

Differential Carrier

by Tom Endy 2021

Quite often Model A differentials are rebuilt by people who do not have an understanding of how the pre-load on the two carrier bearings is established. They are not aware it is done by the selection of the number and thickness of the banjo gaskets. All too often differentials are assembled by merely putting a single gasket on each side of the banjo without any thought given to bearing pre-load. The result is that the bearings are usually locked up. Once the car is back on the road Henry's forty horses will break them loose. This causes the bearings to spin on the mounting hubs. From then on the carrier is rotating mostly on the hubs instead of on the bearing roller elements. Nine out of ten differentials I overhaul I find one or both bearings spun on the mounting hubs. The repair is to have the carrier mounting hubs knurled, so that the new bearings will press tightly on the hubs.

The photo below shows the ring gear side of a carrier that had been put together so tight that Henry's forty horses actually sheared the hub off the carrier. What is interesting is that this carrier came out of a running Model A that did not exhibit a problem with the differential. The bearing was captured in place because it could not go anywhere, however, the carrier was not rotating on the bearing. When I disassemble the differential the bearing and the sheared hub fell out. Certainly a testimony to the ruggedness of the Model A Ford.

