



# Positive Traction Differentials

## FORD MOTOR CO. TRACTION-LOK (Cont.)

2) Place differential case in a suitable press to load bearing journals so preload of springs is overcome (approximately 1500 lbs.).

3) If a press is not available, two  $\frac{7}{16}$ " bolts and nuts can be used to compress case halves and overcome preload tension. Loosen the two Allen or Phillips head screws which hold case halves together until one or two threads remain engaged.

4) Remove case assembly from press. Tap on cover to spring it loose, then remove both screws. With cover facing down, lift off case. Remove preload spring plate and springs.

5) From the cover, remove side gear, four clutch plate ear guides, clutch hub, friction and seal clutch plates, and shims. With a drift, drive pinion shaft lock pins from case.

6) From end opposite lock pin hole, drive long pinion shaft from case. Remove two short pinion shafts and center block. Remove pinion gears, side gear and thrust washers.

### REASSEMBLY

1) Lubricate all parts with hypoid lubricant. Mount differential case in a soft-jawed vise and place a side gear thrust washer and side gear in counterbore of case.

2) Install pinion thrust washers and place pinion gears on side gear, aligning holes in washers and gears with holes in case. Install center block so shaft holes are aligned with holes in pinion gears and case.

side. Install shaft lock pins making sure pinion and side gears move freely.

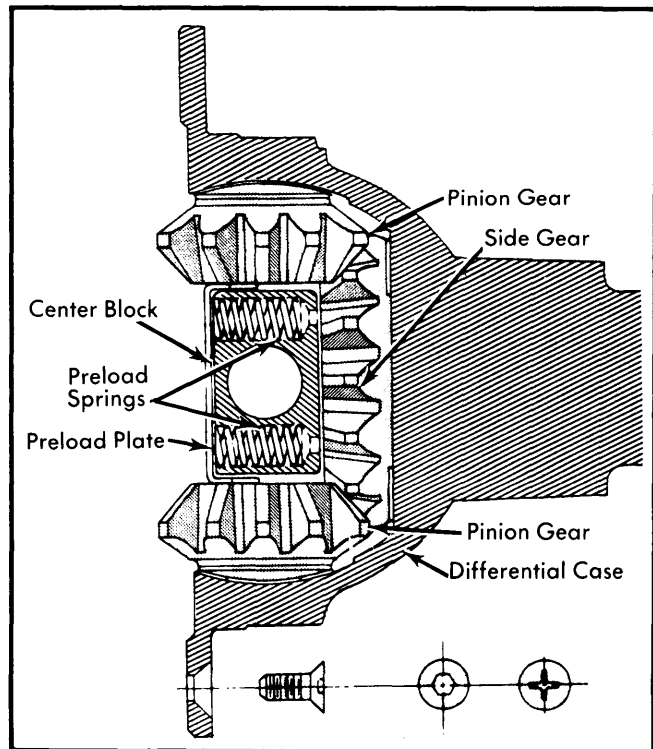


Fig. 3 Installation of Center Block & Preload Springs

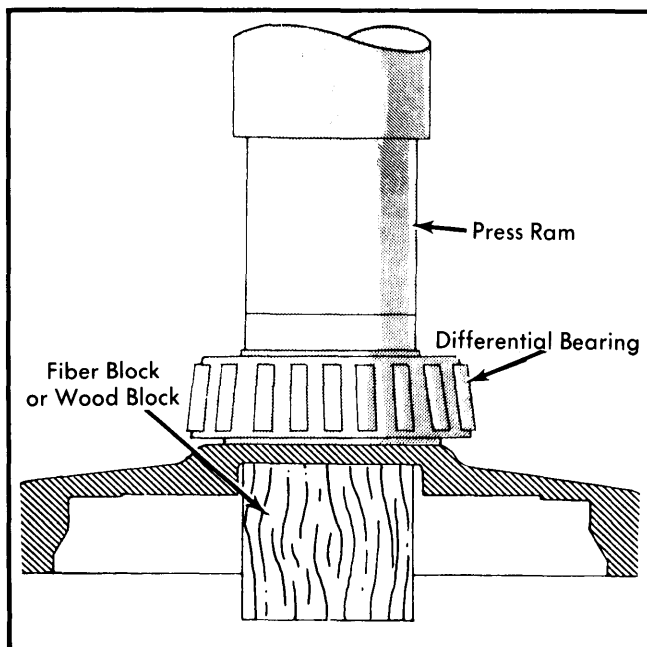


Fig. 2 Installation of Differential Bearing

3) Center block has two machined sides and two rough sides. With a brass drift, drive in long pinion shaft from outside of case aligning lock pin holes in shaft with holes in case.

4) Center block should be positioned so long shaft is driven through rough side and short shaft is driven through machined

