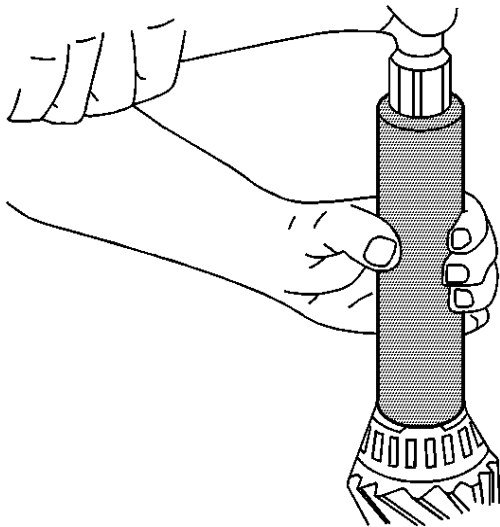


# Differential Carrier Assembly - Assemble

## Tools Required

- [J 8092](#) Universal Driver Handle - 3/4 in-10
- [J 33785](#) Pinion Bearing Installer
- [J 42211](#) Axle Bearing Installer
- [J 8614-01](#) Flange and Pulley Holding Tool
- [J 33782](#) Pinion Oil Seal Installer
- [J 33788](#) Output Shaft Bearing Installer
- [J 33792](#) Side Bearing Adjuster Wrench
- [J 33837](#) Pinion Bearing Cup Remover and Installer
- [J 23423-A](#) Case Bearing Race Installer
- [J 42213](#) Adjuster Sleeve Socket

1. Install the selective shim between the inner pinion bearing and the shoulder of the pinion gear.



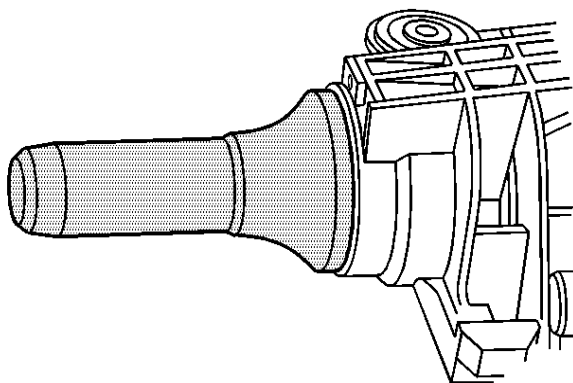
2. Install the inner pinion bearing onto the pinion gear using the [J 33785](#).
3. Install the new collapsible spacer onto the pinion gear.
4. Lubricate the inner and the outer pinion bearings with axle lubricant. Use the proper fluid. Refer to [Fluid and Lubricant Recommendations](#) in Maintenance and Lubrication.

## Important

Stake the new deflector at 3 new equally spaced positions. You must stake the new deflector in such a way that you do not damage the pinion sealing surface.

5. Install the new deflector by doing the following:

- A. Make sure the sealing surface of the pinion yoke is clean of burrs, if applicable.
  - B. Install the new deflector onto the pinion yoke by tapping the deflector evenly using a hammer and a brass drift in small increments.
  - C. Stake the new deflector to the pinion yoke in 3 positions.
6. Install the left differential carrier case into the [J 33837](#).  
Tighten the attaching bolts securely.
  7. Install the outer pinion bearing.

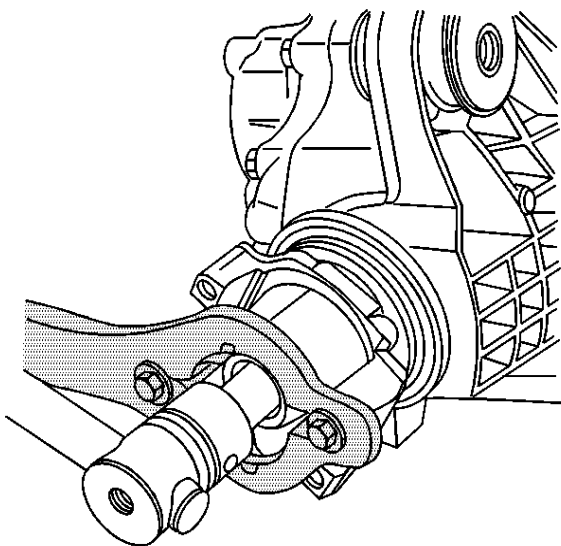


8. Install the oil seal by doing the following:
  - A. Position the oil seal in the bore.
  - B. Install the [J 33782](#) over the oil seal.
  - C. Strike the [J 33782](#) with a hammer until the seal flange seats on the axle housing surface.
9. Install the pinion gear, the selectable shim with inner pinion bearing and the new collapsible spacer, into the left differential carrier case.
10. Apply sealant, GM P/N 12346004 (Canadian P/N 10953480) or equivalent, to the splines of the pinion yoke.
11. Install the pinion yoke.

