INSTALLATION MANUAL

TL-KM026 TORQ Locker Kawasaki Mule Pro Installation Instructions By:

Made in USA By:

INSTALLATION MANUAL

TORQ Locker Installation Instructions By:

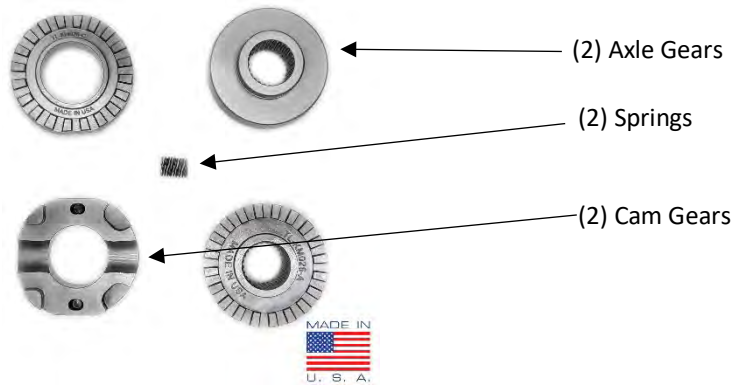
INTRODUCTION

We suggest that you read these instructions before beginning your installation to familiarize yourself with the installation steps. Confirm you have all the parts and tools necessary prior to installation.

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



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 the Axle Nuts:** 1-1/16”
- c. **Ball Joints:** Remove upper and lower ball joint nuts and swing the hub out of the way
- d. **Remove Front Skid Plate:**
- e. **Drain differential gear oil:**
- f. **Remove Upper Shock Bolt on the Passenger Side**: Then swing the shock out of the way
- g. **Remove the 2 lower Radiator Bolts and the lower hose on the Radiator:** Drain System first, or be prepared for a mess and try to catch the coolant with a bucket.
- h. **Remove the Axle Shafts** Protect the axle splines
- i. **Remove the Skid Plate & the (4) 17 mm Differential mounting bolts**
- j. **Punch the Driveshaft out of the Differential:** Use a long punch to pry the Driveshaft out of the Differential while pulling the Differential forward. The Driveshaft yoke is splined with a circlip, similar to an axle shaft. Keep the end of the driveshaft clean and protected
- k. **Remove the Differential Breather Hose :**
- l. **Remove the Differential:** Rotate the Differential 90 degrees, push the radiator forwards and pull the diff out from the passenger side wheel well, and place it on a clean workbench

3.) **Disassemble the Differential:**

- a. **Open the Differential Housing:** 12 mm bolts on the Differential cover. The Differential cover has 2 dowel pins, pull the cover straight up.
- b. **There may be bearing shims in the housing and cover, do not remove:**
- c. **Remove the Differential Case from the housing:** Flip the housing over, put a 17mm socket in the axle input and tap the socket with a hammer.
- d. **Remove the Ring Gear side Bearing:** Use a bearing puller and put a 17mm socket in the axle input for leverage
- e. **Remove Ring Gear:** Bolts have red lock tight, 14mm bolts
- f. **Remove the Cross Pin:** Tap on the case with a hammer and use a strong magnet to pull the roll pin. Then remove the cross pin
- g. **Remove the Spider Gears:** Rotate the spider gears and they will fall out. Thrust washers are NOT used in this installation.

4.) **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 1 Axle Gears:** Place one gear in the case.
- c. **Install 1 Cam Gear:** Place the lower Cam Gear first
- d. **Insert the Cross Pin**
- e. **Reinstall the Cross Pin Roll Pin**
- f. **Install the 2 Springs:**
- g. **Install the other Cam Gear and Axle Gear**
- h. **Reinstall the Ring Gear:** Clean the bolts and bolt holes. Use Red thread locker. Torq to 56 Ft/Lbs
- i. **Measure the Center Gap:** See detailed instructions later in this guide. Center gap between 0.150 and 0.170
- j. **Insert the Differential Case into the Housing**
- k. **Reinstall the Side Bearing**
- l. **Clean old gasket off and apply new gasket maker around the housing**
- m. **Align the dowel pins on the Differential Cover and gently tap the Cover into place**
- n. **Torque Differential Cover Bolts to 17.3 Ft/Lbs**
- o. **Reinstall the Differential into the vehicle**
- p. **Fill the Differential with gear oil:** Use the Manufacturer’s recommended oil weight and volume

