

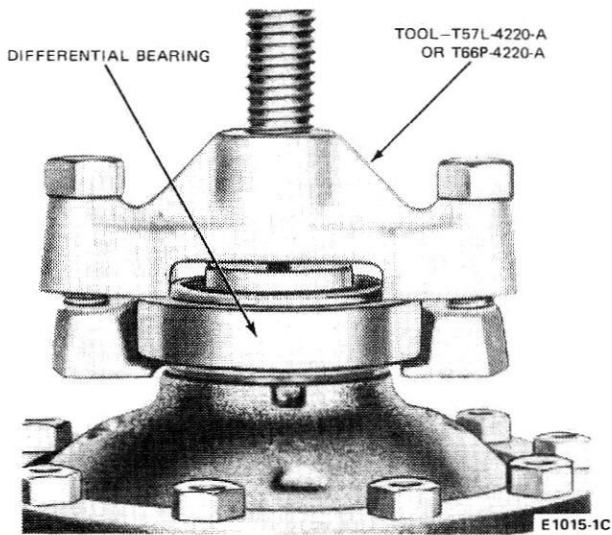


FIG. 22 Removing Differential Bearing

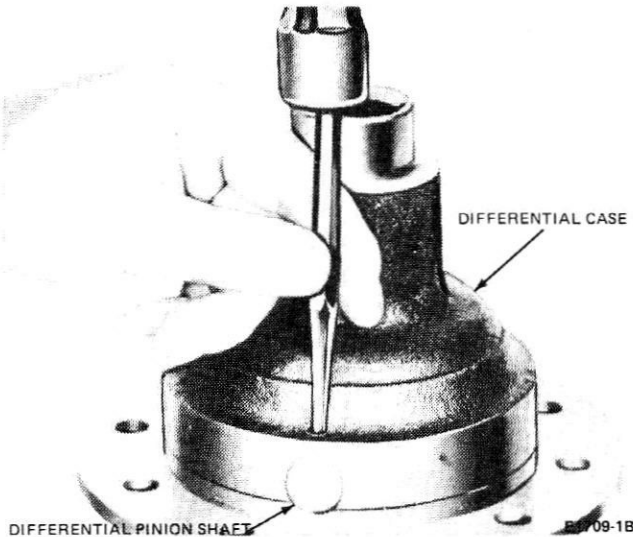


FIG. 23 Removing Differential Pinion Lock Pin

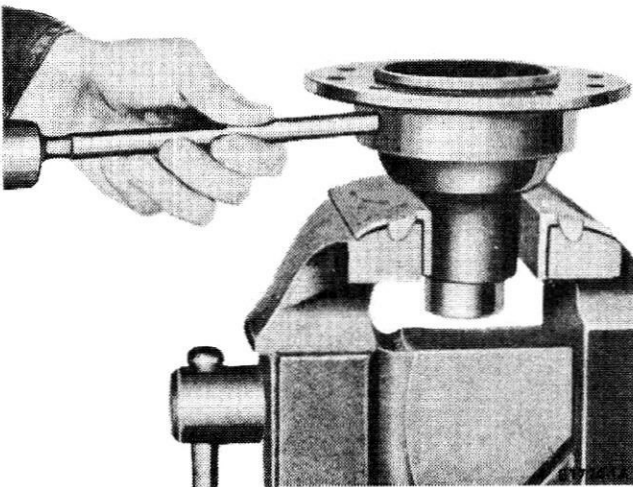


FIG. 24 Driving Out Differential Pinion Shaft

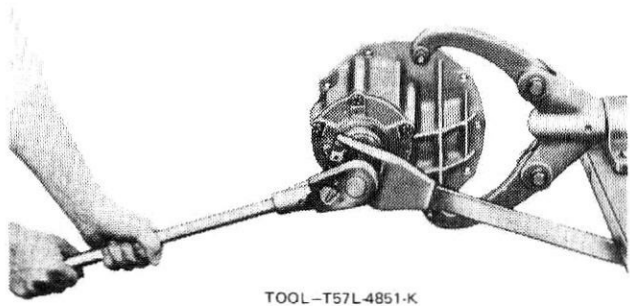


FIG. 25 Removing Pinion Nut Shaft

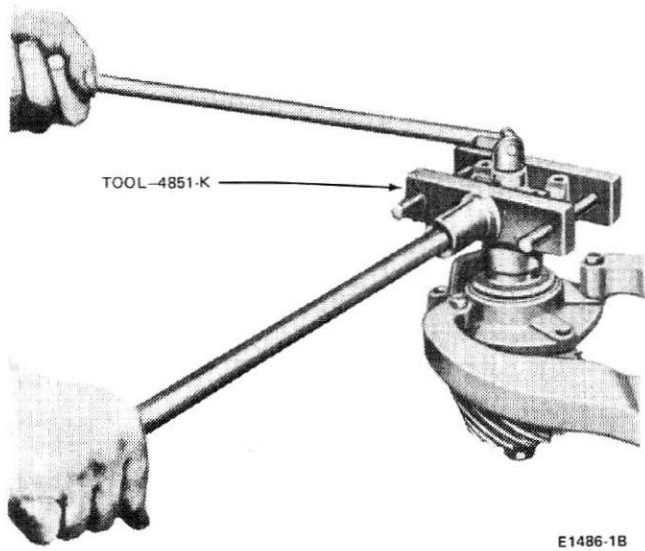


FIG. 26 U-Joint Flange Holding Tool

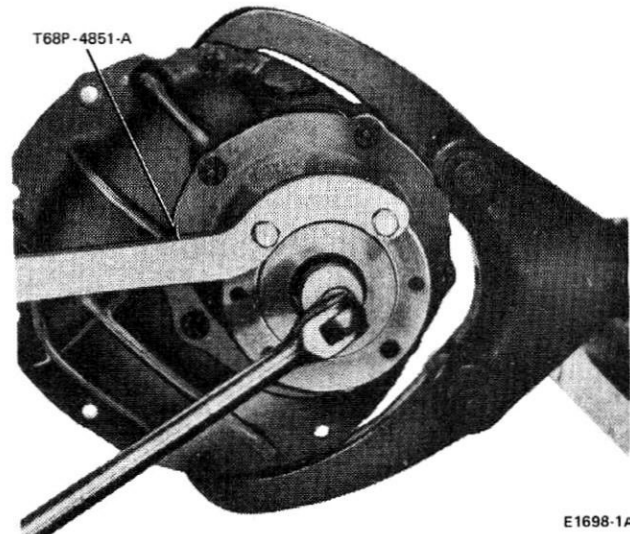


FIG. 27 Companion Flange Holding Tool (Circular Flange)

Install the front pinion bearing (new or used if in good condition) and screw the handle onto the threaded shaft, with the tapered end into the front pinion bearing (See Steps 1 and 2 in Fig. 40). The flat end of the handle has a 3/8 inch square hole broached in it. This is designed so that an in-lb torque wrench may be used to obtain proper pinion bearing preload. (See Specification Section.)

3. Install the pinion bearing assembly into the carrier (without a pinion shim) and tighten the attaching bolts to 30-45 ft-lbs torque.
4. Rotate the Gauge Block so that it rests against the pilot boss (Step 3 in Fig. 40).

