

# SERVICE BULLETIN

CAB SERVICE & PARTS CORPORATION

#57

SUBSIDIARY OF  
CHECKER MOTORS  
CORPORATION

NEW YORK \* BROOKLINE  
CHICAGO \* DETROIT

January 1, 1959

Subject: REAR AXLE - MODEL A-9

Description: REMOVING & REPLACING OF POWR-LOK DIFFERENTIAL

The following are recommended procedures for removing and replacing the POWR-LOK differential unit.

## REMOVAL

1. Remove complete axle assembly from car.
2. Drain lubricant and remove housing cover.
3. Remove both axle shafts.
4. Mark bearing caps for reassembly.
5. Remove bearing caps.
6. Install carrier spreader tool (see Figure #1).

NOTE: It is necessary to spread the axle housing, as differential bearings are pre-loaded. Holes are provided in housing casting for spreader tool. Install dial indicator for reading one side of axle housing to opposite. Do not exceed .020 reading as damage to housing may result.

7. Pry differential case assembly out and remove spreader tool.
8. Inspect bearings, cups, POWR-LOK unit as follows:

## UNIT ASSEMBLY

NOTE: DO NOT place shims under the bearing cones at this time. Bearings are to be removed and shims installed after the correct amount of bearing preload is determined.

continued. . . . .

UNIT ASSEMBLY (continued)

9. Install differential case (less ring gear) in the housing (with no shims). The assembly will enter the housing without the use of the spreader. Install the differential bearing caps, giving attention to the markings on the cap. Tighten bearing cap bolts down snug.

10. Set indicator gauge with contact point on the ring gear seat. With screwdriver blade between the bearing cup and rear axle housing, pry differential case assembly to one side of the housing. Set indicator to zero, shift the screwdriver to the opposite side, and pry differential case assembly in the opposite direction. Repeat and record reading several times (see Figure #2).

NOTE: The shim pack thickness to be placed between the bearing cones and differential case will be determined later.

11. Remove differential case from housing. Install ring gear on case. Use new ring gear screws; screws should be clean - wash in kerosene oil. DO NOT lubricate. Torque to specifications. See table.

12. In paragraph 10, a note was made of the total movement of the differential case in the rear axle housing. This represents the thickness of the shim pack to be divided and inserted at each side bearing. Proceed as follows: Install case with ring gear assembled as in #9. Hold ring gear in contact with pinion, place shims (1/2 of the total movement as noted in paragraph 10) temporarily between the bearing cup and rear axle housing with the aid of a screwdriver. Force shims in both sides so as to use the total amount indicated in paragraph 10. There is to be no backlash but the pinion should rotate when all the shims are in. After the shim pack has been divided and inserted as outlined, the backlash and bearing preload can be established by adding .015" additional shims to the shim pack on the ring gear tooth side of the differential case. (see Figure #3).

continued. . . . .

UNIT ASSEMBLY (continued)

13. Keep shim packs separated. Remove the differential case assembly. Remove the bearing cones - use a bearing puller. Care must be taken to insure that the puller is located in the casting recesses of the case so as not to pull on the roller cage. Then place each shim pack on the differential case under the bearing cone; make sure the pack with the .015" additional shims is on the ring gear tooth side. Press bearing cones in place (see Figure #4).
14. Install spreader tool as in paragraph 6. DO NOT spread in excess of .020" indicator reading. Proceed as follows: Place the differential assembly in the rear axle housing. Exercise care to prevent damage to the gear teeth. Tap differential assembly into place. Remove spreader tool. Install bearing caps, giving attention to the markings on the caps. Torque to specifications. See table.
15. Use indicator to check backlash at two points around the gear. Backlash must be held between .004 and .009. If it does not fall within specifications, shims should be interchanged between the two differential bearing shim packs.
16. Replace cover; tighten screws to specified torque. See table.
17. Install axle shafts.

