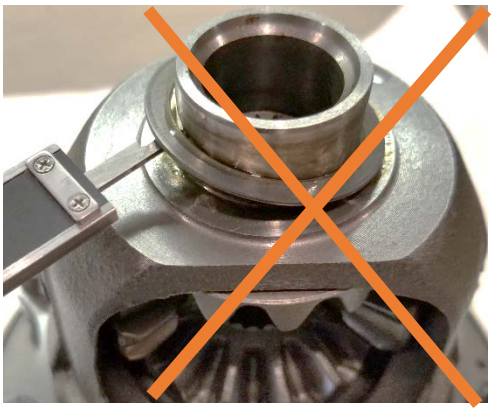


b. **Remove the Cross Pin:** Snap Ring Plyers



c. **Remove the Spider Gears & Washers:** Rotate the spider gears and they will fall out. Make sure to remove the Thrust Washers from the differential case – they may have fallen off back of all the spider gears. Thrust washers are NOT used in this installation.
   i. **Remove:** 2 Cone Washers, 2 Spider Gears, 2 Drive Spider Gears, 2 Thrust Washers
   ii. **Do NOT Discard Differential Case Shims**

DO NOT Discard these shims – these are for backlash spacing



Disable the Visco Lok

**** Updated 3/20/18****

Disabling the Visco Lok

Based on customer feedback Torq-Masters Industries highly recommends disabling your Can-Am Visco Lok when you install a TL-CANAM TORQ Locker. **Torq-Masters Industries cannot guarantee proper TORQ Locker operation if you choose to leave your Visco Lok enabled.**
Disabling the Visco is easy and only adds a few minutes to your installation time. Detailed instructions are included in this manual.

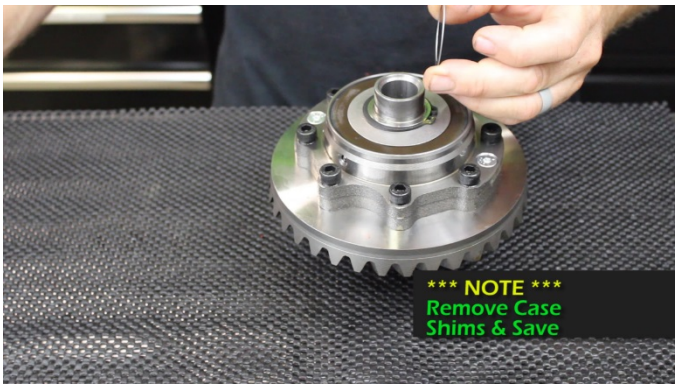
The Visco Lok can affect TORQ Locker operation negatively and cause the following symptoms:

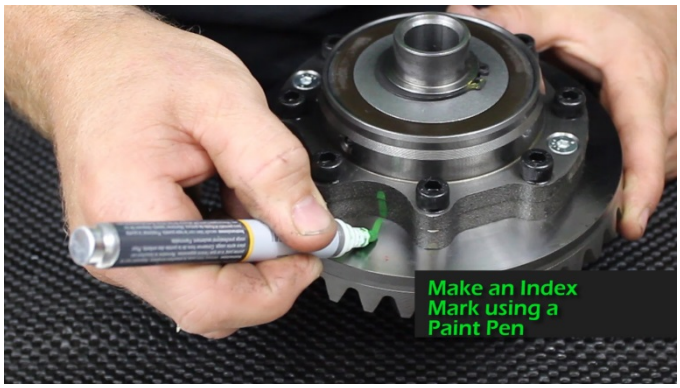
- Random steering lock up in 2WD or 4WD
- Very loud popping or ratcheting noises in 2WD or 4WD

Please Note:
If you disable your Visco Lok, and later choose to remove your TORQ Locker to go back to 3WD, you will need to buy a new or used Differential Case with a Visco Lok. Once removed and disabled the Visco Lok can not be reinstalled, Can-Am does not sell the Viscous fluid.