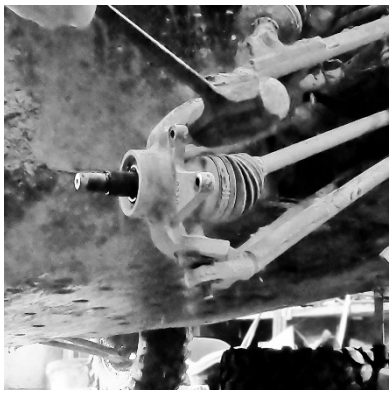
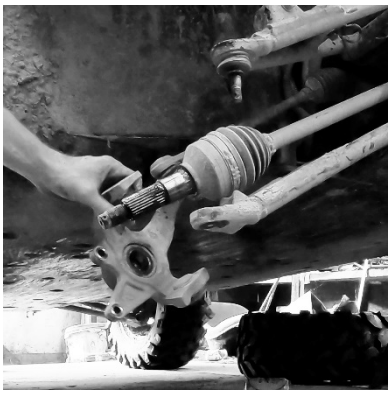
q. **Fill the Coolant System:** Use the Manufacturer's recommended coolant and volume
r. **Reassemble the Vehicle**

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 DETAIL PHOTOS

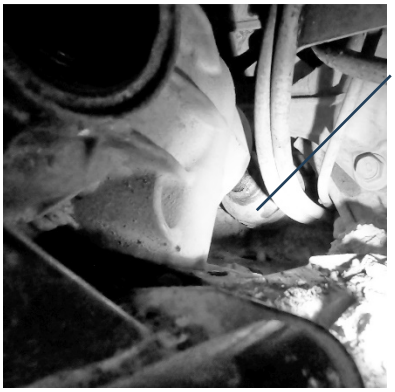
Disassemble components to access the front differential:

a. **Remove Tires:**

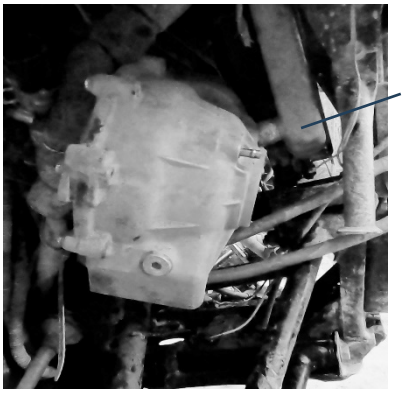




b. **Remove the Axle Nuts:** 1-1/16"
c. **Ball Joints:** Remove upper and lower ball joint nuts and swing the hub out of the way. Tap the ball joints with a hammer to help release them.


d. **Drain differential gear oil:**
e. **Remove Upper Shock Bolt on the Passenger Side**: Then swing the shock out of the way. Use a ratchet strap or bungee cord to hold the shock out of the way.
f. **Remove the 2 lower Radiator Bolts and the lower hose on the Radiator:** Drain System first, or be prepared for a mess and try to catch the coolant with a bucket.
g. **Remove the Axle Shafts** Keep the splines of the axles clean and protected
h. **Remove the Skid Plate & the (4) 17 mm Differential mounting bolts**



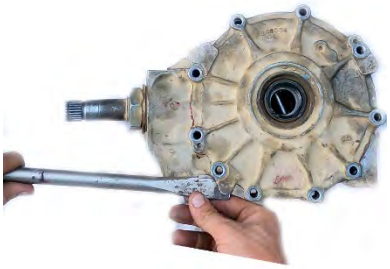
Put the punch here while pulling the diff towards you



Push the radiator out of the way, pull the diff out of the wheel well

i. **Punch the Driveshaft out of the Differential:** Use a long punch to pry the Driveshaft out of the Differential while pulling the Differential forward. The Driveshaft yoke is splined with a circlip, similar to an axle shaft. Keep the end of the driveshaft clean and protected
j. **Remove the Differential Breather Hose :**
k. **Remove the Differential:** Rotate the Differential 90 degrees, push the radiator forwards and pull the diff out from the passenger side wheel well, and place it on a clean workbench

