Early Ring & Pinion

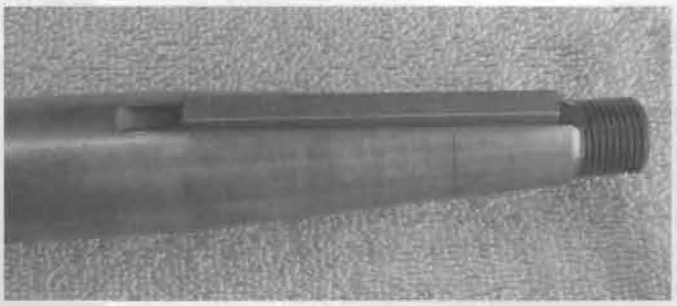
By Tom Endy, Westminster, California

The early cars, from the beginning of production until sometime in mid 1928, used a very different style ring & pinion gear combination than is found in the later cars.

The early ring gear looks the same as the later, however the pinion gear is very different. Note the pinion gear sleeve does not have threads on it for the two large nuts used to set the pre-load. The early pinion nuts are smaller than the later, as is the tab washer. The pinion gear is also installed on the drive shaft with a woodruff key instead of a locking key.

The early drive shaft is threaded to accommodate the two pre-load nuts. The nuts and tab washer must first be installed on the drive shaft before the pinion gear and bearing assembly are installed. Note the drive shaft is machined for a woodruff key instead of a locking key.

The later pinion gear has a longer sleeve and has the threads, the two pre-load nuts and the tab washer install on. The later pinion gear also uses a thrust washer inserted between the front bearing and the first nut. Note the later nuts and washers are much larger than the early. The later drive shaft does not have threads on it and is machined for a locking key.



Drive shaft used with the later style pinion gear.

At the beginning of production, the ring and pinion gear ratio was 3.70:1 (10-37). When the change was made to the later style ring and pinion, the ratio was changed to 3.78:1 (9-34).

A service bulletin was issued in March 1929 to accommodate replacement parts for the early cars. The gear ratio of the early pinion gear was changed from 3.70 to 3.78 (from 10 teeth to 9 teeth) so it could be mated up to the later style 34-tooth ring gear. I have personally encountered both 3.70 and 3.78 ring and pinion ratios of the early style. The photos in this article are of the early style replacement 3.78 ratio ring and pinion gear set.

Comparison of early and late pinion gears. Early on the left – late on the right.

The Ford Service Bulletin,
March 1929, page 327.

DIFFERENTIAL DRIVE GEAR AND DRIVING PINION

To simplify production of gears and pinions we have discontinued manufacture of the A-4209AR, gear and pinion, 10-37 ratio, and will hereafter supply a 9-34 ratio gear and pinion under part number A-4209AR.

Note that Ford retained the same part number even though they significantly changed the part.

Ford factory wrenches used to set the pre-load on the later pinion gear assemblies that use the larger pinion nuts.

The Mitchell overdrive

The Mitchell overdrive stub shaft is not compatible with the early pinion gear. When encountering one of these early cars, it becomes necessary to replace the ring and pinion with that of the later configuration in order to install the overdrive.

Mitchell overdrive stub shaft with later pinion gear assembly.

Though the late and early pinion pre-load nuts differed in size, they had one thing in common. Most seem to have been molested with a chisel over the years by people attempting to set the pre-load without using the proper wrenches.

Early chisel molested pinion nuts.

Suppliers today only stock the later configuration ring and pinion gear set. When a failure occurs to the early style ring and pinion gear set, it is necessary to replace the ring & pinion with the later style. The drive shaft also has to be replaced with the later style, along with the later larger pre-load nuts, tab washer, and thrust washer.