

**This information MUST be recorded at time of installation & retained by the vehicle owner in event of warranty issues this information will be “required”.**

Supplier .....  
Installer .....  
Date .....  
Vehicle Make .....  
Vehicle Model .....  
Vehicle Reg # .....  
Odometer Reading .....

**X-Shaft to Axle gear Spacing** .....

**Inter Cam gear Spacing** .....

Tire Pressures DS ..... PS .....

**Unlock Test**

Before road testing put the transmission into gear so the drive shaft cannot rotate. Hold one side wheel back and rotate the opposite wheel forward. A slight ticking noise should be evident. Rock the first wheel forward and rotate the second wheel back. Again the ticking noise should be evident. Now repeat the procedure on the opposite sides. If the installation unlocks in all 4 situations then it is ready to be road tested.

Unlock Tests Performed 1..... 2..... 3..... 4.....  
Check each operation if passes

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**TORQ-MASTERS**  
INDUSTRIES

## **AUSSIE LOCKER®**

Aussie lockers are 100% made in the USA.

**PRELIMINARY INSTALLATION  
MANUAL FOR V6 TOYOTA  
XD24930**

### Aussie Locker XD24930 Installation Toyota 4 Pinion Rear

Read the instructions completely before starting this part of the procedure.



Remove third member for axle housing per manufacture instruction. Take note of the backlash between the ring gear and pinion gears by holding the pinion flange steady and rocking the ring gear back and forth. Rotate 90degrees and try again. Repeat 4 times. The amount of movement should be approximately even in all 4 positions and be between 0.008 and 0.016".



Mark the Bearing Adjusters for installation in same position. Mark the carrier bearing caps for later removal and replacement to the exact same location. Remove the carrier bearing cap bolts, (do not remove the bearing adjuster bolt/retaining clip) remove each bearing cap and bearing adjuster together (may need to tap with hammer in upward motion) keep assemblies separate (ie; left to right for reassembly in same location)



Remove Third member from axle housing. Remove Ring gear bolts and remove ring gear. Remove carrier bolts and split carrier in half.

**Remove the cross shaft, gears & washers. Examine the cross shaft. If there is any sign of wear, particularly where the pinion gears spin then replace the cross shaft. It is essential for the correct operation of the locker that this shaft is in perfect condition. Wear of**

**Commented [T1]:** Check and record backlash

**Commented [T2]:** Mark the Bearing Cap, bearing adjuster and carrier where assembly splits in half

**Commented [T3]:** Bearing cap with adjuster and retaining clip.

**Commented [T4]:** Carrier assembly with spider gears. Remove spider assembly and discard spider gears. Remove ring gear.

**Commented [T5]:** Inspect the spider cross-shaft must be in "new" condition. Inspect thrust washers for warping/wear.

only 0.002" is unacceptable. Sub standard replacement cross shafts are characterized by soft case hardening and are therefore not suitable for this application. Obtain your cross shaft from your local Toyota dealer for best results.

Remove and retain the thrust washers from the base of the side gears.

The Aussie Locker must be 1: symmetrical about the cross shafts and 2: within operating tolerance.

**1: Check for Symmetry**



Clean and inspect the thrust washers install the thrust washers on the axle gears. Install the axle gears 1 each into each carrier half ensure the gear spins freely. Install the spacer ring over the center of each axle gear. Install the cross-shaft into one of the carrier half's. With a feeler gauge measure the gap between the cross shaft center block and the top of the spacer ring. This gap should be between 0.006 and 0.020"

Now repeat for the second axle gear in the other part of the carrier assembly. Record the measurements.

If they are within the variation then the Aussie Locker is symmetrical about the cross shaft. If the clearances are not uniform then one or other of the thrust washers will need to be changed to make it symmetrical. Maximum variation allowed is 0.010". The result must be the cam gears are symmetrical about the shaft. Do not alter the thrust washers yet.

**2: Check for Operating Tolerance**

Put a little grease into all the holes and teeth of each Aussie Locker cam gear. Fit a spring into each of the deeper slotted holes in each cam gear. (2 per gear). Fit a pin into each of the round holes in each cam gear (2 per gear) with the step or nipple exposed. The step locates the pin into the end of the spring.



Install one cam gear onto an axle gear already installed non-ring gear half of the carrier. Do not fit the cross shaft. Position the second cam gear onto the first, aligning pins with springs. Push down a couple of times to make sure the gears move freely and the pins and springs are aligned.

Position the second axle gear (and thrust washer) onto the second cam gear, gently seat the remaining ring gear half of carrier on to this gear and bolt the carrier together using 4 evenly spaced bolts only. Make sure the Aussie Locker gears are meshed

**Commented [T7]:** Locker assembly minus the cross-shaft and spacers for test fit.



Rotate the Aussie Locker assembly so that the gap between the 2 cam gears can be measured through the cross-shaft holes. Pry the gears apart by installing 2 screwdrivers through cross-shaft holes opposite of each other to ensure gears are seated and maximum gap is achieved. Remove the screwdrivers. Use 2 feeler gauges opposite of each other simultaneously so 'cocking or tilting' of the cam gears is very limited. Average the 2 feeler gauge measurements.

This measurement should be from 0.145 to 0.165 inches. If not, then both thrust washers will need to be changed or machined to compensate. Do not alter the thrust washers yet.

Now consider the earlier check for symmetry (spacer to cross-shaft measurement) If the Aussie Locker is not symmetrical then a thrust washer will need to be altered and if the tolerance gap is too great or too small then possibly both washers will need to be altered.

Alter the thickness of the thrust washers if required.

The end result must be that the Aussie Locker is symmetrical about the cross shaft (greater accuracy results in improved driving behaviour) and certainly within the operating tolerance of 0.145 to 0.165 inches.

### 3: Continue

Disassemble so the cross shaft can be fitted for final assembly.



Reassemble the carrier as before with the cross shaft located between the cam gears. Apply locktite to the carrier bolts Ensure the alignment marks on the carrier match. Ensure the pins and springs are aligned before final tightening of the assembly bolts tighten and torque the bolts to 50 ft lb in a cross pattern. Refit and torque the Ring Gear to the carrier.

### Installation in Axle housing:

Install the carrier bearing races on the bearings. Lift the third member and install into the axle housing. Apply locktite to the bearing cap bolts install the bearing caps with the adjusters still attached (ensure the bearing caps are installed on the correct sides). Slowly tighten the bearing cap bolts in a cross pattern while tapping the caps with a hammer (this helps to seat the threads of the adjuster to the cap and carrier). If the assembly starts binding remove the bolts and caps/start over. Torque the bearing caps to spec, rotate the pinion yoke ensure ring and pinion spin freely. Check backlash to ensure the measurement is the same. **(Note; if the bearing caps and adjusters were removed together the backlash should be the same if reinstalled in the same location correctly therefore eliminating the need for a dial indicator).**

Clean the gasket surface and replace gasket if necessary. Install Third member into axle per manufactures instructions

### Unlock Test

Before road testing put the transmission into gear so the drive shaft cannot rotate. Hold one side wheel back and rotate the opposite wheel forward. A slight ticking noise should be evident. Rock the first wheel forward and rotate the second wheel back. Again the ticking noise should be evident. Now repeat the procedure on the opposite sides. If the installation unlocks in all 4 situations then it is ready to be road tested.

**Record the fitting details and measurements on the form provided and retain information as it will be required if you have a warranty issue.**

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**Commented [T8]:** Checking the center-gap clearance .140-.170 acceptable.

**Commented [T9]:** Assemble the locker with cross-shaft for final installation

**Commented [T10]:** Ensure the alignment marks match before installing and tightening bolts.