

GM F-Body Tunnel Brace Mounted Adjustable Torque Arm
P/N's 2203



Suggested Add-On part # 2998: The 2998 bolt kit supplies four ½" bolts, and four press in sleeves to accommodate the smaller mounting holes on the Moser rear end. This hardware prevents the shorter Moser bolts and slop found in the mounting holes to cause torque arm damage and bolts to loosen.

Tools required:

Wrenches and sockets
Jack and jack-stands

Note: Moser Engineering Rear-Ends- The Moser 12-Bolt rear end uses a (4) bolt set-up to attach the torque arm to the rear end instead of a through bolt design such as a factory GM rear. These bolts, over time have been known to come loose and cause damage to aftermarket and factory torque arms. We highly recommend if running a Moser rear end that bolts be checked often for tightness. We also recommend Loctite or other locking methods but still ask bolts be checked periodically. Please note UMI Performance will not cover damages caused to our torque arm when running a Moser Engineering rear end.

Notes: Before installation, verify box contents are correct and read through instructions completely. Always ensure proper support when working under a vehicle. Use approved jack stands when using a floor jack as well as proper technique for securing your car while on a drive-on lift.

Installation

1. Jack up front of vehicle to a good working height. Place (2) jack stands under each front A-arm. If possible, it is preferred to place the front tires on ramps or blocks to assure the suspension is loaded. Move to the back and jack rear of vehicle, place (2) jack stands on the inner frame rails on each side. Do not place jack stands under rear axle.
2. Under vehicle remove the stock tunnel brace.
3. Place jack under pumpkin or center section of the rear end and place slight upward pressure on the rear. This will help hold the rear into place when torque arm is unbolted.
4. Unbolt the clamshell from the front of the torque arm on the transmission.
5. On the rear end loosen and remove the (2) bolts holding the torque arm in place and save bolts. Slide the torque arm to the driver's side and pull out of front tail shaft bushing. The entire front clamshell and bushing will not be used again.
6. Disconnect the drive shaft at the rear end, in preparation for the drive shaft loop.
7. Locate new UMI front cross member, starting at the rear of the drive shaft slide the drive shaft through the safety loop to approximate position in the tunnel area. Now reinstall drive shaft.
8. Using the (4) supplied 8mm x 30mm bolts and lock washers loosely attach cross brace to vehicle. (Use Image 1 for example)
9. Now locate new torque arm and install onto rear end. To help ease installation grease may be applied to the rear end surface. Start towards the front of the rear end and slide the torque arm into position. If the rear end has been powder coated the torque arm mount may fit tight. If so, using a block of wood and lightly tapping mount should ease it into place. Use the up and down movements of the jack to move rear end to help installation.
10. Locate the long rear end bolts removed in step 4. If re-using these bolts the factory washers must be removed in order for bolt length to be appropriate, do not use the washers. For best fit and safety we recommend using our bolt kit # 3003. Install bolts from the TOP only with the nuts on the bottom. **Do not** install bolts up through with the nuts on top, this unsafe if a nut were to come loose. Install nuts only finger tight. If the vehicle is equipped with a **Moser Engineering** rear end re-use the bolts Moser has supplied.
11. At front of torque arm grease all bushing surfaces using the supplied grease packet, use the (2) supplied ½" x 3" bolts, lock nuts and (2) pivot links attach torque arm to cross brace. Using the jack, the rear end may need lifted or dropped slightly in order for pivot links to line up. If you cannot get holes lined up, disconnect the cross brace from the vehicle and attach to torque arm first, and then re-attach cross brace to vehicle. (Use Image 3 for example).
12. With torque arm attached to the cross brace, align cross member and tighten all (4) 8mm bolts. The torque arm is to sit parallel with the drive shaft.
13. Move the rear end and tighten bolts holding torque arm to the rear end.
14. Now move back to the front cross brace and tighten both ½" bolts attaching torque arm to the cross brace. This area is a pivot point and must be set at the appropriate torque spec to assure proper performance. Torque both bolts to 40-50 ft lbs. and no more. Supplied with the bolts is a conical lock nut that will not back out of place. At the rear end tighten both 5/8" rear bolts attaching the torque arm to the rear mounting bracket. Tighten **all** jam nuts; all torque arm bolts are supplied finger tight by UMI so make sure all bolts are tightened!
15. Grease both front bushings, use marine type grease; marine type grease cannot be washed away with water. Grease your control arm bushings 2-3 times a year adding only 1 pump of grease, **DO NOT OVER GREASE.**
16. Test drive vehicle after setting pinion angle. After driving re-tighten all bolts, if any driveline vibration is present this may mean the pinion angle is too severe. Re-check drive line angle and adjust accordingly.

Setting Pinion Angle

UMI Performance presets the torque arm to 0 degrees on a stock height car. However please double check these adjustments. An angle finder is needed to measure the drive line angle of the vehicle.

How to Check the Current Pinion Angle- To check the current pinion angle the vehicle must be level with the suspension loaded. Place the angle finder on the drive shaft and record the angle. Now place the angle finder on the bottom plate of the torque arm where it attaches to the rear end, record this angle as well. To achieve true pinion angle you must add the two measurements together. For example if the drive shaft measures 0 degrees and the torque arm mount measures -1 degrees you have -1 degrees of pinion angle. We have found the best settings for a street driven car are: Automatics 1-2 degrees negative, manual 1-3 degrees negative.

How to Adjust the Pinion Angle- Using UMI Performance's on-car adjuster, adjusting pinion angle is simple. First loosen both 5/8" bolts that attach the torque arm to the rear mounting bracket. These bolts must be loose in order for the torque arm to pivot. Second, loosen both jam nuts on the adjuster and rod end, there is no need to loosen top jam nut. With the angle finder on the bottom of the torque arm mounting plate use a 1" wrench on the adjuster and turn to desired angle. It won't take much to get a degree. Once pinion angle is set tighten **all** jam nuts tight. Check all bolts and jam nuts often. Pinion angle is to be set with suspension loaded and vehicle level.

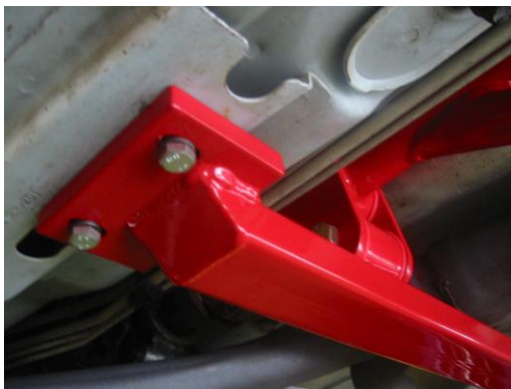


Figure 1: Cross brace mounted in place with 8mm x 30mm bolts



Figure 2: Torque Arm Attached using Pivot Plates



Figure 3: Item # 2203 Installed with Front Drive Shaft Loop



Figure 4: Completed Installation

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GM F-Body Tunnel Brace Torque Arm

UMI Performance Inc.
Made in Philipsburg, PA - USA