MAINTENANCE OF POWR-LOK DIFFERENTIAL ASSEMBLY

**NOTE:** The Powr-Lok differential case halves are marked with a number or letter to aid in aligning the case when reassembling (see Figure #7).

- A. Separate the case halves and remove the pinion mate cross shafts, bevel pinion mate gears, bevel side gears, side gear rings, clutch friction plates, and clutch friction discs.

**NOTE:** Care should be taken to see how the friction plate and friction discs are assembled.

continued. . . . .

MAINTENANCE OF POWR-LOK DIFFERENTIAL ASSEMBLY (cont.)

B. The clutch friction plates and friction discs should be well coated with the recommended lubricant.

REASSEMBLY OF POWR-LOK DIFFERENTIAL AFTER LUBRICATION AND PRIOR TO INSTALLATION

NOTE: It is essential that all remaining parts be clean and free of any foreign material before assembling.

C. Assemble the proper number of well-oiled clutch friction plates and clutch friction discs on the splined hub of each bevel side gear. Make sure the plates and discs are arranged correctly. IMPORTANT - SEE NOTE UNDER PARAGRAPH A ABOVE.

D. Hold each differential case half on its side. Install the side gear rings with the friction plates and friction discs assembled. The side gear ring will rotate with a slight drag when properly located in the case (see Figure #6).

E. With the ring gear flange half of the differential case in an upright position, assemble the bevel side gears, pinion mate cross shafts and bevel pinion mate gears (see Figure #7).

F. Hold the remaining case half through the bearing trunion and install it on the ring gear flange half.

NOTE: Make sure the number or letter markings on each differential case half coincide (see Figure #7). Install differential case bolts, tighten and torque to 35-45 ft. lbs.

TORQUE SPECIFICATIONS

|                         |                |
|-------------------------|----------------|
| Drive Gear Screws       | 40-50 ft. lbs. |
| Bearing Cap Screws      | 70-90 ft. lbs. |
| Cover Screw             | 15-25 ft. lbs. |
| Differential Case Bolts | 35-45 ft. lbs. |

continued. . . . .

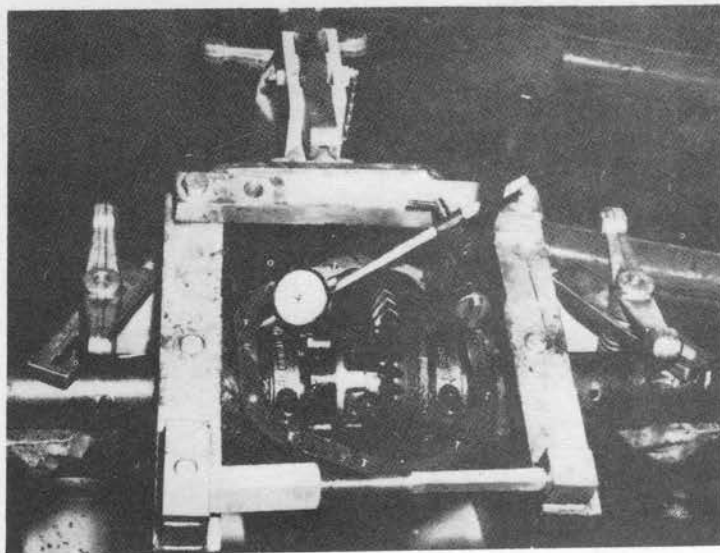


Fig. #1.

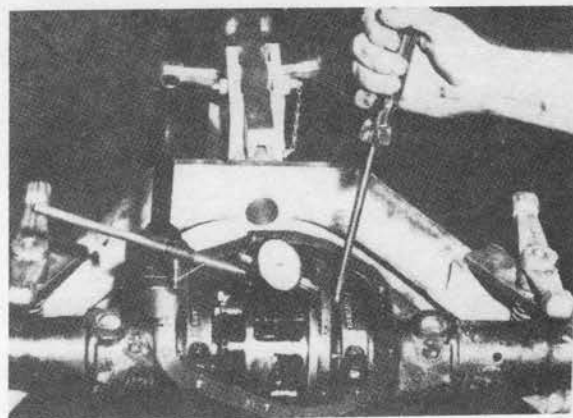


Fig. #2.

