

ORDNANCE MAINTENANCE -- POWER TRAINS AND INTERCHANGES:  
MILITARY/ CIVILIAN TRUCKS 1941 TO 1971 (DODGE)

- 5) Remove the old axles and third members.
- 6) Remove the old axle housing covers.
- 7) Remove the old axle housing mounting studs on the third member side only; leave in the cover studs.
- 8) Install a new late gasket WITH THE RECESSES IN THE PROPER ORIENTATION (paragraph 5.3 c) 3)) over the mounting stud holes and mark the areas to be ground. Grind in the recesses.
- 9) Thoroughly clean the housing and adjacent areas to remove all filings.
- 10) Install the new studs in the housings, using a suitable sealant and being certain that they are tight (double-nutting the 7/16 end is a good method).
- 11) Replace the U-joint flanges on the new third members with the ones from the old third members.
- 12) Install the new third members using THREE 1/32 thick gaskets each (paragraph 6.1 c)).
- 13) Install the new covers using one gasket each.
- 14) Install the new axles.

The above installation can be made in an early 3/4-ton truck by deleting the reference to cutting and rewelding the axle ends in step 2) and following the remainder of the steps.

Any of the other substitutions described in paragraph 5.3 can be done by "mapping out" the steps in advance and then proceeding in a manner similar to the steps described above.

**Determining characteristics.** To determine gear ratio, put the transmission in neutral, block one rear wheel, and jack up the other one. Turn the free wheel around TWO times and count the number of driveshaft rotations. This number is also the gear ratio. To determine two-pinion or four-pinion differentials (8-3/4 third members), remove the axles and shine a light through the housing. If light is visible, it is a two-pinion type; if not, it is a four-pinion type.

CHAPTER 6

AXLE HOUSINGS

|                         | Paragraph |
|-------------------------|-----------|
| Description.....        | 6.1       |
| Interchangeability..... | 6.2       |

6.1 DESCRIPTION

a) **General.** The axle housing is an elongated casting that contains the third member and has the vehicle wheels attached to its outer ends. Axle shafts connect the third member to the wheels to transmit driving torque, and welded-on pads are used for mounting leaf springs that connect to the vehicle chassis. In addition, the front housing has hemispherically-shaped ends to receive special universal joints that allow the front wheels to be turned for steering.

b) **1/2-ton WC and early 3/4-ton WC series trucks.** Both of the housings for these trucks were made for the 8-3/4 diameter ring gear, although the 3/4-ton truck housings are larger. Characteristics include a stamped inspection cover "formed" over the ring gear and bolted on, 3/8-diameter studs for third member mounting, and a completely round stud ring (no recesses ground in; see paragraph 6.1.(c) below).

c) **Late 3/4-ton WC and 1-1/2-ton WC series trucks.** After the production of 481 3/4-ton trucks with 9-5/8 diameter ring gears, the housings had recesses ground in at the top and bottom of the stud rings for clearance (see figure 6-1). All 1-1/2-ton trucks have these recesses. All 3/4-ton trucks with 9-5/8 diameter ring gears and all 1-1/2-ton truck axle housings have stamped "spherical" inspection covers that were bolted on in early production and welded on after S/N 82006954. All housings have 7/16 diameter third member mounting studs. Early production housing cover studs are 3/8, and later ones (before welding) are 7/16.

The following concept is very important. The axle centerline of the 9-5/8 third member is 1/16 further away from the mounting surface than is the centerline of the 8-3/4 unit to allow for the larger ring gear. Each axle housing after vehicle S/N 82037271 was modified by placing a 1/16 thick ring over the studs and welding it on to space the third member 1/16 out. These housings use only one gasket and have a tag welded on that says "use one differential carrier