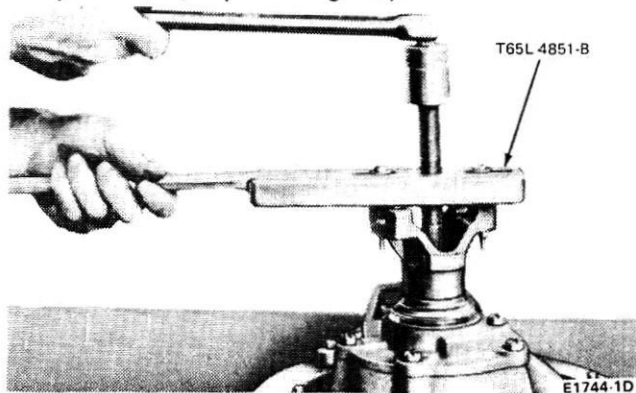


FIG. 28 Removing U-Joint Flange

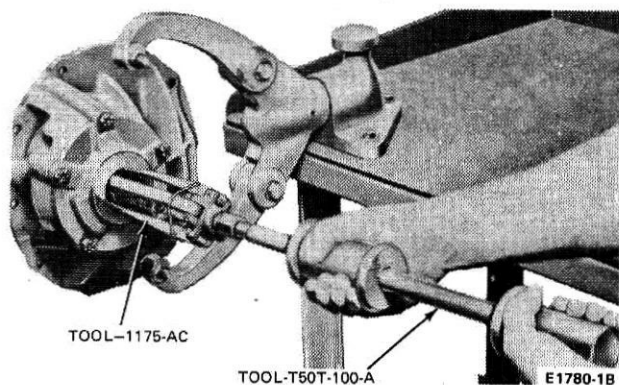


FIG. 29 Removing Pinion Seal

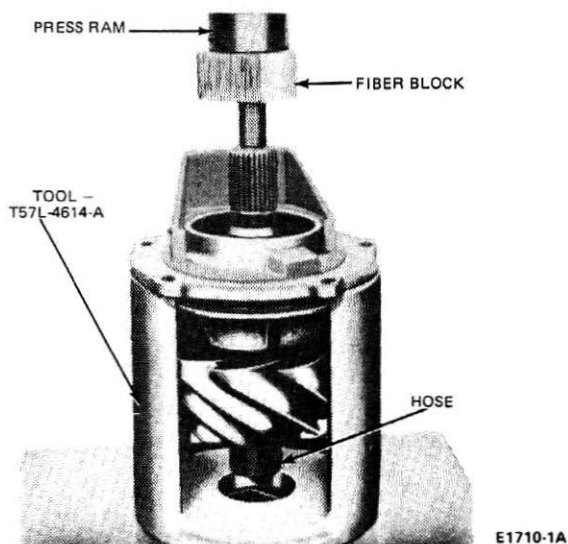


FIG. 30 Removing Pinion Front Bearing

5. Place the differential Gauge Tube into the differential bearing bore and tighten the bearing caps to the specified torque (Step 4 in Fig. 40). **On the 8-inch axle only, check for clearance between the Gauge Tube and the pilot bearing boss casting. Remove material from the casting if necessary. Be sure to clean out any loose material.**
6. Using a feeler gauge tool, select the thickest feeler blade that will enter the space between the differential bearing Gauge Block and Gauge Tube (Step 4 in Fig. 40). (Insert the feeler blade directly along the Gauge Block top to ensure a correct

