Spohn Performance, Inc.

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1993-2002 GM F-Body Pro-Series Adjustable Torque Arm

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Instructions

- Raise your vehicle on a lift. If you do not have access to a vehicle lift, we recommend the following procedure. Drive the front wheels of your car up and on to a set of ramps. Jack the rear of the car up with a jack and place jack stands under the rear end housing. You want the weight of the vehicle on the ramps and the rear end housing so the car is at ride height.
- Remove the factory g-load brace.
- Place a bottle jack under the pinion (center section of rear housing) to hold the rear in it's current position. If this is not done the pumpkin will rotate downward when you remove the stock torque arm.
- Remove the torque arm mount from the transmission tail shaft area.
- Remove the two bolts that mount the torque arm to the rear housing. Slide the torque arm off of the rear housing by sliding it towards the driver's side of the vehicle. The torque arm should now be off of the vehicle.
- If you have ordered your torque arm with the driveshaft loop(s) option, then remove your driveshaft at this time.
- Raise the Spohn torque arm and slide the rear housing mount over the rear housing mounting pad. Align the holes and install the two original bolts first **REMOVING the washers** from the bolts. **DO NOT use the washers** if using the stock bolts, this is important. Make the nuts **hand tight only**. Be sure to install the two bolts from the top down, do not install the long bolts from the bottom up. If you were ever to lose a nut, the bolt would drop out. You may have to support the car on the frame with jack stands, and then lower the rear with the floor jack to get the bolts installed from the top. Once installed, put the car back at ride height.

- Now align the g-load brace/cross member mounting holes with the four mounting holes in the frame of the car and install the four **supplied** bolts into the frame. Make the bolts hand tight only at this time. **Do not re-use** the original g-load brace bolts! Your package was shipped to you with four new bolts, these bolts are longer than the original bolts. The longer bolts are needed due to the thicker mounting brackets our heavy-duty g-load brace uses. Be sure to install the supplied flat washers between the bolts and the brace. **NOTE:** If you are using subframe connectors that tie into the g-load brace mounts you will need bolts **longer** then the bolts we supplied. For this application you will need to obtain (4) bolts that are 8mm x 1.25 pitch (metric course) x 35mm length. The bolts we supply are 25mm length, you will need to have 35mm length for proper thread engagement with the added thickness of the subframe connector mounts.

- Line the front torque arm mount (bushing or rod end) hole up with the top hole of the two rotator plates on the crossmember front mount and install the supplied 5/8" bolt and lock nut hand tight.

- Tighten the two bolts that secure the torque arm to the rear housing.

- Tighten the four bolts that secure the g-load brace/cross member to the frame of the car.

- **IMPORTANT:** All of the bolts and jam nuts on the Spohn torque arm are shipped hand tight to allow for play when installing, they must all be tightened at this time! **TIP:** To keep jam nuts from loosening over time from road vibrations, apply a drop of **removable strength** (Blue) Loctite onto the threads, and then tighten the jam nuts.

- We have tightened the two bolts that secure the two rear rod ends to the rear housing mounting bracket. If you ever need to disassemble these the bolt head uses a 1-1/2" wrench and the nut uses a 1-7/16" wrench. If you ever remove the top bolt from the threaded hole be sure to apply RED loctite on to the threads when re-assembling.

- Tighten the top front rotator mount bolt.

- **IMPORTANT:** The BOTTOM front rotator mount connection. The bolt and lock nut that secure the bottom of the front mount's rotator plates should not be over tightened. You have been supplied with 5/8" grade 8 bolts and special "super" lock nuts. Wherever you stop turning these nuts they will stay locked in position, they will not back off the bolt. The bottom connection of the front rotator mount should be tightened to 50 ft/lbs. If going by feel, bring the nut in until you feel it tighten against and then stop.

- Read the attached pinion angle adjustment instructions. After setting your pinion angle, tighten the three jam nuts at the rear of the torque arm with a 1-1/2" wrench. The two jam nuts towards the rear of the arm that secure the rod ends are right hand threaded and tighten clockwise as normal. The jam nut in front of the pinion angle adjuster that tightens against the lower torque arm tube is left hand threaded, and thus tightens by turning it counter-clockwise.

- **Completely fill** the bottom sleeve of the front rotator with grease through the grease fitting. If you have the poly bushed front mount, keep the bushing greased through the grease fitting using synthetic silicone grease (our Part #902).

- After the first 20 miles of driving, check all bolts and attachments for tightness, retighten if needed.

- Re-install your driveshaft. Our driveshaft loops meet the build and location specifications required by the NHRA and IHRA.

- **Ford 9" Rears:** You will notice that the rear mounting bracket of the torque arm has two sets of mounting holes. On the 9" rear you want to use the set of mounting holes that are towards the driver's side of the car. On a stock rear or 12 bolt rear, you would use the set of mounting holes towards the passenger's side of the car. The reason for this is that on a 9" rear, due to the larger center section, the torque arm mount on the rear is actually 1" further to the driver's side of the car compared to the OEM rear. Using the set of holes towards the driver's side of the car in our rear mounting bracket will move the torque arm back to the OEM location and line it straight up with the front mount. If your 9" rear is equipped with a nodular (large ribbed) center section, it may be necessary to grind away part of the rib so it does not interfere with the torque arm's rear mounting bracket.

Setting Pinion Angle

There are two angles to deal with:

1) Driveshaft angle
2) Pinion angle

You subtract pinion angle from driveshaft angle to get TRUE pinion angle

Here's how you do it:

First, had you measured your stock drive shaft angle and pinion angle before you removed your stock torque arm, you would have calculated a 0 deg. TRUE pinion angle. This is how all cars come from the factory.

Using an angle finder place it on the underside of the driveshaft and record the angle indicated.

Next, place the angle finder under the flat surface where the torque arm mounts to the rear end (this surface is parallel with the pinion shaft) and record the angle indicated. Record both angles from the driver's side of the car. On the driveshaft anything to the left of 0 is positive, on the rear end anything to the right of 0 is negative.

Subtract the pinion angle from the driveshaft angle. The result is "TRUE Pinion Angle".
In order to apply preload you need negative TRUE pinion angle. Adjust the torque arm so that the front of the pinion goes down; continue to check each angle until the pinion angle is more degrees down than the driveshaft angle.

We recommend –1 degrees on a mildly modified daily driven car. For high horsepower applications we have gotten the best results with –2 to –3 degrees. There is no reason to run more negative then that, it will actually hurt your performance because it will induce driveline bind.

Here's a tip. When adjusting for your TRUE pinion angle, count the number of flats (or the 1/6 of a turn) as you turn the adjusting nut, to know how many it takes to adjust 1 degree of negative TRUE pinion angle and in what direction (clockwise, or counter-clockwise). Once you know that, then adjusting the arm at the track or before a race will take almost no time, and no angle finder will be needed.

Adjusting your Spohn Torque Arm: You adjust the pinion angle by turning the pinion angle adjuster, (located at the rear of the lower torque arm tube) either clockwise or counter-clockwise. As you turn the adjuster you will see the pinion nose of the rear housing moving up/down. Moving the rear housing's pinion nose down will give you more of a negative pinion angle degree, and up will give you more of a positive pinion angle degree.

You will quickly learn that it does not take many turns to adjust the angle by several degrees, so go slowly and check your angles often.