

PF166

Fig. 38—Dial Indicator Installed to Check Backlash (Typical)

and 8-1/4 inch axles and 75 foot-pounds (101 Newton-metres) on 9-1/4 inch axles. Again seat bearings per note. Continue to tighten right adjuster and seat rollers until torque remains constant at 70 foot-pounds (94 Newton-metres) for 7-1/4 inch and 8-1/4 inch axles and 75 foot-pounds (101 Newton-metres) for 9-1/4 inch axles. Measure backlash. If backlash does not measure between .004 to .006 inch on 7-1/4 inch axles and .006 to .008 on 8-1/4 inch and 9-1/4 inch axles, increase torque on right adjuster and seat bearings per note until correct backlash is obtained. Tighten left adjuster to 70 foot-pounds (94 Newton-metres) on 7-1/4 inch and 8-1/4 inch axles and 75 foot-pounds (101 Newton-metres) on 9-1/4 inch axles. 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 foot-pounds (94 Newton-metres) on 7-1/4 inch and 8-1/4 inch axles and 75 foot-pounds (101 Newton-metres) on 9-1/4 inch axles. 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 and 9-1/4 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 inch-pounds (11.682 Newton-metres).

GEAR TOOTH CONTACT PATTERN

(1) Apply a thin coat of Hydrated Ferric Oxide, commonly known as Yellow Oxide of Iron, or equivalent to both the drive and coast side of the drive gear teeth. Rotate drive gear one complete revolution in both directions while load is being applied with a round bar or screwdriver between the carrier casting and differential case flange. This action will leave a distinct contact pattern on both the drive and coast side of the drive gear teeth.

The gear tooth contact pattern will disclose whether the correct rear pinion bearing mounting shim has been installed and the drive gear backlash set properly. Backlash between the drive gear and pinion must be maintained within the specified limits until correct tooth contact pattern is obtained.

(2) Observe the contact pattern on the drive gear teeth and compare with those in Figs. 39, 40 and 42 to determine if pattern is properly located. With pinion depth of mesh and gear backlash set properly, your contact pattern should resemble that in Fig. 39. Notice that the correct contact pattern is well centered on both drive and coast sides of the teeth. When tooth contact patterns are obtained by hand, they are apt to be rather small. Under the actual operating load, however, the contact area increases.

(3) If after observing the contact pattern you find it resembles that in Fig. 40, the drive pinion is too far away from centerline of the ring gear, the contact pattern will appear high on the heel on drive side and high on toe on coast side. To correct this type tooth contact pattern, increase the thickness of shim pack located behind the rear pinion bearing cup on 8-1/4 inch axles and behind the rear pinion bearing cone on 7-1/4 inch and 9-1/4 inch axles (Fig. 41), which will cause the high heel contact on drive side to lower and move toward the toe; the high toe contact on coast side will lower and move toward the heel.

(4) If after observing the contact pattern you find it resembles that in Fig. 42, the drive pinion is too close to the centerline of the ring gear, the pattern will appear low on the toe on drive side and low heel contact on coast side. To correct this type tooth contact pattern, decrease the thickness of shim pack located behind the rear pinion bearing cup on 8-1/4 inch axles and behind the rear pinion bearing cone on 7-1/4 inch and 9-1/4 inch axles (Fig. 43), which will cause the low toe contact on drive side to raise and move toward the heel; low heel contact on coast side will raise and move toward the toe.

(5) When correct tooth contact pattern is obtained, install propeller shaft, aligning scribe marks

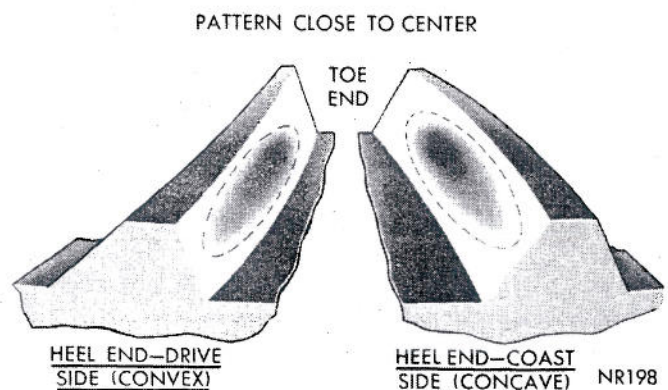


Fig. 39—Desired Tooth Contact Under Light Load