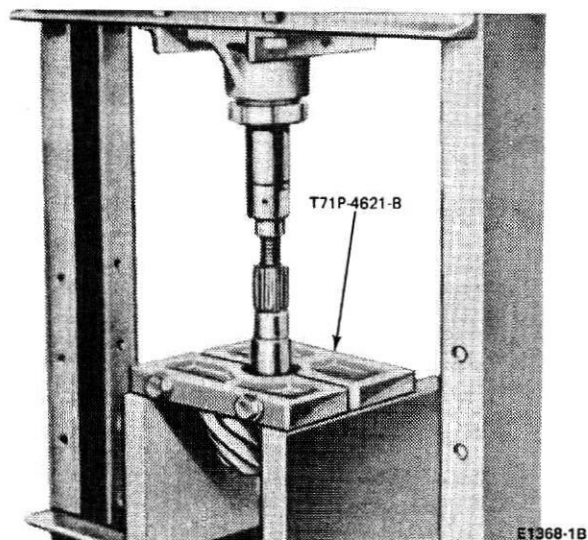


FIG. 31 Removing Pinion Rear Bearing Cone

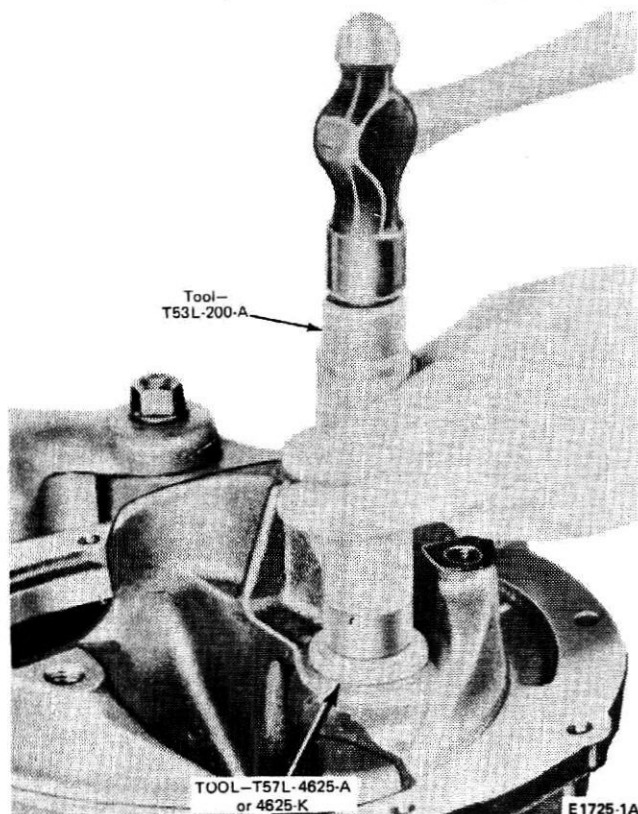


FIG. 32 Removing Pilot Bearing

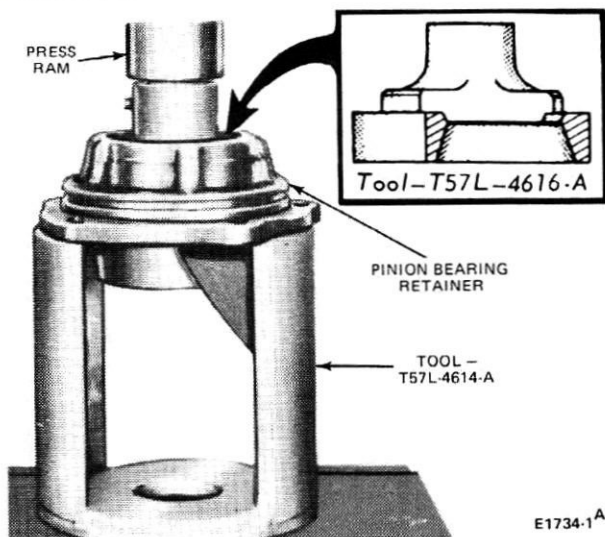


FIG. 33 Removing Pinion Front Bearing Cup

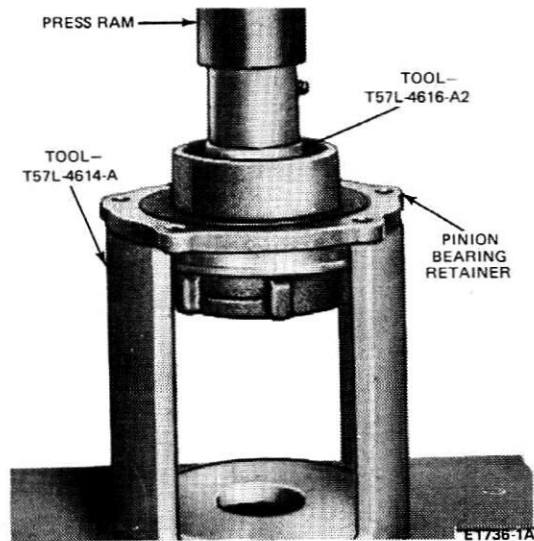


FIG. 36 Installing Pinion Front Bearing Cup

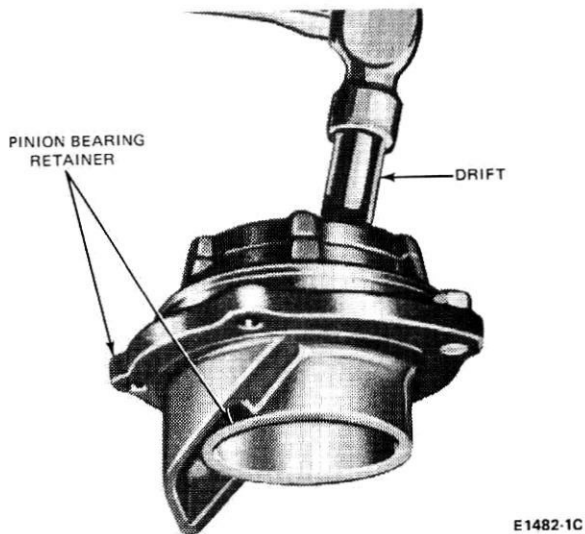


FIG. 34 Removing Pinion Front Bearing Cup

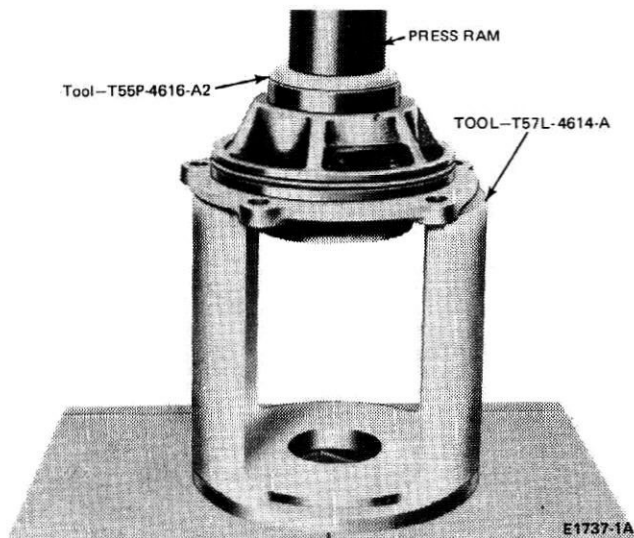


FIG. 37 Installing Pinion Rear Bearing Cup

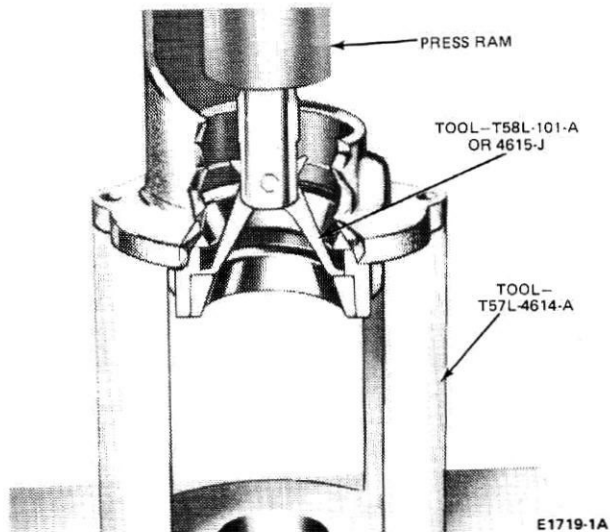


FIG. 35 Removing Pinion Rear Bearing Cup

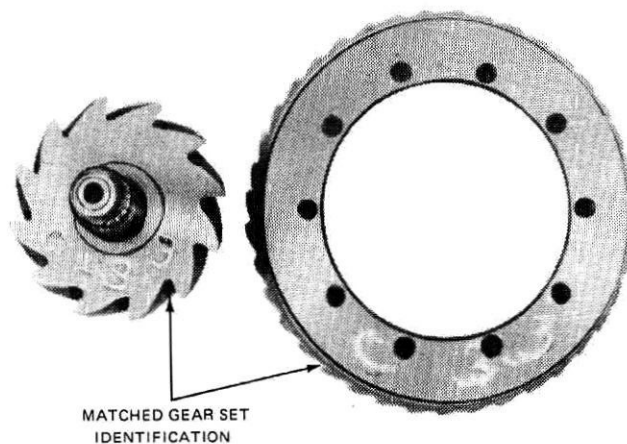


FIG. 38 Pinion and Ring Gear Markings

reading.) The fit should be a slight drag-type feeling.

7. After the correct feeler gauge feel is obtained, check the reading in the conversion chart in Fig. 40. The chart indicates the shim thickness required according to the feeler gauge reading.

NOTE: Inspect the service pinion gear that will be used for this build-up. If the pinion head is marked with a plus (+) or a minus (-) number, the amount shown as plus must be added and the amount shown as minus must be subtracted from the shim thickness as determined above. In addition, the same new rear pinion bearing used in determining shim thickness must be used in final assembly.

8. After determining the correct shim thickness as explained in the fore-going steps, install the new pinion and ring gear as outlined under Assembly.

DIFFERENTIAL CASE BEARINGS AND RING GEAR TEST

If the ring gear runout check (before disassembly) exceeded specifications, the condition may be caused by a warped gear, a damaged case, or excessively worn differential bearings.

