Component Identification, Interchange, Upgrades and Modifications

Note that there is production helical and straight cut planetary gearsets. The helical gearsets were used in passenger cars and light duty truck applications. The straight cut gearsets were used in motorhome and heavy duty truck applications. Figure 18B-1 shows a production helical cut rear internal gear. Figure 18B-2 shows a production straight cut rear internal gear.

FIGURE 18B-1

FIGURE 18B-2

Note that there are production helical and straight cut 4L80E planetary gearsets. As long as the gear type is matched, all 4L80E rear internal gears will retro-fit all TH400 transmissions. Note that 1996 and up 4L80E's received a revised rear internal gear with four lube oil channels added to the gear's broached bore profile, and a modified thrust bearing to rear internal gear race (684) with cut outs. See Figures 18B-3 and 18B-4. Although not used with the production TH400 rear internal gear, these additional lube oil channels to the gear and race will have no negative (or positive) effect on lube circuit performance when interfaced with the production TH400 lubrication system.

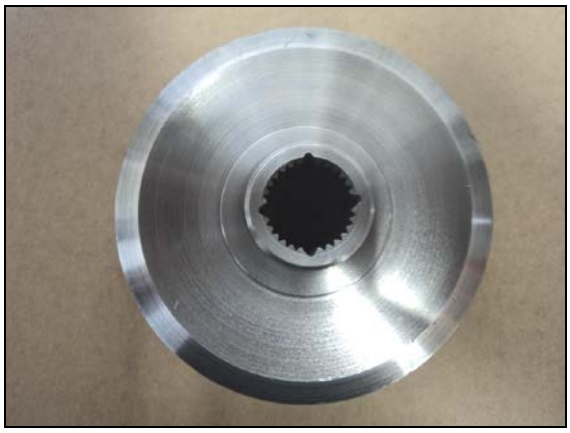

FIGURE 18B-3

FIGURE 18B-4

Identify the type of main shaft in use. Note that there is a first design mainshaft that was used in all 1964 to 1966 model year transmissions and a second design main

shaft used in all 1967 and up models. Early second design mainshafts were produced with the identification groove shown in Figure 18B-5. As time went on, the identification groove was deleted making the shaft similar in appearance to the first design mainshaft.

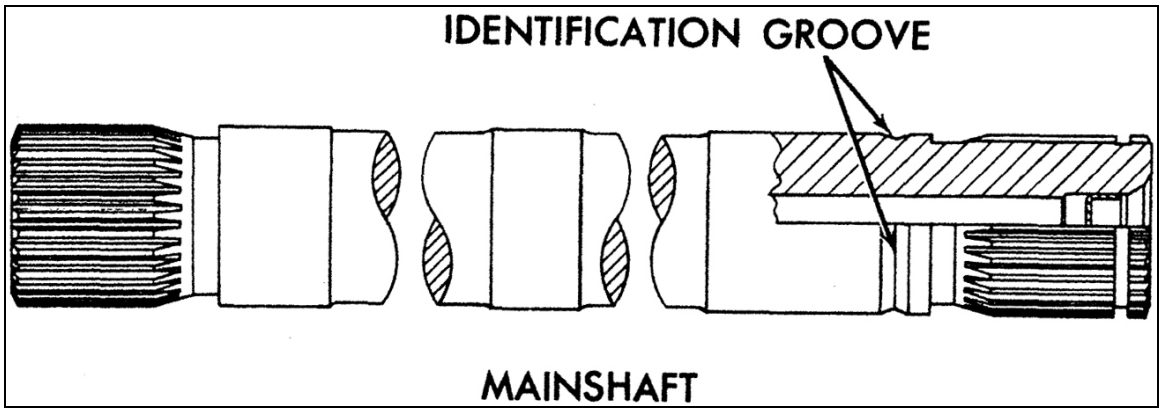

FIGURE 18B-5 **GM**

The shafts can also be identified by measuring the major outside diameter of the forward clutch hub splines on the end of the shaft. See Figure 18B-6. The first design mainshaft will measure in @ approximately .980" and the second design will measure in @ approximately .970". Although the pitch of the splines is the same, the difference between the major diameters requires that a specific clutch hub be used with each shaft. The first design mainshaft, because of its larger major diameter, will not mate with a second design forward clutch hub. The second design mainshaft, because of its smaller major diameter, will have a loose fit if mated to a first design forward clutch hub. A mated first design mainshaft and forward clutch hub are shown in Figure 18B-7. When used as a set, these parts can be interchanged into any model TH400 transmission. The first design mainshaft and clutch hub are extremely rare. It is highly unlikely you will find these in your transmission.

FIGURE 18B-6

FIGURE 18B-7

<u>Installing the 4L80E Mainshaft in the TH400</u>

All 1991 to 1995 model year 4L80E mainshafts will retro-fit all 1967 and up TH400 models with the major outside diameter of the forward clutch hub splines measuring @ .970". Retro-fitting 1964-66 models with this mainshaft requires the use of the matching forward clutch hub from any 1967 and up TH400 or any model year 4L80E transmission. Note that there were revisions made to the lubrication system on 1996 and up model year 4L80E transmissions. These models received a revised mainshaft. These models have no drilled lube holes in the mainshaft. NEVER install a solid 4L80E mainshaft in any TH400 transmission. This will result in complete transmission failure.