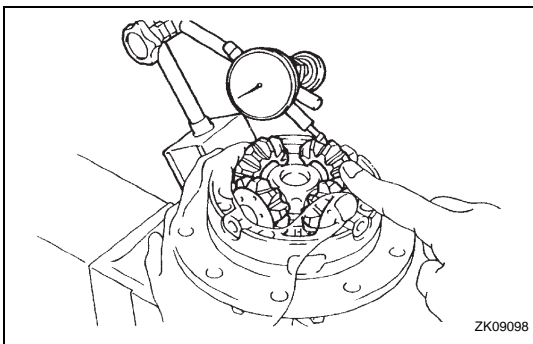
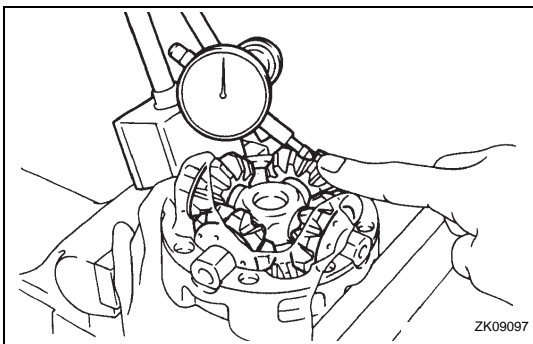
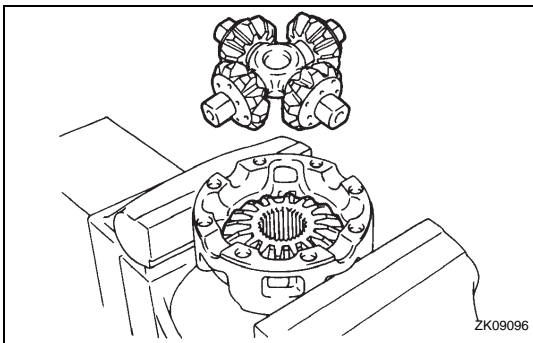
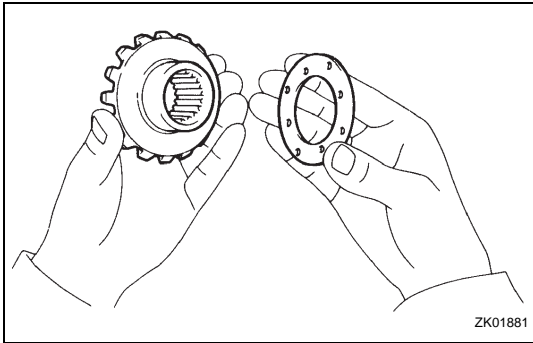


INSPECTION

1. **INSPECT DIFFERENTIAL PINION AND SIDE GEAR**
 - (a) Check that there is no damage to the differential pinion or differential side gear.
If the differential pinion and/or differential side gear is damaged, replace the differential.
2. **INSPECT DIFFERENTIAL CASE**
 - (a) Check that the differential case is not damaged.
If the differential case is damaged, replace it.

REASSEMBLY

1. **INSTALL DIFFERENTIAL CASE ASSEMBLY**
 - (a) Install the rear differential side gear thrust washer onto the rear differential side gear.
 - (b) Install the rear differential pinion thrust washer and rear differential pinion onto the rear differential spider.
 - (c) Fix the differential case RH.
 - (d) Install the rear differential side gear and rear differential spider onto the differential case RH.



- (e) Using a dial indicator, measure the differential case RH side backlash while holding the pinion toward the case.

Backlash:

0.05 to 0.20 mm (0.002 to 0.008 in.)

- (f) Remove the rear differential spider from the differential case RH.

- (g) Install the rear differential side gear and rear differential spider onto the differential case LH.
- (h) Using a dial indicator, measure the differential case LH side backlash while holding the pinion toward the case.

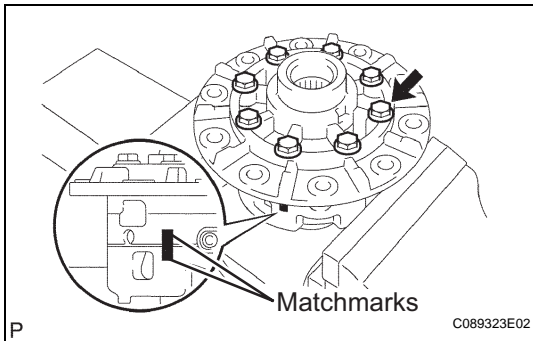
Backlash:

0.05 to 0.20 mm (0.002 to 0.008 in.)