**** Updated 3/20/18****

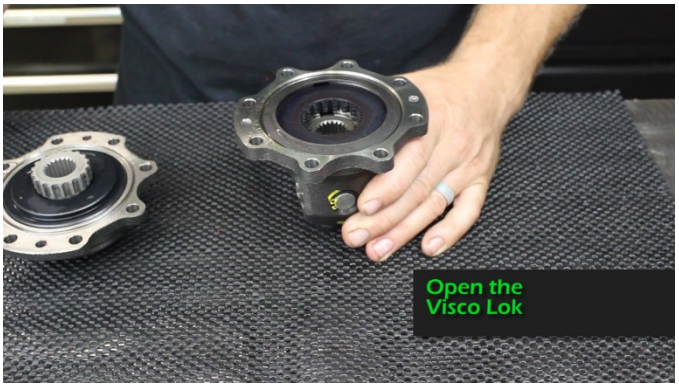
Disabling the Visco Lok

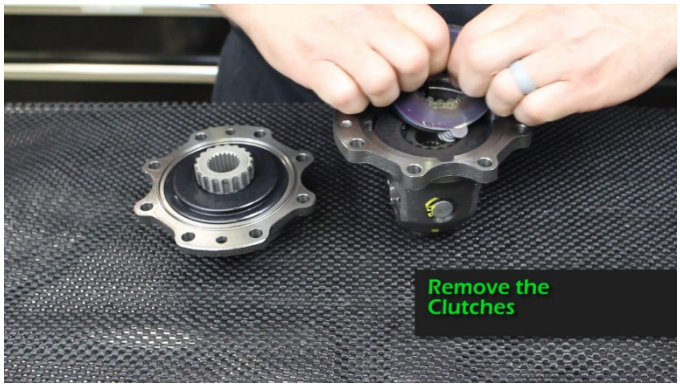




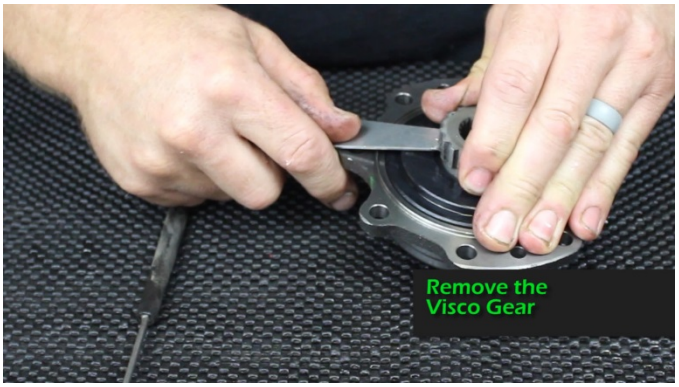
a. **Remove any differential case shims & Save for later**
b. **Make an index mark:** From the Differential case to the ring gear

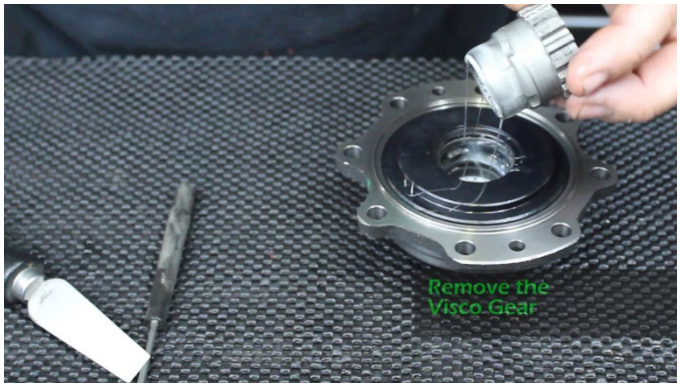
c. **Remove the Ring Gear:**
d. **Remove the 2 Differential Case Bolts:** *** NOTE *** These two bolts have Red Thread Locker applied by the factory. You may need to use heat to break the bond. These bolts can easily strip, so take great care when removing and reinstalling later.