To determine the cause of excessive runout proceed as follows:

1. Assemble the two halves of the differential case together **without** the ring gear, and press the two differential side bearings on the hubs.
2. Place the cups on the bearings and set the differential case in the carrier.
3. Install the bearing caps and adjusting nuts as outlined in Steps 11 thru 14 under Assembly and Installation of Conventional Differential Case which follows in this Part of the manual.
4. Tighten the right nut two notches beyond the position where it first contacts the bearing cup. Turn the differential case several revolutions in each direction while the bearings are loaded, to seat the bearings in the cups. **This step is important.**
5. Now, loosen the right nut to release the preload. Check to see that the left nut contacts the bearing cup. Using the dial indicator set-up shown in Fig. 13, Part 15-01, adjust the preload to 0.008 to 0.012 case spread for new bearings or 0.005 to 0.008 for the original bearings, if re-used.
6. Check the runout of the differential case flange with a dial indicator. If the runout does **not** now exceed specification, install a new ring gear. **If the runout still exceeds specification, the ring gear is true and the trouble is due to either a damaged case or worn bearings.**
7. Remove the differential case from the carrier and remove the side bearings from the case.
8. Install new bearings on the case hubs, and place the differential assembly in the carrier without the ring gear.
9. Check the case runout again with the new bearings. If the runout is now within limits, the old bearings were excessively worn. Use the new bearings for

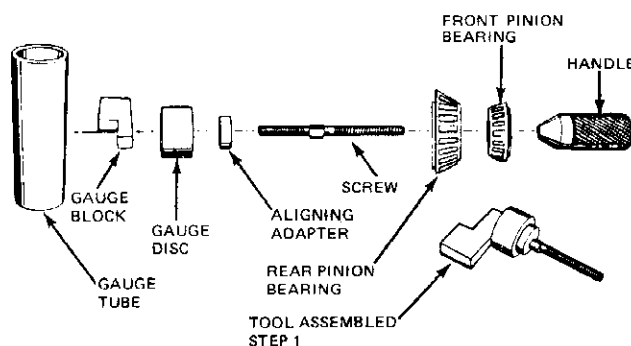


CHART I

Dash Number	Description	Removable Carriers	
		8.0	9.0
-A1	Aligning Adapter (1.300 O.D.)		X
-A8	Gauge Tube (2.892 O.D.)	X	X
-A9	Screw	X	X
-A10	Gauge Block (1.700 Thick)	X	X
-A11	Handle	X	X
-A12	Gauge Disc (.820 Thick)	X	
-A13	Gauge Disc (1.189 Thick)		X
-A14	Aligning Adapter (1.175 O.D.)	X	

F2517-1A

FIG. 39 Rear Axle Pinion Depth Gauge Tool (T75P-4020-A).

assembly. If the runout is still excessive, the case is damaged and should be replaced.