If the backlash is not within the specification, install 2 side gear thrust washers of a different thickness.

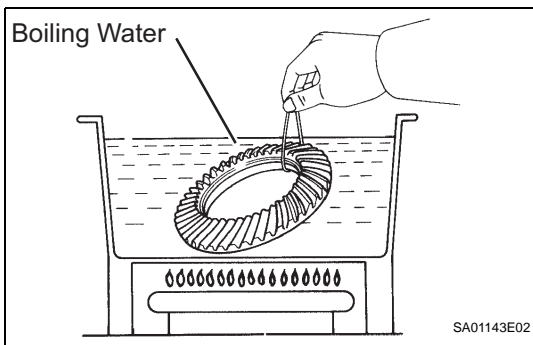
Thrust washer thickness

Thickness mm (in.)	Thickness mm (in.)
0.9 (0.0354)	1.2 (0.0472)
1.0 (0.0394)	1.3 (0.0512)
1.1 (0.0433)	-



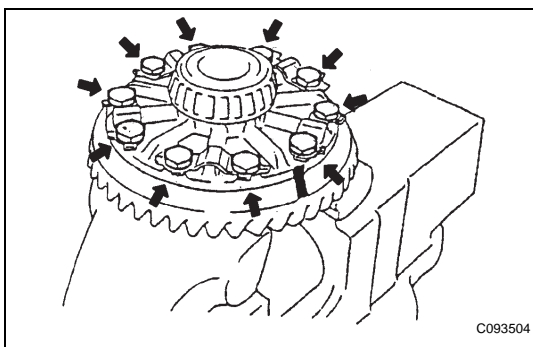
- (i) Align the matchmarks and assemble the RH and LH cases.
- (j) Using a plastic hammer, install the differential case.
- (k) Install the 8 bolts.

Torque: 47 N*m (480 kgf*cm, 35 ft.*lbf)



2. INSTALL DIFFERENTIAL RING GEAR

- (a) Clean the contact surfaces of the differential case and ring gear.
- (b) Heat the ring gear to approximately 100°C (212°F) in boiling water.
- (c) Carefully take the ring gear out of the boiling water.
- (d) After the moisture on the ring gear has completely evaporated, quickly install the ring gear onto the differential case.

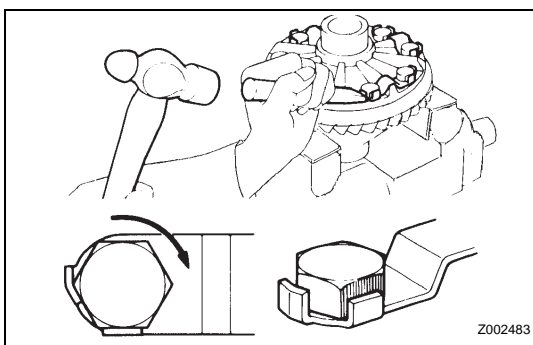


- (e) Align the matchmarks on the ring gear and differential case.
- (f) Temporarily install 5 new lock plates and 10 bolts.
- (g) After the ring gear cools down sufficiently, torque the 10 bolts uniformly.

Torque: 97 N*m (985 kgf*cm, 71 ft.*lbf)

HINT:

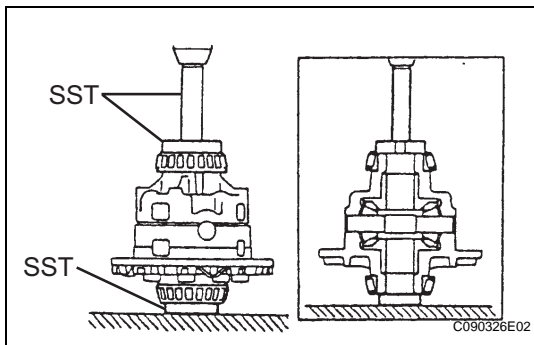
Tighten the bolts in diagonal order little by little in several steps.



- (h) Using a chisel and a hammer, stake the 5 lock plates.