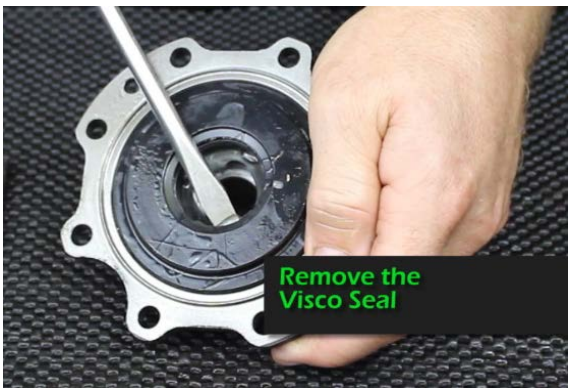


e. **Open the Visco Lok unit**
f. **Remove the Clutches**

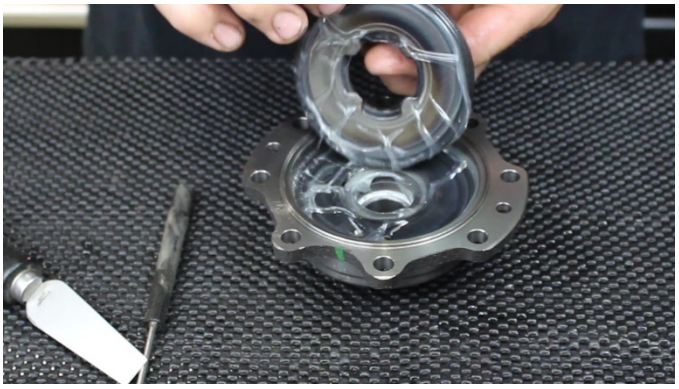




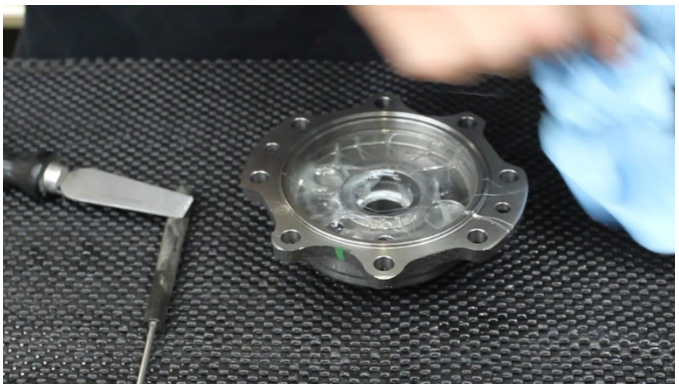
g. **Remove the Visco Gear**

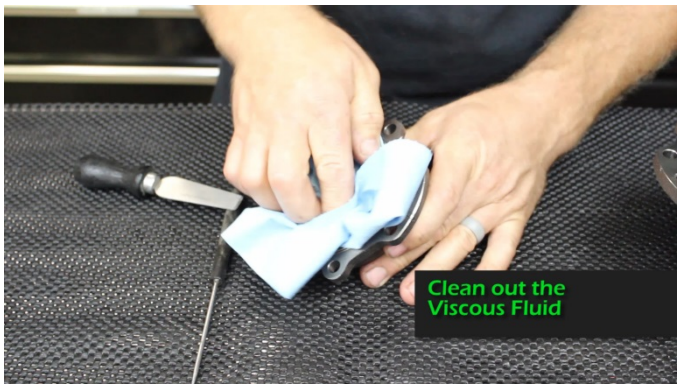


h. **Remove the Visco Seal**



i. **Remove the Visco Internal components**





j. **Wipe out the Viscous Fluid completely**

k. **Remove the O-Ring and discard**

l. **Turn the case over and Remove the Snap Ring**

m. **Open the exterior half of the Visco:** You can push out the seal from the inside of the Visco case

n. **Wipe out the Viscous Fluid completely**

2015.5 and Older Visco Lok's "Welded" Visco Lok

Follow steps L through N

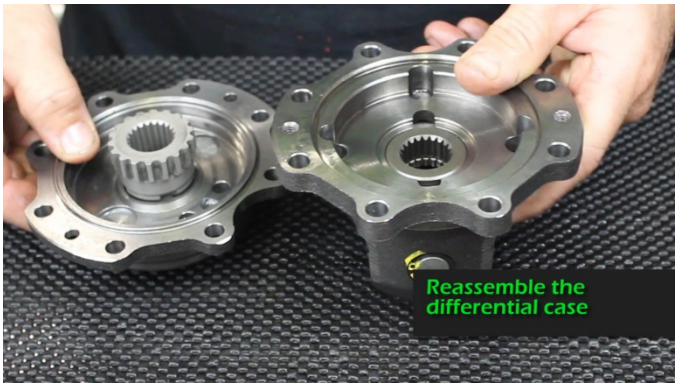
Removing the Viscous Fluid disables the Visco, without the fluid the pump can't pump and grab the internal clutches. You can leave the back cover, snap ring and washer off.