Disassemble the Differential:



a. **Open the Differential Housing:** 12 mm bolts on the Differential cover. The Differential cover has 2 dowel pins, pull the cover straight up. You can use a pry bar to break the seal around the cover.
b. **There may be bearing shims in the housing and cover, do not remove:**

c. **Remove the Differential Case from the Housing:** Flip the housing over, put a 17mm socket in the axle input and tap the socket with a hammer.

d. **Remove the Ring Gear side Bearing:** Use a bearing puller and put a 17mm socket and a bolt in the axle input for leverage



e. **Remove Ring Gear and Split the Case:** Bolts have red lock tight, 14mm bolts. After you remove the bolts put a 17mm socket into the axle input on the ring gear side. Tap the socket to separate the case and the ring gear.



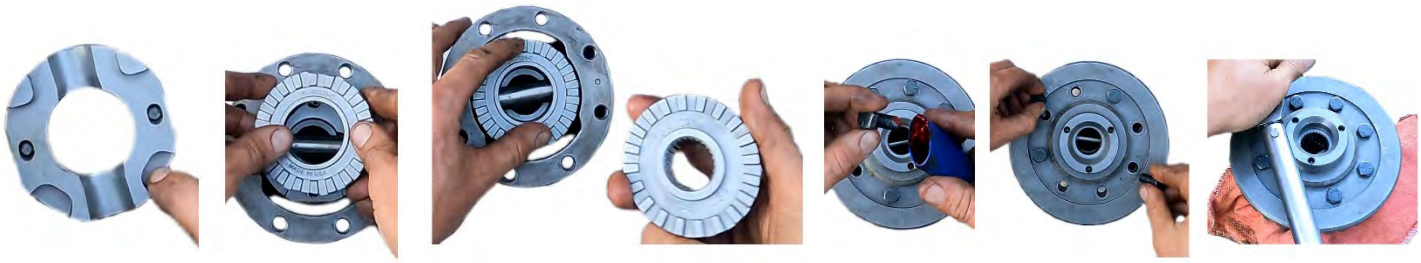

f. **Remove the Cross Pin:** The roll pin is in a blind hole. Tap on the case with a hammer and use a strong magnet to pull the roll pin. If the pin isn't coming out easily, spray the blind hole with break clean to clean out any gear oil. Then remove the cross pin
g. **Remove the Spider Gears:** Rotate the spider gears and they will fall out. Thrust washers are NOT used in this installation.

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 1 Axle Gears:** Place one gear in the case.
c. **Install 1 Cam Gear:** Place the lower Cam Gear first
d. **Insert the Cross Pin**
e. **Reinstall the Cross Pin Roll Pin**
f. **Install the 2 Springs:**



g. **Install the other Cam Gear and Axle Gear**
h. **Reinstall the Ring Gear:** Clean the bolts and bolt holes. Use Red thread locker. Torq to 56 Ft/Lbs

i. **Measure the Center Gap:** Center gap between 0.150" and 0.170"
j. **Clean the Housing and Differential Case with Break Cleaner**
k. **Insert the Differential Case into the Housing** Make sure it's fully seated

l. **Reinstall the Side Bearing:** Seat the bearing and gently tap it back onto the Case.
m. **Clean old gasket off and apply new gasket maker around the housing**
n. **Align the dowel pins on the Differential Cover and gently tap the Cover into place**
o. **Torque Differential Cover Bolts to 17.3 Ft/Lbs**
p. **Reinstall the Differential into the vehicle**
q. **Fill the Differential with gear oil:** Use the Manufacturer's recommended oil weight and volume
r. **Fill the Coolant System:** Use the Manufacturer's recommended coolant and volume
s. **Reassemble the Vehicle**

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

TEST DRIVE

1.) After your installation is complete it's time to take your vehicle out for a test drive.
2.) During your initial testing, take it easy the first few miles. Remember that a front locker-equipped vehicle will have some different handling characteristics that you will quickly adapt to when in 4WD. 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.) 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.

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.