

measurement with the "C" locks in place. Remove the "C" lock on the side (or sides) having no axle shaft end play. While you have the differential apart, use a micrometer to measure the thrust washer thickness. Record your measurement and place the thrust washer back behind the side gear. Assemble the differential without the "C" lock installed and measure the side gear clearance again.

If the clearance changes less than .012 inch with the "C" locks removed, add the side gear clearance you recorded (when the "C" lock was in place) to the thrust washer thickness you measured with the micrometer. The total will help you determine which thrust washer to install. For example, if the clearance is .006 inch with the "C" lock in and .015 inch with the "C" lock removed, the change is .009 inch, less than .012 inch. So add .006 inch (the clearance with the "C" lock in place) to the thrust washer thickness; for example, .032 inch. Your total is .038 inch. The closest thrust washer not exceeding .038 inch is .037 inch.

If the clearance increases more than .012 inch with the "C" lock removed, you need to replace both side gears and repeat the measurement tests. If side gear clearance still exceeds .012 inch when using new side gears and the thickest thrust washers from the service package, then the differential case must be replaced.

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

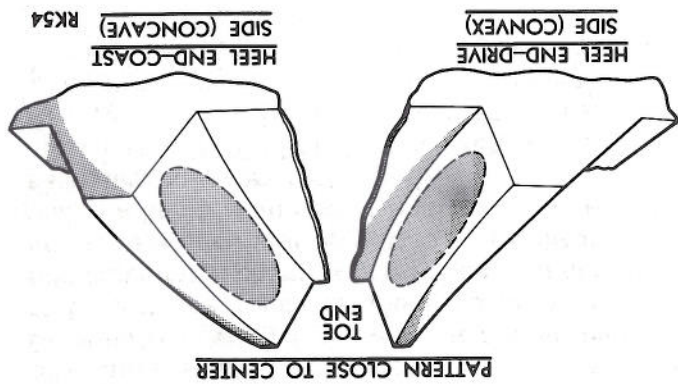


Fig. 32—Desired Tooth Contact Under Light Load

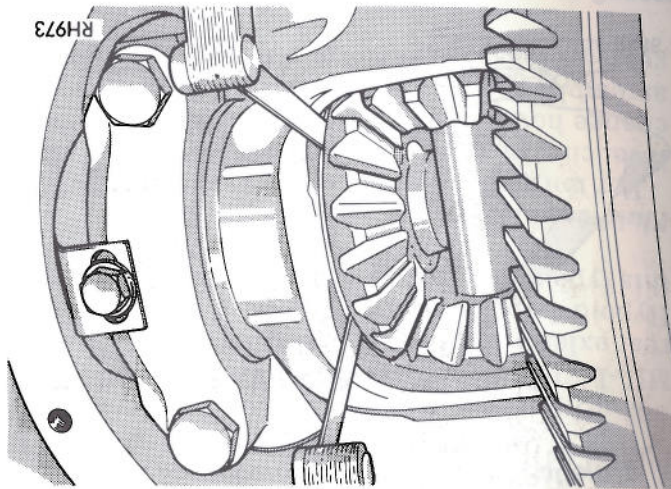


Fig. 31—Insert a Matched Pair of Thickness Gauges to Determine Clearance

applicable side gear thrust washer package required. When measuring side gear clearance treat each gear independently. It is possible for one side to have an acceptable clearance and for the other side to require servicing. In situations where you find it necessary to replace a side gear, install two new ones as a matching set.

(1) With the axle shaft and "C" locks in place, measure the clearances behind each side gear by inserting a matched pair of gauges on opposite sides of the hub (Fig. 31).

(2) If you measure .005" clearance, or less, see if the axle shaft on that side is contacting the pinion shaft. Do this with the gauges still in place behind the side gear. If the axle shaft does not contact the pinion shaft, the side gear fit is acceptable on that side. Repeat for other side.

(3) If you measured more than .005" clearance in step 1 and the axle shaft does not contact the differential pinion shaft, then record the side gear clearance. Remove the thrust washer and measure its thickness with a micrometer. Add the washer thickness to the side gear clearance you recorded. The sum of the two numbers will tell you which replacement washer to install. For example, if you find .007" side gear clearance, and measure thrust washer thickness at .033" the total is .040". Install the thickest thrust washer from the service package that does not exceed the total above. In this case you would install the .037" washer from the service package, since the next larger size .042" would be too thick. When re-assembled, side clearance should now be .004".

(4) In some cases the axle shaft will run up against the pinion shaft when feeler gauges are inserted behind the side gear. When this occurs, the "C" lock on the axle shaft prohibits the side gear from moving inward any farther. To find the total side gear clearance, measure the clearance again with the "C" lock out. Record your