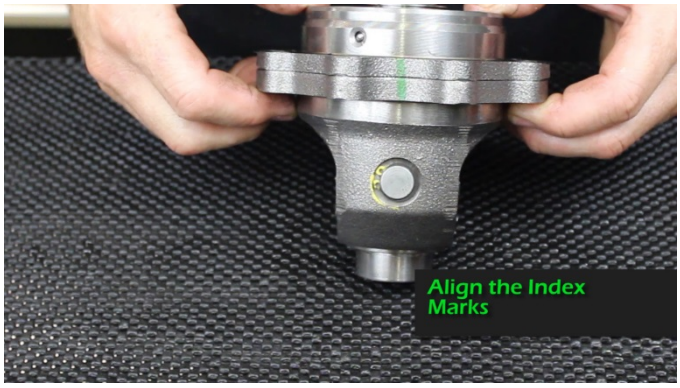
2015.5 and Newer Visco Lok's "Welded" Visco Lok

Follow all steps in this manual

o. **Double Check – 2015.5 and Newer Visco Lok** These are all the components removed in newer Visco Lok's

p. **Lubricate the Visco Gear with Gear Oil**
q. **Install the Visco Gear in the stock location**

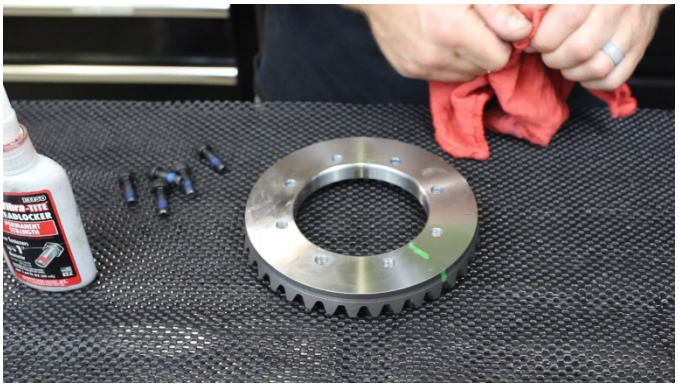


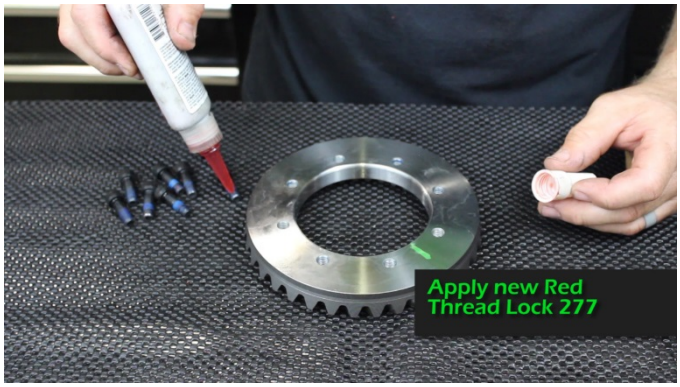


r. **Reassemble the differential case**
s. **Align the Index Marks**

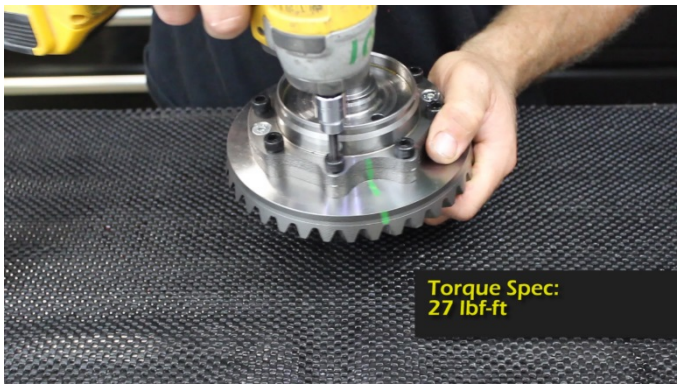
t. **Remove the Red Thread Lock with Brake Cleaner**
u. **Apply new Red Thread Lock on the 2 Differential Case Bolts**


v. **Take Care not to strip the Differential Case Bolts:** Use manual tools, these bolts are prone to stripping
w. **Clean out the Thread Locker from the Ring Gear with Brake Cleaner**





x. **Clean the Ring Gear bolts of Thread Locker with Brake Cleaner**
y. **Apply Red Thread Locker 277 to Ring Gear Bolts**



a. **Install The Ring Gear, Align the Index Marks:** Torque Specs on ring Gear Bolts is 27 lbf-ft