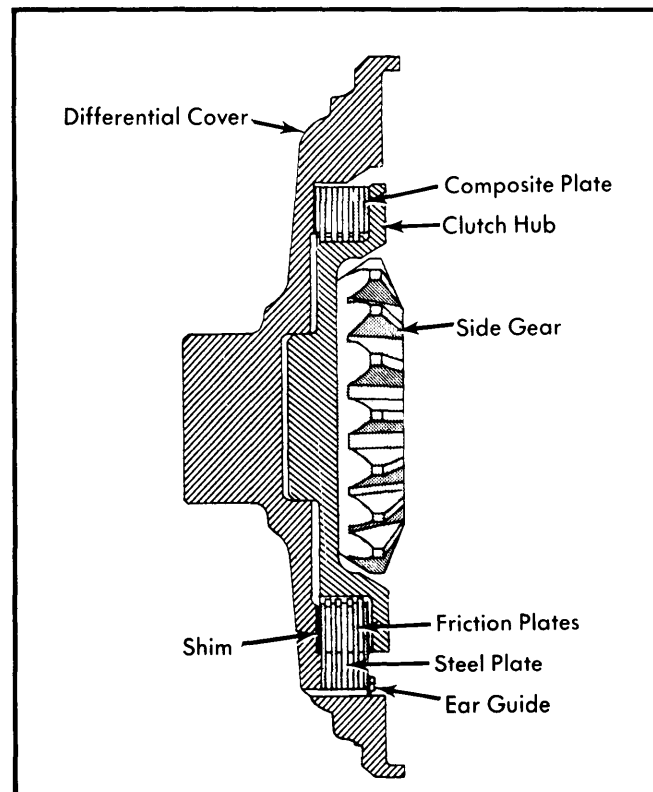


Fig. 4 Clutch Pack Installation

## FORD MOTOR CO. TRACTION-LOK (Cont.)

5) Place four preload springs in holes provided in center block. Position preload plate over the springs, making sure springs are properly seated. Preload plate straddles center block over its narrower (or machined) width.

6) Mount differential cover in soft-jawed vise and insert shim(s) of .050" total thickness in cover cavity. Install composite plate (friction material on one side and steel on the opposite side) on back of clutch hub with friction material against hub.

7) Next, install in order: friction plates and steel plates alternately with a steel plate last. When using new plates, soak in hypoid lubricant for 30 minutes prior to assembly.

8) Place clutch hub with clutch plates into ear cavities in differential cover, making sure splines on last friction plate are engaged on hub.

9) Using a 9/16" or 5/8" X 2 1/2" bolt with nut and washers, compress clutch pack and place shim template tool (T68P-4946-A) in clutch hub.

10) Some clearance should be maintained between shim tool and cover-to-case mating surface. Use a feeler gauge to determine exact clearance.

11) Use shim pack thickness chart to determine correct amount of shim(s) to subtract from .050" shim originally installed. Shim template tool must be used to make correct selection.

12) Remove bolt, nut and flat washers. If shim thickness needs to be changed, remove clutch hub and plates and install proper shim. Reinstall components in order and install four steel clutch ear guides and side gear.

13) Place both assemblies in a press and press the two halves together. Insert ring gear using new bolts coated with a small amount of Loctite, and torque evenly to 70-85 ft. lbs.

14) Check torque required to rotate one side gear while the other is held stationary. Torque required to keep side gear rotating with new clutch plates should be 100-250 ft. lbs.

15) With used clutch plates, minimum torque required is 40 ft. lbs. (Torque may fluctuate as much as 40 ft. lbs. when new plates are installed.)

### SHIM PACK THICKNESS CHART

Measured Clearance at Template	Shim(s) Thickness To Remove	Required Shim Pack Thickness
.001-.002"	None	.050"
.003-.007"	.005"	.045"
.008-.012"	.010"	.040"
.013-.017"	.015"	.035"
.018-.022"	.020"	.030"
.023-.027"	.025"	.025"
.028-.032"	.030"	.020"
.033-.037"	.035"	.015"
.038-.042"	.040"	.010"
.043-.047"	.045"	.005"
.048-.050"	.050"	None

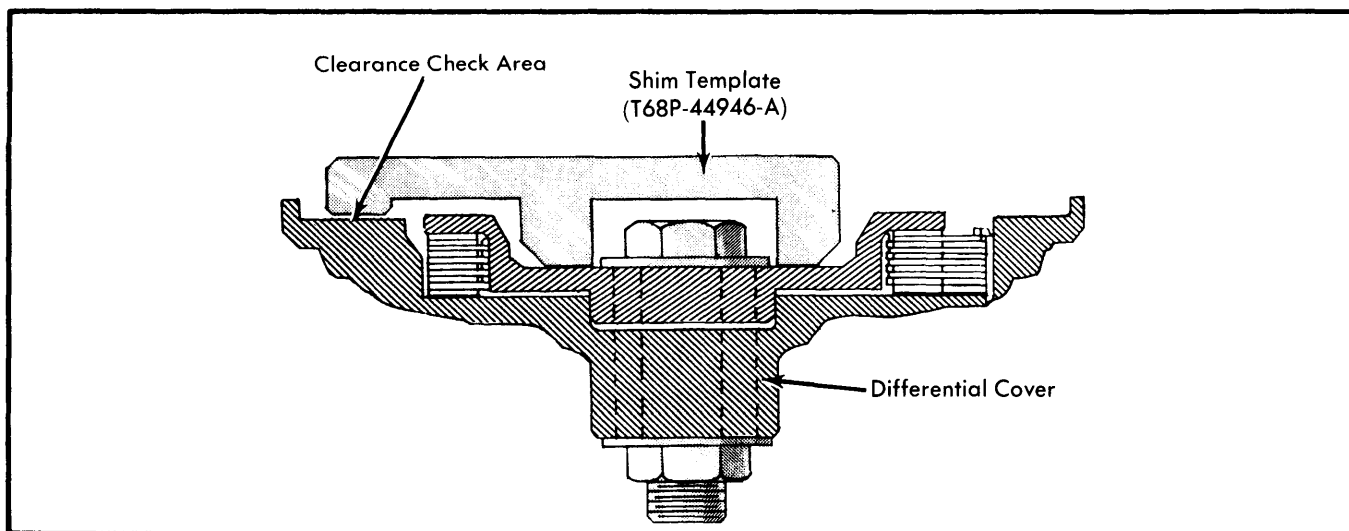


Fig. 5 Shim Template Tool Application