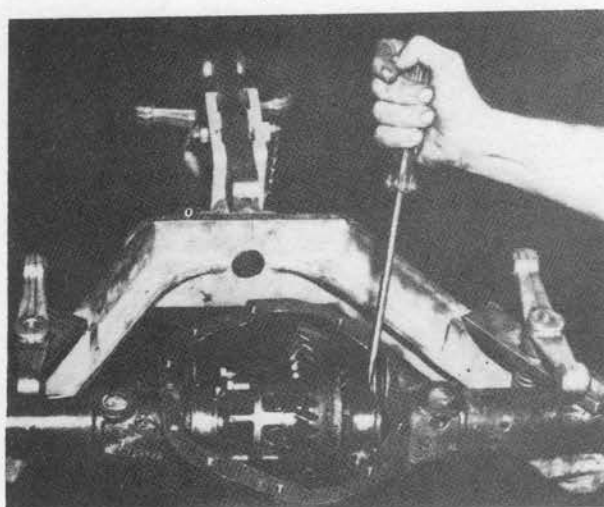


Fig. #3.

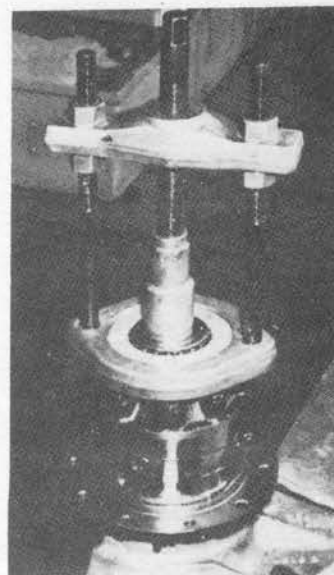


Fig. #4.

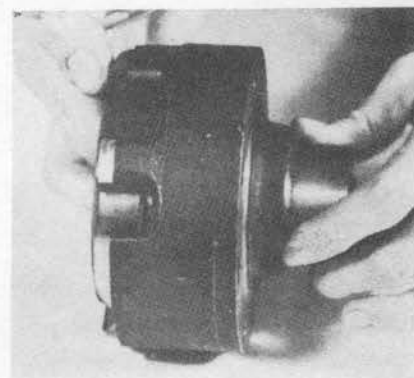
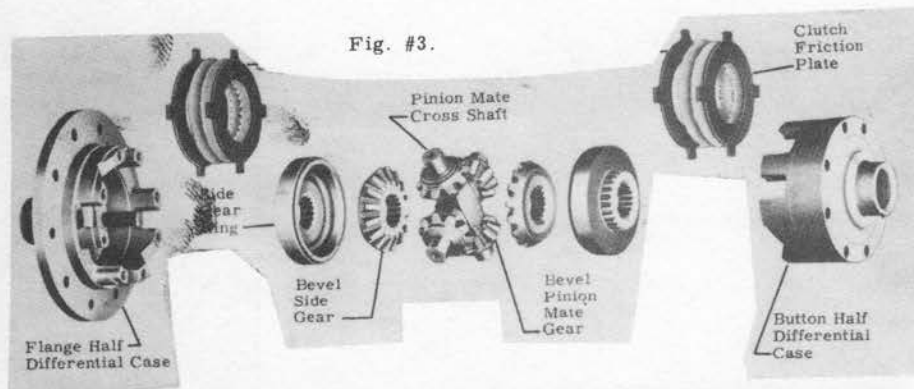


Fig. #6.



Fig. #7.

By: NEW YORK SERVICE DEPARTMENT