{Continued on Next Page – TORQ Locker Install}

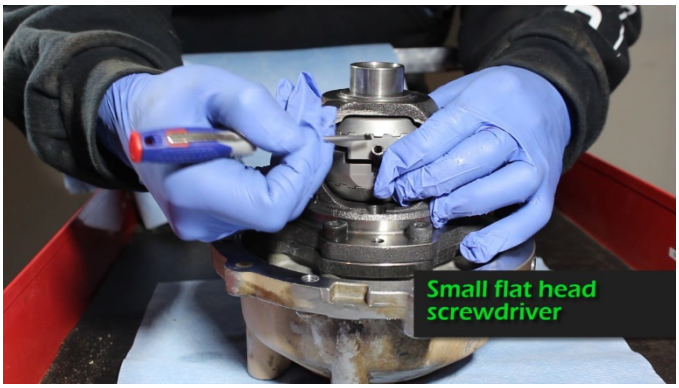
Install the TORQ Locker:

a. **Prep TORQ Locker for Install:** Apply medium grease, in a very, very thin coating, to the teeth of the gears and to the backs of the axle gears.

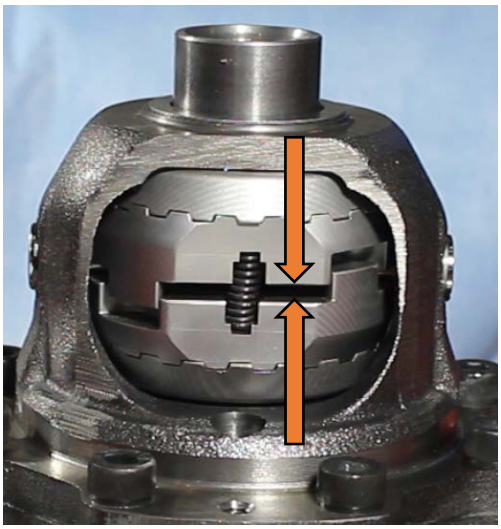
b. **Install 2 Axle Gears:** Place the 2 gears in the case. Use one hand to hold the upper axle gear from falling into the middle of the case.

c. **Install the Cam Gears:** Place the lower Cam Gear first. Note, align the Key-Way so that the pockets of the lower cam gear are facing the opening of the differential case. Slide in the Upper Cam Gear so that the Key-Ways align.

d. **Install the 2 Springs:** Tip – Use a small flat head screwdriver to compress the spring with one end of the spring in to pocket. The spring should snap in.



e. **Measure the Center Gap:** Center gap between 0.150 and 0.190



1.) Use Calipers or Feeler Gauges to measure the center gap between the two Cam Gears.

2.) Acceptable center gap should be between: **0.150 and 0.185 in.**

3.) **0.170** is the ideal center gap. Use the supplied shims in your kit, in pairs, same thickness on each side, to dial in your center gap to within our specifications.

4.) Call or email Customer Support if your center gap is outside of tolerance with shims, or too narrow without shims. Info@TorqMasters.com

5.) ** Tip ** wedge 2 flat head screwdrivers between the Cam Gears, one on each side of the case, to ensure the Locker is fully seated

f. **Install the Blue Shims if Necessary:** If you need to tighten up the Center Gap on your locker install, install the shims from your kit. Make sure to install shims symmetrically, on both axle gears, same thickness shim.

   i. - ** Tip** You can use a very light layer of general automotive grease to stick the shim to the back side of the axle gear for installation purposes.

g. **Reinstall the Cross Pin:** Use snap ring plyers. **Take care to install the snap ring without damaging it.**

h. **Reassemble the Differential Case & Install into the vehicle**

i. **Fill the Differential with gear oil:** 2016 Maverick: 500 CC's of 75-90 Full Synthetic Gear Oil

j. **Reinstall the Axle Shafts: **NOTE**** We suggest installing the Visco Lok side axle shaft first so you can rotate the gears in the differential. On the Visco Lok side of the diff there is a splined gear inside the Visco unit you will need to align that gear to the splined axle gear of the TORQ Locker. These two gears need to line up for the axle shaft to fully seat. If you find the Visco Lok side axle shaft is hard to install, rotate the axle shaft a quarter turn, and try again.

