

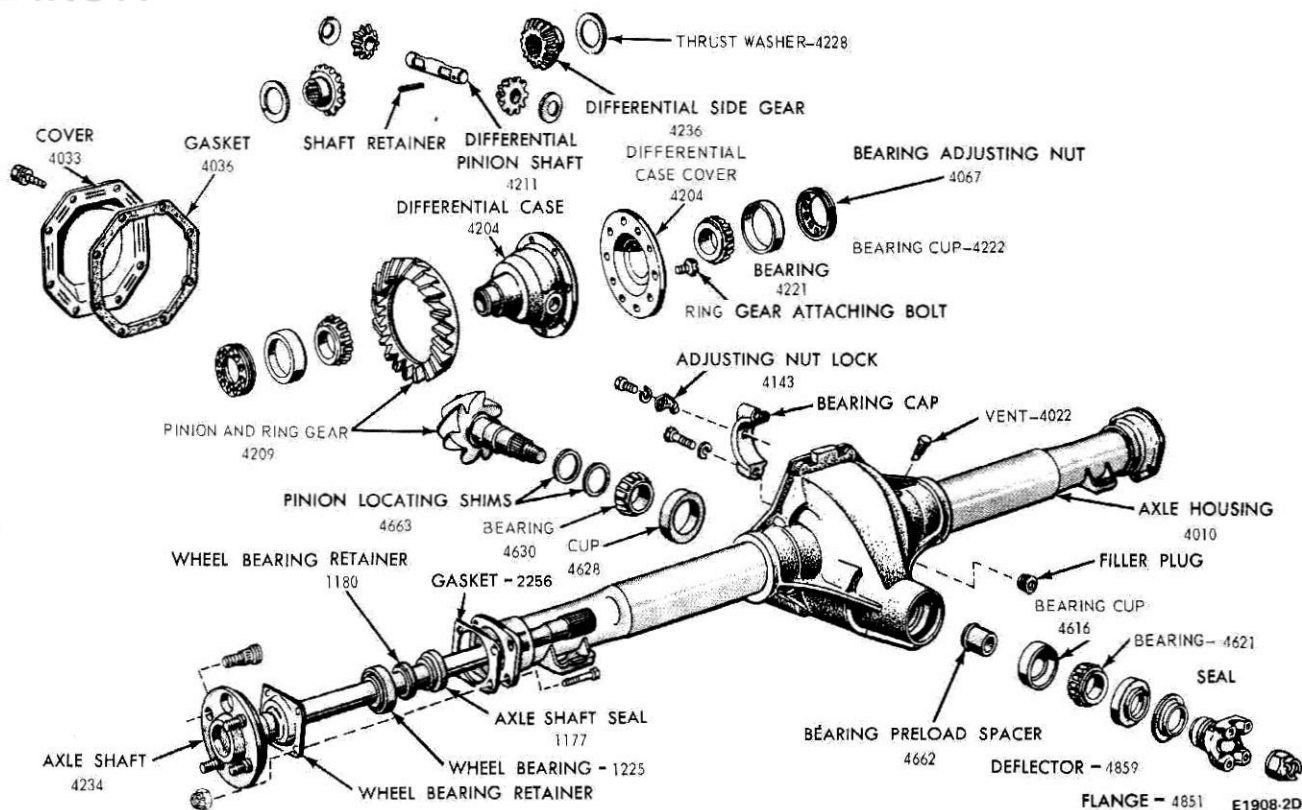


FIG. 13 Disassembled Typical Integral Carrier Axle

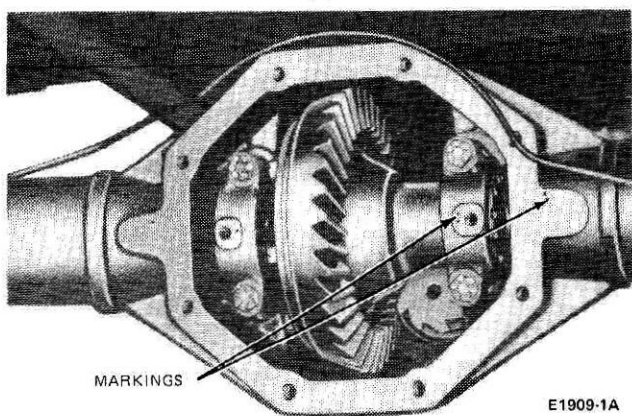


FIG. 14 Typical Differential Bearing Cap Marking

PARTS REPAIR OR REPLACEMENT

Clean and inspect all the parts as outlined under Cleaning and Inspection in Part 15-01. Before assembling the carrier, repair or replace all parts as indicated by the inspection.