HINT:

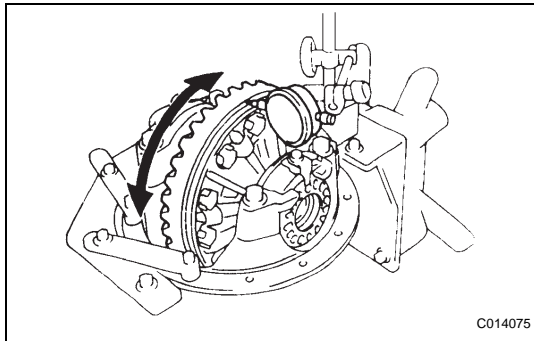
Strike the tab labeled A so that it is flush with the flat surface of the bolt. Strike the tab labeled B so that half of the tab is in contact with the bolt as shown in the illustration.



3. INSTALL REAR DIFFERENTIAL CASE BEARING

- (a) Using SST and a press, install the bearing onto the differential case.

SST 09950-60010 (09951-00430, 09951-00480, 09951-00470, 09951-00550), 09950-70010 (09951-07150, 09951-00560, 09951-00570)



4. INSPECT DIFFERENTIAL RING GEAR RUNOUT

- (a) Install the differential case onto the carrier, and install the 2 adjusting nuts so that there is no play in the bearing.

- (b) Install the 2 bearing caps with the 4 bolts.

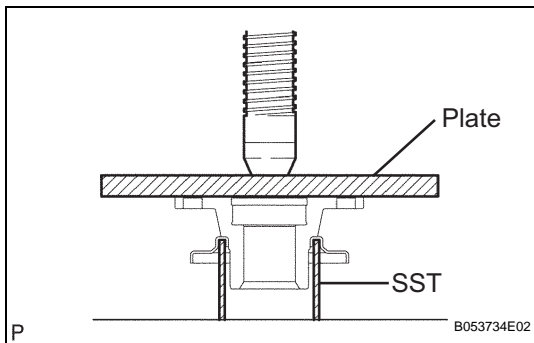
Torque: 85 N*m (870 kgf*cm, 63 ft.*lbf)

- (c) Using a dial indicator, measure the runout of the ring gear.

Maximum runout:

0.07 mm (0.0028 in.)

- (d) Remove the 2 bearing caps, 2 adjusting nuts and differential case.



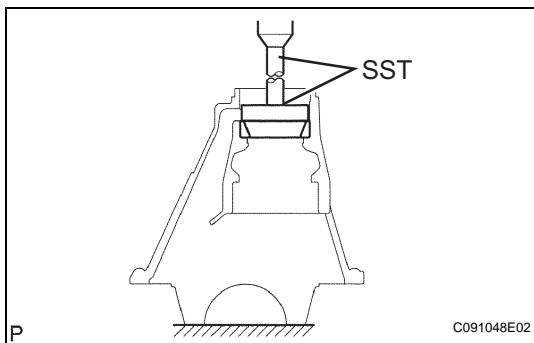
5. INSTALL REAR DIFFERENTIAL DUST DEFLECTOR

- (a) Using a press, install a new dust deflector.

NOTICE:

Be careful not to damage the dust deflector.

SST 09636-20010

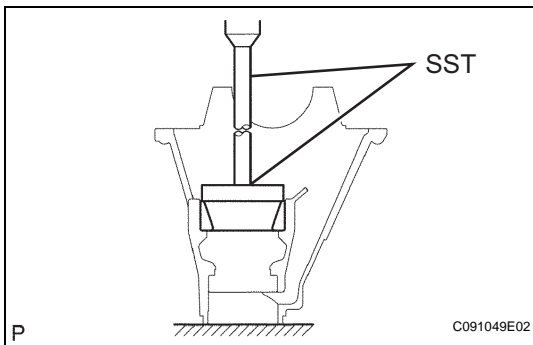


6. INSTALL REAR DRIVE PINION FRONT TAPERED ROLLER BEARING

- (a) Using a brass bar and a hammer, install the oil storage ring.