Perform the Wheel Spin Test

b. Jack the front end of the vehicle up on jack stands so both front wheels are off the ground and the vehicle is safely stable.
c. Put the vehicle in 4WD to lock the drive shaft.
d. **Tires must be installed to complete this test.**
e. Rotate one of the tires until it stops against the locked drive shaft. Hold it in position and maintain moderate pressure.
f. Rotate the other tire in the opposite direction. It should unlock and spin, with the locker clicking as the tire rotates.
g. Rotate the first tire in the opposite direction until it stops, and again maintain pressure.
h. Rotate the second tire in the opposite direction from the first time. It should again unlock and spin with the clicking sound.
i. Switch tires. Rotate and hold the second tire, and spin the first one in the opposite direction. Again switch directions. Both tires should rotate in both directions and the locker should click as they are doing so.
j. If your installation passes this "spin" test, you are ready to finish up.
k. Any questions? Shoot us an email or give us a call. Info@torqmasters.com

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™ FOUR 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 four 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**

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.

Frequently Asked Questions

Q: Do I use Thrust Washers in this install?
A: Maybe – we include 2 blue shims that may be necessary to install if your Can-Am Differential is out of tolerance.

Q: Do I have to make any measurements?
A: Yes, you need to measure the Center Gap, the space between the 2 Cam Gears to check for tolerance.

Q: When in 2WD what affect does the locker have? Is there any difference from stock in simply having the locker installed when in 2WD?
A: There should be no perceivable difference than stock in 2WD with a front TORQ Locker installed

Q: When in 4WD at higher speeds is there any difference in handling compared to the stock "3WD" Visco unit?
A: In 4WD there will be a perceivable difference than the stock LSD because both front tires will have torque at all times. You can greatly minimize the 'locked' feeling by adjusting the Digital Power Steering settings. We like DPS to minimum in slow, rock crawling, and DPS to medium or maximum for higher speeds. You may still feel a difference vs. stock after adjusting DPS, but it's easy to adapt, and a trade-off many are willing to accept for the increased capabilities.

Q: The cutout for the cross pin in the Cam Gear looks loose.
A: That's correct, this is by design. For the Locker to operate correctly, the Cam Gear must corkscrew about the cross pin, this drives the gears into the locked position.

Q: I can move one tire/ or the driveshaft, back and forth a quarter of a turn before the locker engages.
A: This is normal locker operation. The TORQ Locker™ adds backlash to the drivetrain.

Q: Does the TORQ Locker™ ever disengage?
A: The TORQ Locker™ never technically disengages, but it does allow for wheel spin differentiation so you can turn and steer the vehicle. The Locker achieves wheel speed differentiation through ratcheting. A slight audible click maybe noticeable at low speeds, this is an indication of the locker ratcheting.

Q: Where is the TORQ Locker™ made?
A: The TORQ Locker™ is made 100% in the USA from USA made raw materials. Our ISO 9001 certified manufacturing facility is in Rochester NY.

Q: What is the Warranty on the TORQ Locker™?
A: The TORQ Locker™ has a 4 year warranty with no tire size or horsepower limitations. The warranty does not cover damage to the locker from driveline component failures such as broken axle shafts or other differential failures.

Q: Do I need any special Gear Oil?
A: No, you can use your manufacturer's recommended gear oil.

Q: Will the TORQ Locker™ break my axle shafts?
A: The TORQ Locker™ will allow you to drive into the most extreme terrain, this extreme terrain puts more strain on your drivetrain and because of this additional strain, you could break driveline components. With modified suspensions, make sure to keep any eye on your axle shafts look to see if the axle shafts are sliding out of the differential from too much suspension droop. If you see this we suggest adding suspension limit straps.

Q: When I go to reinstall the diff and axle shafts, one shaft won't go all the way in the diff.
A: We suggest installing the non Visco Lok side axle shaft first so you can rotate the gears in the differential. On the Visco Lok side of the diff there is a splined gear in the Visco unit, and the splined axle gear of the TORQ Locker. These two gears need to line up for the axle shaft to fully seat. If you find the Visco Lok side axle shaft is hard to in-stall, rotate the other axle shaft a quarter turn, and try again.

TORQ Locker™ is 100% made in the USA.

Please direct any questions to: **info@torqmasters.com**