In addition to the replacement procedures which follow, see DISASSEMBLY AND ASSEMBLY on preceding pages in this Part.

PINION BEARING CUPS

Do not remove the pinion bearing cups from the carrier casting unless the cups are worn or damaged.

If the pinion bearing cups are to be replaced, drive them out of the carrier casting with a drift. Install the

new cups with the tool shown in Fig. 20. Make sure the cups are properly seated in their bores. If a 0.0015-inch feeler gauge can be inserted between a cup and the bottom of its bore at any point around the cup, the cup is not properly seated.

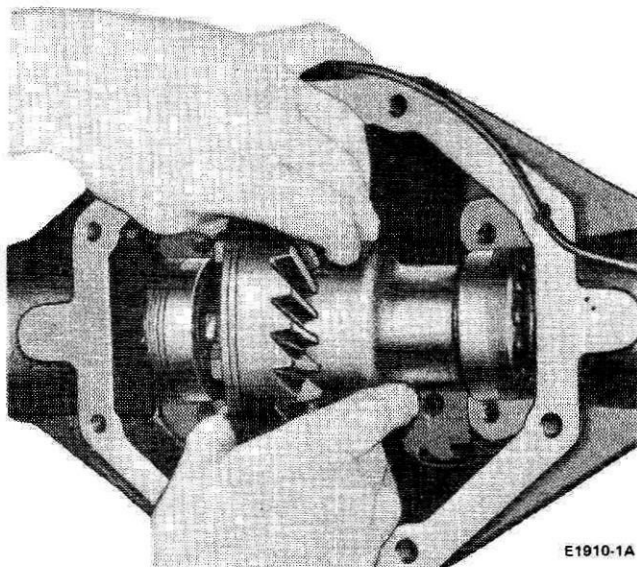
Whenever the cups are replaced, the cone and roller assemblies should also be replaced.

DRIVE PINION AND GEAR SET

Individual differences in machining the carrier casting and the gear set require a shim between the pinion rear bearing cone and the pinion gear, to locate the pinion for correct tooth contact with the ring gear.

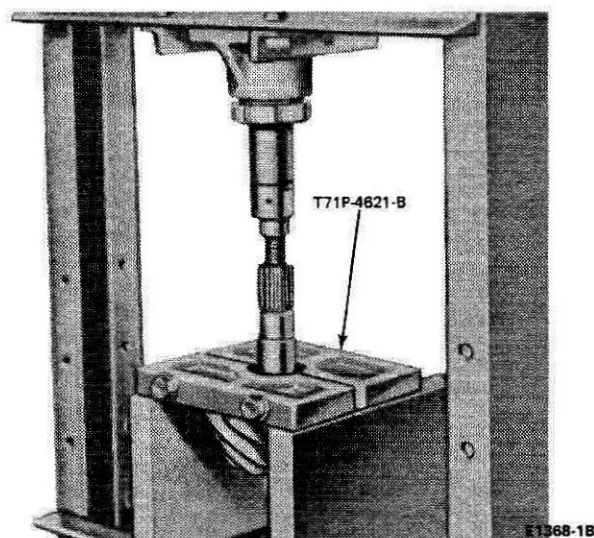
When replacing a ring gear and pinion, note that the **original** factory installed shim is of the correct thickness to adjust for individual variations in both the carrier casting dimension and in the original gear set dimension. Therefore, to select the correct shim thickness for the new gear set to be installed, follow these steps:

1. With a micrometer, measure the thickness of the original shim removed from the axle, and use the same thickness upon installation of the replacement carrier assembly or drive pinion.
2. If further shim change is necessary, it will be indicated in the tooth pattern check.
3. If the original shim is lost, substitute a nominal shim, and use the tooth pattern check to determine if further shim changes are required. Nominal shim thickness is 0.030. Shims are available from 0.015 to 0.030 inch. When more than 0.030 is required, a combination of shims can be used.