### Notice

Do not hammer the pinion flange/yoke onto the pinion shaft. Pinion components may be damaged if the pinion flange/yoke is hammered onto the pinion shaft.

12. Seat the pinion yoke onto the pinion shaft by tapping it with a soft-faced hammer until a few pinion shaft threads show through the yoke.
13. Install the washer and a new pinion nut.



14. Install the [J 8614-01](#) onto the pinion yoke as shown.

### Notice

Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use paints, lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint clamping force and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage to parts and systems.

### Important

If the rotating torque is exceeded, the pinion will have to be removed and a new collapsible spacer installed.

15. Tighten the pinion nut while holding the [J 8614-01](#).

#### **Tighten**

Tighten the pinion nut until the pinion end play is just taken up. Rotate the pinion while tightening the nut to seat the bearings.

16. Measure the rotating torque of the pinion using an inch-pound torque wrench.

#### **Specification**

The rotating torque of the pinion should be 1.0-2.3 N·m (10-20 lb in) used bearings, or 1.7-3.4 N·m (15-30 lb in) new bearings.

17. If the rotating torque measurement is below 1.0 N·m (10 lb in) used bearings, or 1.7 N·m (15 lb in) new bearings, continue to tighten the pinion nut.

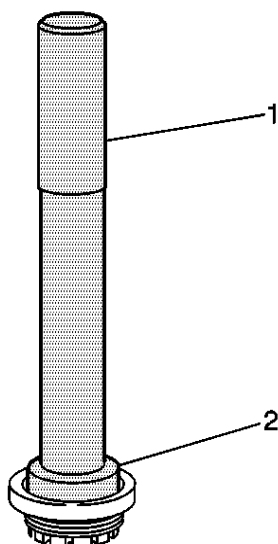
#### **Tighten**

Tighten the pinion nut, in small increments, as needed, until the torque required in order to rotate the

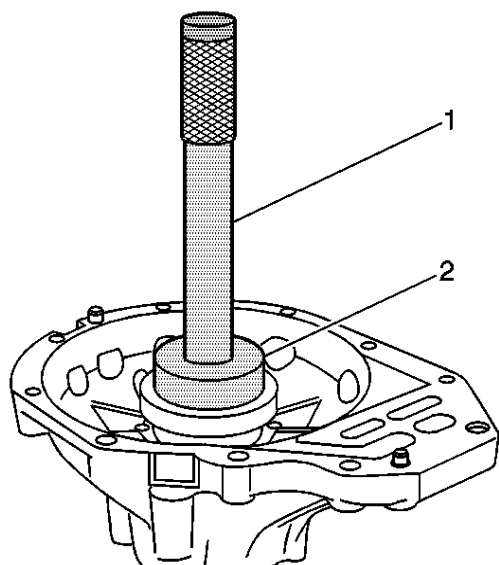
pinion is 0.40-0.57 N·m (3-5 lb in) greater than the torque recorded during removal, used bearings, or 1.7-3.4 N·m (15-30 lb in), new bearings.

18. Once the specified torque is obtained, rotate the pinion several times to ensure the bearings have seated.

Recheck the rotating torque and adjust if necessary.



19. Install the left inner axle shaft bearing into the differential adjuster nut sleeve using the [J 8092](#) (1) and the [J 42211](#) (2).
20. Install the left inner axle shaft bearing and the differential bearing adjuster nut into the left differential carrier case.
21. Install the left differential case bearing cup into the left differential carrier assembly case half using the [J 23423-A](#) and the [J 8092](#).
22. Install the right inner axle shaft bearing into the right differential adjuster nut sleeve using the [J 8092](#) (1) and the [J 33788](#) (2).



23. Install the right differential bearing adjuster assembly and the right differential case side bearing cup into the right differential carrier case half using the [J 23423-A](#) (2) and the [J 8092](#) (1).
24. Install the differential case assembly into the left differential carrier case half.
25. Using the [J 42213](#) , turn the left differential adjuster nut sleeve in until there is a slight amount of backlash felt between the ring gear and the pinion.
26. Install the right differential carrier case half to the left differential carrier case half.  
Do not use sealer at this time. If the carrier case halves do not make complete contact, use the [J 33792](#) in order to back out the right differential adjuster nut sleeve.
27. Install the differential carrier case bolts.

### **Tighten**

Tighten the differential carrier case bolts to 50 N·m (37 lb ft).

28. Adjust the backlash. Refer to [Backlash Inspection and Adjustment](#) .

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