WORKSHEET FOR CALCULATING RING GEAR BACKLASH AND DIFFERENTIAL BEARING PRELOAD SHIMS

(1) Total amount of space measured without ring gear as shown in step 41, figure 3-40 — Measurement A _____

(2) Total amount of space measured with gear set assembled in carrier as shown in step 44, figure 3-43 — Measurement B _____

(3) Measurement A minus Measurement B equals calculated — Measurement C _____

After the measurements and calculations have been made, assemble the shim packs using the figures determined in A, B, & C, and adjusting the pack as described below.

RING GEAR SIDE:
Assemble shim pack to measurement B.

OPPOSITE SIDE OF RING GEAR:
Assemble shim pack to measurement C. Add .010 (.25 mm) for differential bearing preload and backlash.

EXAMPLE

(1) Total amount of space measured without ring gear as shown in step 41, figure 3-40 — Measurement A .105" (2.67 mm)

(2) Total amount of space measured with gear set assembled in carrier as shown in step 44, figure 3-43 — Measurement B .065" (1.65 mm)

(3) Measurement A minus Measurement B equals calculated — Measurement C .040" (1.02 mm)

After the measurements and calculations have been made, assemble the shim packs using the figures determined in A, B, & C, and adjusting the pack as described below.

RING GEAR SIDE:
Assemble shim pack to measurement B. In this example it is .065" (1.65 mm).

OPPOSITE SIDE OF RING GEAR
Assemble shim pack to measurement C. Add .010 (.25 mm) for differential bearing preload and backlash. .040" + .010" = .050", (1.02 mm + .25 mm = 1.27mm).

Figure 3-46

Step (47) Assemble differential bearing cups to differential bearing cones. Install differential assembly into carrier. Use a rawhide or plastic hammer to seat differential assembly into cross bores of carrier. Care should be taken to avoid nicking the teeth of the ring gear and pinion during assembly. Remove spreader.

WARNING: When differential assembly is installed into carrier, use care to avoid pinching hand or fingers between differential bearing cup and carrier housing. Gear teeth may have sharp edges. When handling gear, use care to avoid cutting hands.

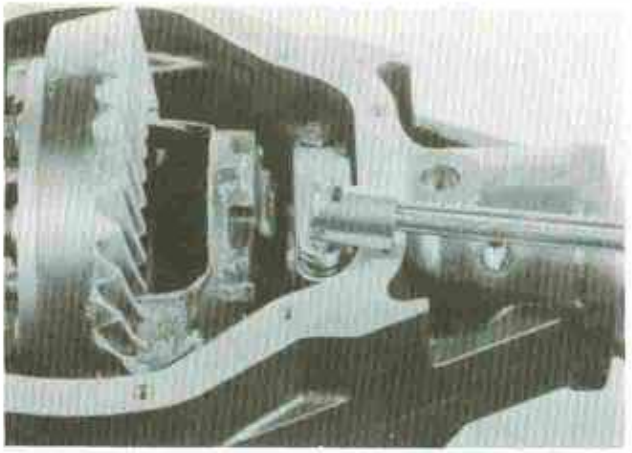

Figure 3-47

Step (48) Install bearing caps. Make sure the letters stamped on the caps correspond with those on the carrier. Torque bearing cap screws to specification.

TOOLS: Torque Wrench

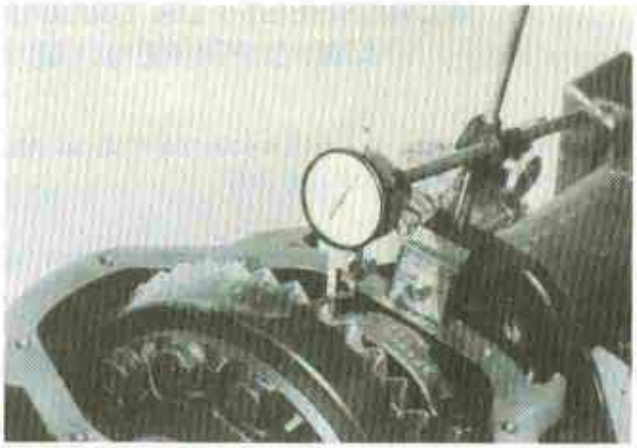

Figure 3-48

Step (49) Check ring gear and pinion backlash in three equally spaced points with dial indicator as shown. Backlash should be within specification and cannot vary more than .002 (.05 mm) between points checked.

TOOLS: D-128 Dial Indicator Set

High backlash is corrected by moving the ring gear closer to the pinion.

Low backlash is corrected by moving the ring gear away from the pinion.

These corrections are made by switching shims from one side of the differential case to the other.

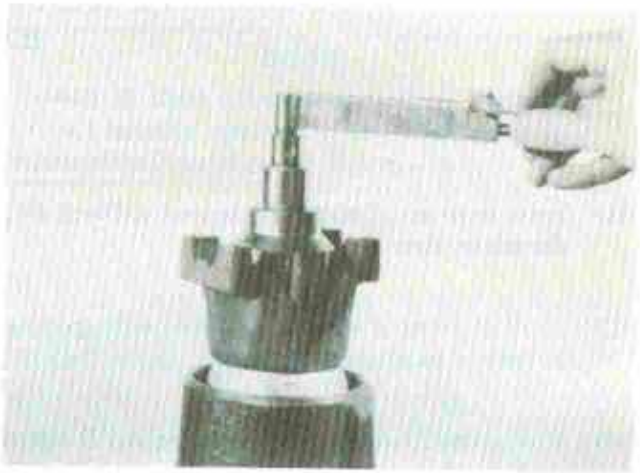

Figure 3-49

Step (50) Using an in. lb. torque wrench as shown, rotate pinion and differential assembly, Torque reading should be within specification. If preload is to high, remove an equal amount of shims from both sides of the differential case hubs. If preload is to low, add an equal amount of shims to both sides of differential case hubs.

NOTE

If shims are added to one side only, it will affect backlash reading.

APPLYING RTV SILICONE GASKET SEALER TO COVER PLATE

Figure 3-50

Step (51) Apply gasket sealer to cover plate and assemble to carrier. Torque screws to specification.

TOOLS: Torque Wrench

NOTE

The cover face of the carrier and the flat surface of the cover plate must be free of any oil film or foreign material. Sealant material must meet specifications as described in the specification section of this manual.

Apply sealer to cover plate surface. Ensure that the sealer bead is laid on the inside of the cover screw holes. The bead is not to pass through the holes or outside of the holes.

The bead is to be ⅛" to ¼" (3.18 - 6.35 mm) high and ⅛" to ¼" (3.18 - 6.35 mm) wide.

Allow one hour cure time before filling carrier with the proper amount of specified lubricant and vehicle operation.

Assemble axle shafts and wheel end components. Refer to your vehicle service manual for proper wheel bearing setting specification.