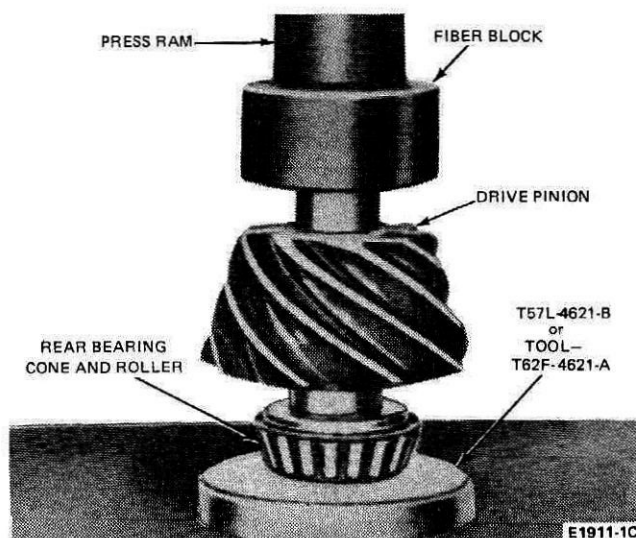
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FIG. 15 Differential Case Removal or Installation



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FIG. 16 Removing Pinion Rear Bearing Cone



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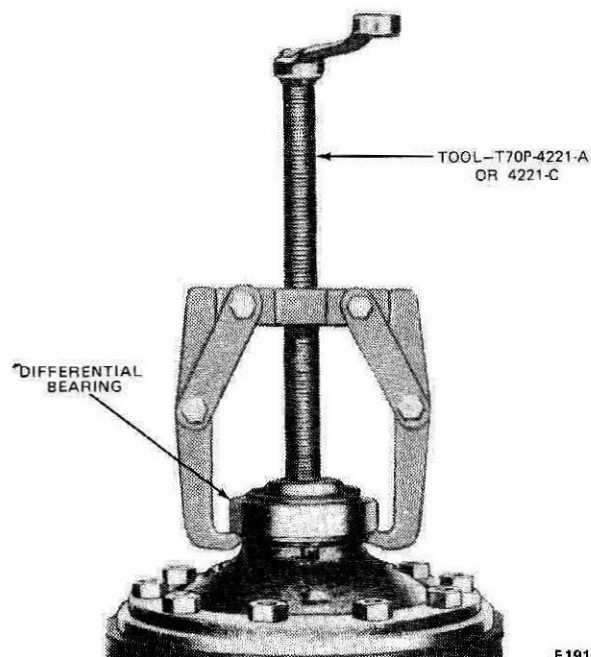
FIG. 17 Installing Pinion Rear Bearing Cone

A new ring gear and pinion should always be installed in an axle as a matched set (never separately). Be sure the same identifying (matching) number, painted in white, appears on the bolt hole face of the ring gear and on the head of the drive pinion (Fig. 21).

4. After determining the correct shim thickness as explained in the foregoing steps, install the new pinion and ring gear as outlined under ASSEMBLY OF AXLE.

DRIVE PINION AND GEAR SET (ALTERNATE PROCEDURE USING TOOL T70P-4020-A)

1. Using pinion depth gauge set, Tool T70P-4020-A, select the correct aligners (they are marked to correspond with the correct axle) to fit the front and rear pinion bearing I.D. Screw these on the threaded shaft to the correct position (Fig. 22) and then screw on the correct dummy pinion head (also marked).
2. Place the rear pinion bearing over the aligner and against the dummy pinion head. Insert this assembly in the rear bearing cup.
3. Place the front bearing over the aligner and into the front bearing cup simultaneously. Spin the adjusting nut on the threaded shaft until it contacts the front bearing. Hand tighten until both bearings are securely seated (approx. 5-20 in-lb). When this operation is completed, both bearings should rotate freely but snugly.
4. Align and place the dummy differential bearing inserts into the differential bearing bores making sure they do not contact the threads behind the bore. Install the bearing caps. The crossbar should now slide freely within the inserts.
5. Check to see that the indicator arm is attached securely to the gauge block. The spring washers



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FIG. 18 Differential Bearing Removal

- should hold it flatly to the gauge block when the shoulder screw is fully bottomed.
- Securely attach a standard indicator (Tool-4201-C, Tool 6565 or equivalent) to the indicator arm. Set the indicator to zero while the indicator pointer is on the gauge block.
 - Place the gauge block on the dummy pinion head and rotate the indicator over the crossbar. The correct reading will be obtained when the indicator is at top dead center over the crossbar (readings are usually 0.020-0.040). Because of the necessary dial indicator position the use of a mirror will simplify reading the results.

