Spohn Performance | Support Center

Can you explain how to set and adjust pinion angle?

Vehicle Set-Up: Make sure your vehicle is at ride height - suspension loaded. You can not have your rear end "hanging". The vehicle does not have to be level, no matter the angle of the car you're still measuring the difference between the two angles.

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 you would have calculated a 0 degrees 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 from the driver's side of the vehicle.

Next, place the angle finder under the flat surface of the pinion yoke (this surface is parallel with the pinion shaft) and record the angle indicated. Record both angles from the driver's side of the vehicle. 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 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 degrees. There is no reason to run more negative angle than 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 adjuster, to know how many turns 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 Arm: You adjust the pinion angle by turning the pinion angle adjuster 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.

Example: From the driver's side of the vehicle you have 1 to the left of 0 (positive 1) underneath the driveshaft. You have 3 to the right of 0 (negative 3) under the pinion yoke.

+1 minus -3 = -2

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