

preload cannot be obtained at 210 ft. lbs. (285 N·m), continue tightening pinion nut in small increments and checking until proper preload is obtained. Bearing preload should be uniform during complete revolution. A preload reading that varies during rotation indicates a binding condition which must be corrected. The assembly is unacceptable if final pinion nut torque is below 210 ft. lbs. (285 N·m) or pinion bearing preload is not within specifications.

**Under no circumstances should the pinion nut be backed off to lessen pinion bearings preload. If the desired preload is exceeded a new collapsible spacer must be installed and nut retightened until proper preload is obtained.**

(29) Coat differential bearing cones, cups and adjusters with axle lubricant. Carefully position differential assembly complete with bearing cups into housing.

(30) Install differential bearing caps on their respective sides, using marks made at disassembly.

(31) Install bearing cap bolts. Tighten top bolts to 10 ft. lbs. (14 N·m). Tighten bottom bolts only finger tight until head is just seated on bearing cap.

### DIFFERENTIAL BEARING PRELOAD AND DRIVE GEAR BACKLASH

There are two precautions which must be observed when adjusting differential bearing preload and drive gear backlash. (A) Permissible backlash variation is .003 inch, for example, if the backlash is .006 inch at the minimum point, it may be .009 at the maximum point. This variation would be permissible runout. It is therefore important to index the gears so that the same teeth are engaged during all backlash measurements. (B) It is also important to maintain specified adjuster torque to obtain accurate differential bearing preload and drive gear backlash settings. Excessive torque will introduce high bearing load and cause premature bearing failures. Inadequate torque will not support the drive gear properly and may lead to free play of the differential assembly and excessive drive gear noise. **Differential bearing cups will not always move directly with the adjusters, therefore to insure accurate adjustment changes and to maintain gear mesh index, bearings must be seated by oscillating drive pinion a half turn in each direction five to ten times each time adjusters are moved.**

(1) Using Tool C-4164 turn each hex adjuster in (Fig. 12) until bearing free play is eliminated with some drive gear backlash (approximately .010 inch) existing between drive gear and pinion. Seat rollers per note above.

(2) Install dial indicator Tool C-3339 (Fig. 30)

and position contact point against drive side of gear tooth. To find point of minimum backlash, check backlash at 4 positions at approximately 90 degree intervals around drive gear. Rotate gear to position of least backlash. Mark the index so that all backlash readings will be taken with the same teeth in mesh.

(3) Loosen right adjuster and tighten left adjuster until the backlash is .003 to .004 inch with each adjuster tightened to 10 ft. lbs. (14 N·m). Again seat bearings per note. Tighten differential bearing cap bolts to 45 ft. lbs. (61 N·m) on 7-1/4 inch axles, 100 ft. lbs. (136 N·m) on 8-1/4 inch axles. Using Tool C-4164 tighten right hex adjuster to 70 ft. lbs. (95 N·m). Again seat bearings per note. Continue to tighten right adjuster and seat rollers until torque remains constant at 70 ft. lbs. (95 N·m). Measure backlash. If backlash does not measure between .003 to .006 inch on 7-1/4 inch axles and .005 to .008 on 8-1/4 inch axles, increase torque on right adjuster and seat bearings per note until correct backlash is obtained. Tighten left adjuster to 70 ft. lbs. (95 N·m). Seat bearings per note until torque remains constant. **If all previous steps have been properly performed, initial reading on left adjuster will be approximately 70 ft. lbs. (95 N·m). If it is substantially less, complete procedure must be repeated.**

(4) After adjustments are completed, install adjuster locks. Be sure lock teeth on 7-1/4 inch axles are engaged in adjuster threads and lock finger is engaged in adjuster hole on 8-1/4 inch axles. Tighten lock screws to 90 in. lbs. (10 N·m).

### DIFFERENTIAL SIDE GEAR CLEARANCE CHECKING AND ADJUSTMENT

Correct differential side gear clearance is obtained by selection of the correct thickness side gear thrust washer. Check parts catalog for the

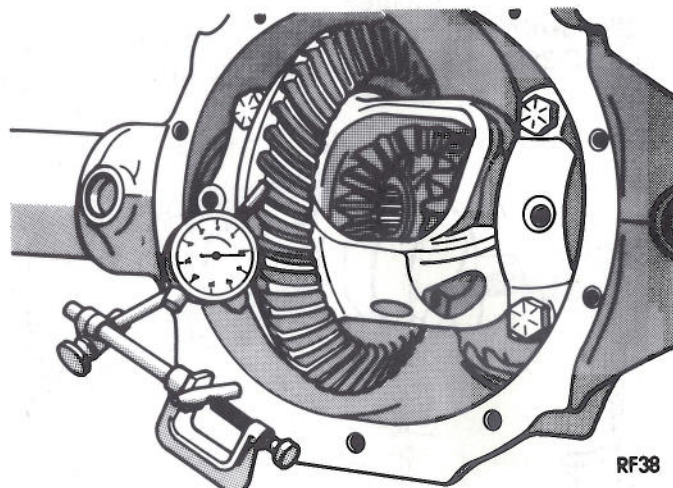


Fig. 30—Dial Indicator Installed to Check Backlash