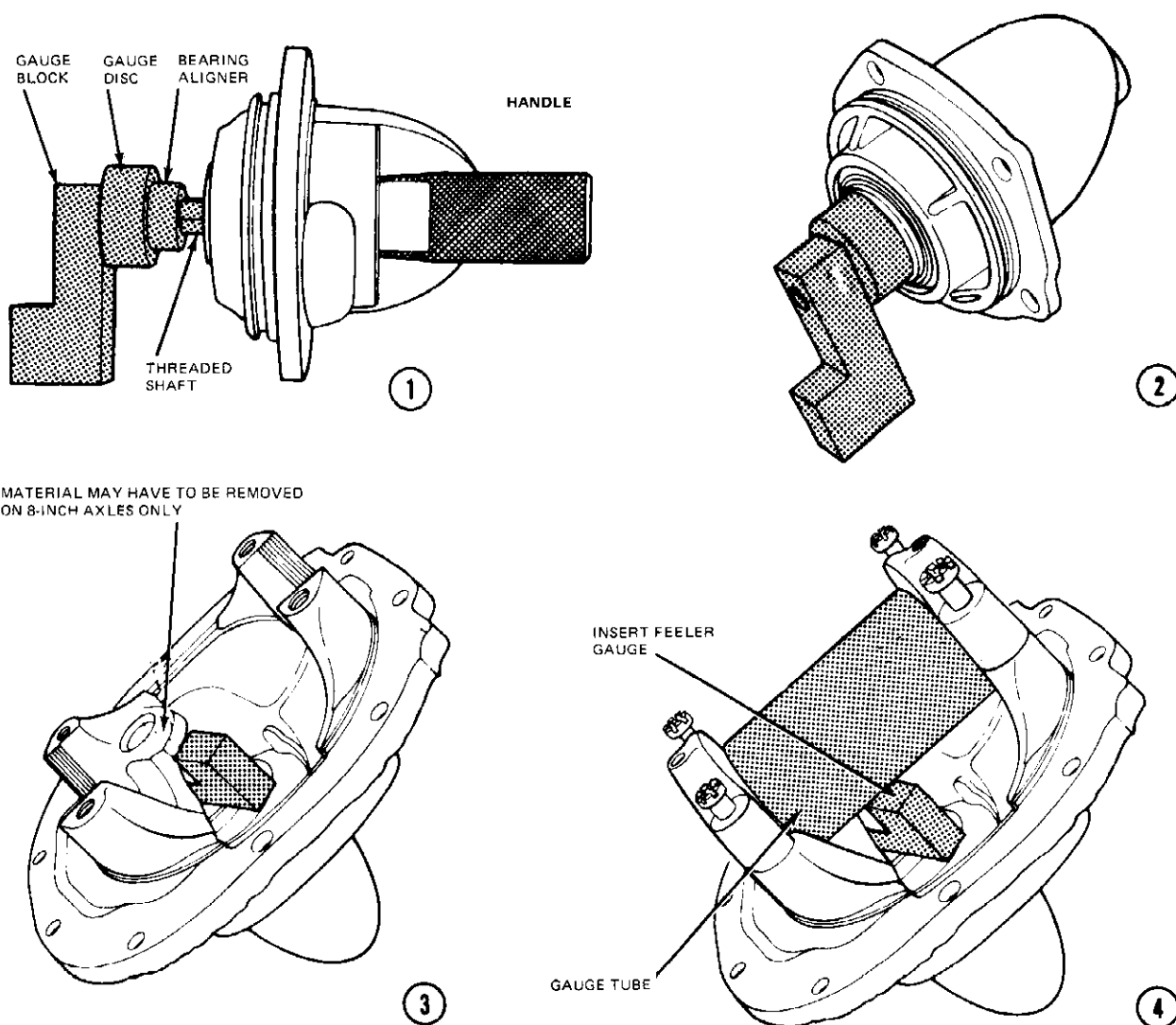
DIFFERENTIAL CARRIER ASSEMBLY

Pilot Bearing Installation

1. Drive the new pilot bearing inward until it bottoms. See Fig. 41.
2. Using the same tool shown in Fig. 41, install the new pilot bearing retainer with the concave side up.

Collapsible Pinion Bearing Spacer Installation

1. Install the drive pinion rear bearing cone and roller on the pinion shaft (Fig. 42). Place a new spacer on the pinion shaft (Fig. 43).
2. Place the bearing retainer on the pinion shaft, install the front bearing cone and roller, and press into position (Fig. 44). Be careful not to crush the bearing spacer.
3. Lubricate the O-ring with axle lubricant and install it in its groove in the pinion retainer. Be careful not to twist it. Snap the O-ring into position.
4. Place the proper shim on the carrier housing and install the pinion and retainer assembly, being careful not to pinch the O-ring.
5. Install the pinion attaching bolts, and torque to specification.
6. Place the slinger over the pinion shaft and against the front bearing.
7. Install a new seal in the bearing retainer (Fig. 46).
8. Install the U-joint flange (Fig. 47).
9. Start a new integral nut and washer on the pinion shaft.



Feeler Gauge Reading	Shim Required	Feeler Gauge Reading	Shim Required	Feeler Gauge Reading	Shim Required
.035	.005	.023	.017	.011	.029
.034	.006	.022	.018	.010	.030
.033	.007	.021	.019	.009	.031
.032	.008	.020	.020	.008	.032
.031	.009	.019	.021	.007	.033
.030	.010	.018	.022	.006	.034
.029	.011	.017	.023	.005	.035
.028	.012	.016	.024	.004	.036
.027	.013	.015	.025	.003	.037
.026	.014	.014	.026	.002	.038
.025	.015	.013	.027		
.024	.016	.012	.028		

FIG. 40 Using Pinion Depth Gauge Tool T75P-4020-A