

Differential Assembly

Inspection

To establish a starting point before disassembly, inspect the following:

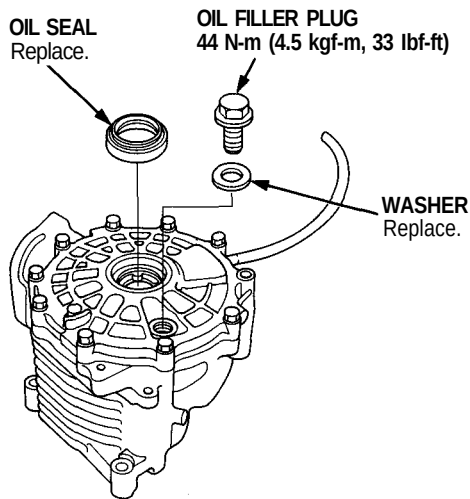
- Ring gear backlash
- Total bearing preload
- Gear tooth contact

NOTE:

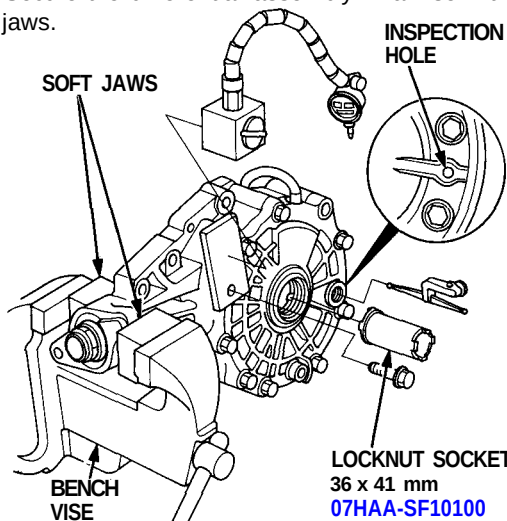
- Be sure the differential is at room temperature before inspecting.
- Record the results of the preliminary inspections. This information will be helpful during reassembly.

Ring gear backlash

1. Remove the oil filler plug and the oil seal.



2. Secure the differential assembly in a vise with soft jaws.

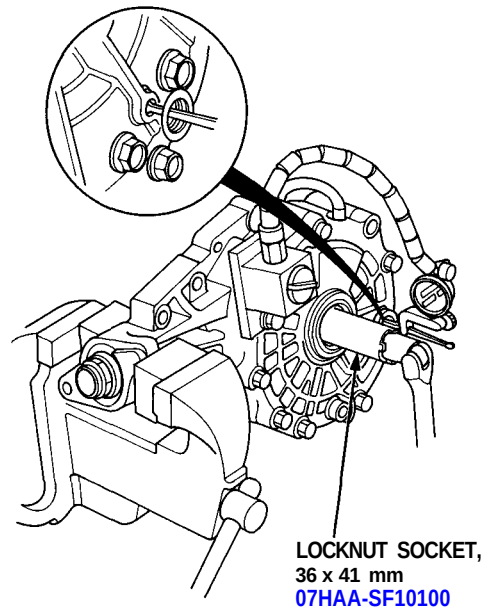


3. Align the differential gear inspection hole with the oil filler plug hole.

4. Measure the backlash of the ring gear on the differential carrier using the special tools as shown. After measuring, remove the dial gauge and turn the differential carrier one full turn, then remeasure the backlash.

Standard: 0.06 - 0.14 mm (0.002 - 0.006 in)

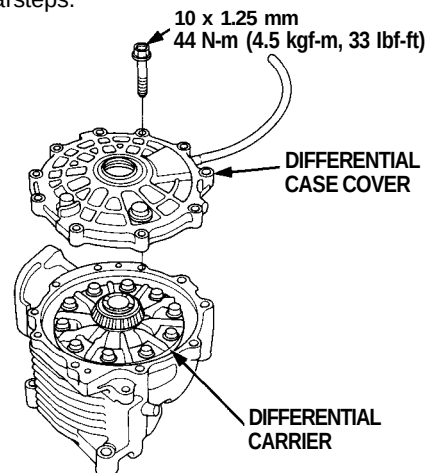
The difference between the two measurements taken must not exceed 0.06 mm (0.002 in).



Total bearing preload

5. Remove the differential case cover and the differential carrier.

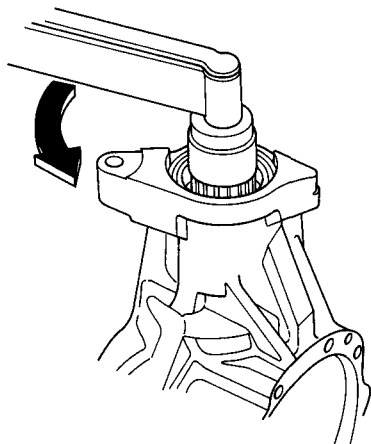
NOTE: Loosen the bolts in a crisscross pattern, in several steps.





6. Use a dial-type torque wrench on the drive pinion to measure the drive pinion bearing preload (Tp).

Standard: 1.42 - 1.91 N-m
(14.5 - 19.5 kgf-cm, 12.6 - 16.9 lbf-in)



7. Reinstall the differential carrier and the differential case cover, then measure the total bearing preload. The total bearing preload should exceed the drive pinion bearing preload (Tp) by:

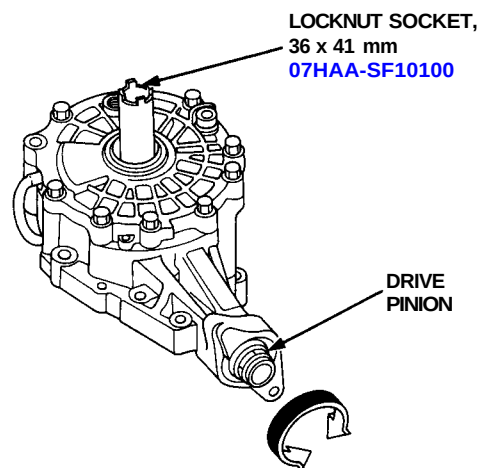
Standard:
0.94 - 1.07 N-m (9.6 - 10.9 kgf-cm, 8.33 - 9.46 lbf-in)

Example:

Total bearing preload (from step 7)
- Tp (from step 6)
= 0.94 - 1.07 N-m (9.6 - 10.9 kgf-cm, 8.33 - 9.46 lbf-in)

Geartooth contact

8. Remove the differential case cover and differential carrier. Clean and paint the ring gear teeth lightly and evenly with Prussian Blue (on both sides of each tooth).
9. Reinstall the differential carrier and the differential case cover, then torque the bolts in a crisscross pattern in several steps.
10. Install the special tool as shown, then rotate the drive pinion in both directions so that the ring gear rotate one full turn in both directions. During this operation resistance should be applied to the ring gear.



11. Remove the differential case cover and the differential carrier, then check the tooth contact pattern.

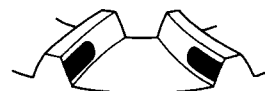
CORRECT TOOTH CONTACT



TOE CONTACT



HEEL CONTACT



FLANK CONTACT



FACE CONTACT