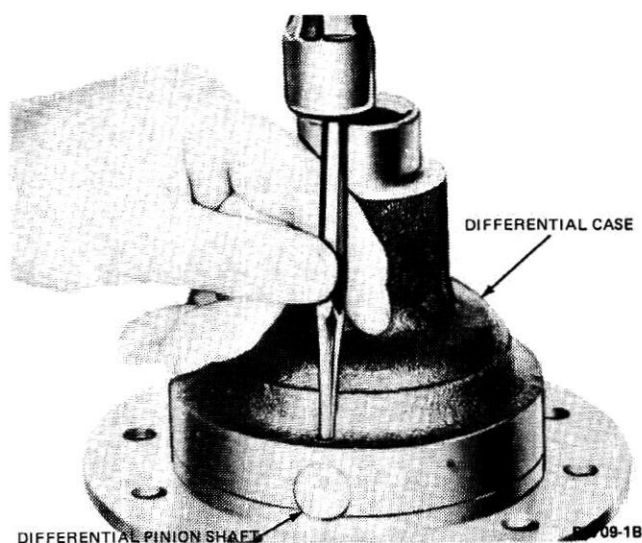


FIG. 19 Removing Differential Pinion Shaft Lock Pin

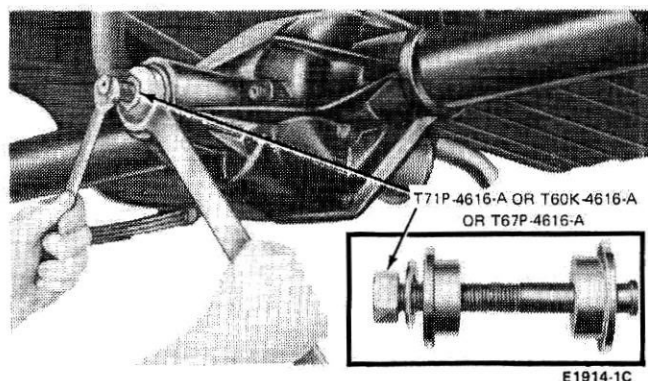


FIG. 20 Pinion Bearing Cup Removal or Installation

- Inspect the pinion gear that will be used for this buildup. It will have ONE of THREE markings:
 - plus (+) marking (+.002)
 - minus (-) marking (-.001)
 - or no marking

Subtract the plus marking from the reading obtained in Step 7 for the correct shim thickness.

Add the minus marking to the reading obtained in Step 7 for the correct shim thickness.

- After making the correct shim selection remove the Tool T70P-4020-A from the carrier. Place the shim(s) on the pinion shaft and press on the rear bearing.

DRIVE PINION AND GEAR SET (ALTERNATE PROCEDURE USING TOOL T75P-4020-A)

- Refer to Fig. 23 and assemble the appropriate aligning adapter, gauge disc and gauge block to the screw as shown on the illustration.
- Place the rear pinion bearing (new, or used if in good condition) over the aligning disc and insert into the pinion bearing cup of the carrier. Place the front bearing into the bearing cup and assemble the tool handle onto the screw and hand tighten (Fig. 24).
- Center the gauge tube into the differential bearing bore. Install the bearing caps and tighten the bolts to specification (Fig. 24).
- Using a feeler gauge tool, select the thickest feeler blade that will enter between the gauge tube and the gauge block (Fig. 24). Insert the feeler blade directly along the gauge block to insure a correct reading. The feeler blade fit should be a slight drag-type feeling.
- After the correct feel is obtained, check the reading. This is the thickness of the shim required, providing the replacement pinion has no plus or minus readings shown on it.

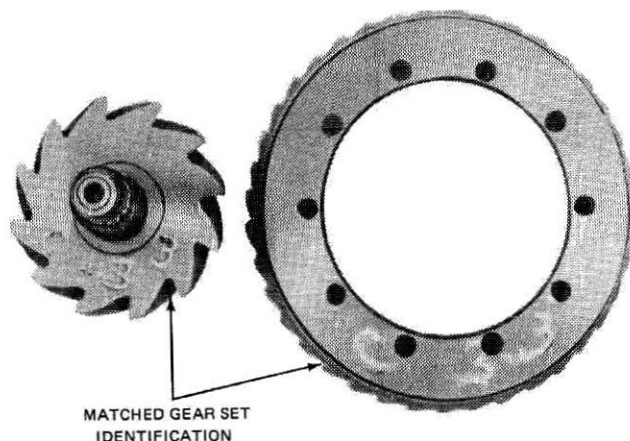


FIG. 21 Pinion and Ring Gear Marking

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