

Pinion Nut Wrenches

by Tom Endy 2024

The two large pinion gear nuts in the Model A Ford differential are installed and adjusted using two large Ford factory pinion nut wrenches. Unfortunately, these wrenches are not usually available and many of the nuts have been adjusted and tightened with a hammer and a chisel. I was lucky to find a pair of wrenches at a swap meet.



The two large original Ford factory pinion nut wrenches:

The pinion gear bearing pre-load is set by the rear large nut and locked in place with the front large nut. This can be a tedious task, with much trial and error. Insert the drive shaft (or an overdrive stub shaft) into the pinion gear sleeve using a new locking key. Note that the key used for the drive shaft is not the same as used for the two axles. The drive shaft key is part number A4606; the axle shaft key is part number A4243. Install the 15/16" hex nut onto the end of the drive shaft, torque it to 100 ft. lbs. and install the cotter pin. A note of caution, bend the legs of the cotter pin along the side of the nut, not over the end of the drive shaft, as it may interfere with the rotating ring gear carrier. The drive shaft nut should be torqued before setting the pinion bearing pre-load as it can increase pre-load if set before the nut is torqued. The pinion bearing pre-load is adjusted to a nominal 20-in. lbs. The trick is to set the pre-load low, to about 8-in. lbs., then when the lock nut is tightened the pre-load will increase, hopefully to the correct value. The pre-load adjustment is read off a dial indicator applied to the end of the drive shaft (or stub shaft). Rotate the torque wrench smoothly. Some amount of fluctuation is unavoidable. When the pre-load is set, bend two ears of the large locking washer over, one in each direction. Beware of reproduction locking washers. Some have oversize ears, and the unbent ears will scrape on the inside of the torque tube and lock it up and prevent it from rotating by hand. Henry's forty horses will break it loose, but it will make a lot of noise.