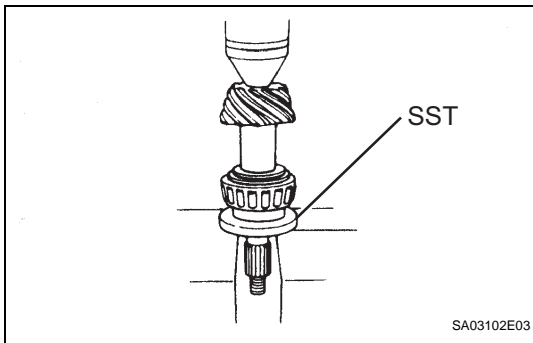
- (b) Using SST and a press, install the tapered roller bearing onto the carrier.

SST 09316-60011 (09316-00011, 09316-00021)



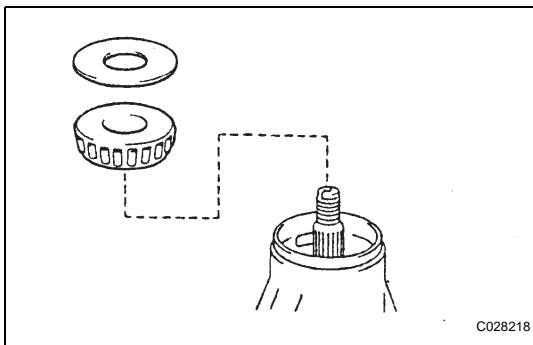
7. INSTALL REAR DRIVE PINION REAR TAPERED ROLLER BEARING

- (a) Using SST and a press, install the tapered roller bearing onto the carrier.
SST 09316-60011 (09316-00041, 09316-00011)



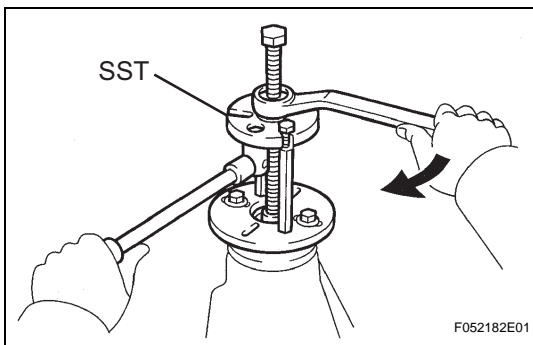
8. INSTALL REAR DRIVE PINION REAR TAPERED ROLLER BEARING

- (a) Install the plate washer onto the drive pinion.
 (b) Using SST and a press, install the tapered roller bearing onto the drive pinion.
SST 09506-30012

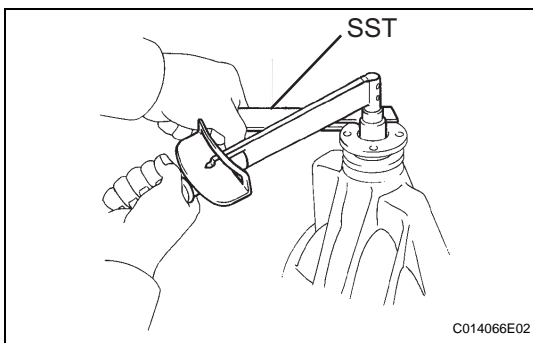


9. ADJUST DIFFERENTIAL DRIVE PINION PRELOAD

- (a) Install the drive pinion, rear drive pinion tapered roller bearing and rear differential drive oil slinger.
HINT:
 Assemble the spacer and oil seal after adjusting the gear contact pattern.



- (b) Using SST, install the drive pinion companion flange.
 (c) Coat the threads of the nut with hypoid gear oil LSD.
SST 09950-30012 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03030)

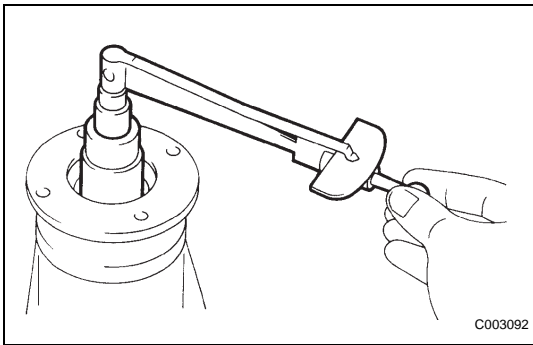


- (d) Using SST to hold the drive pinion companion flange, tighten the nut.
Torque: 370 N*m (3,770 kgf*cm, 273 ft.*lbf) or less

SST 09330-00021

NOTICE:

- As there is no spacer, tighten the nut a little at a time, being careful not to overtighten it.
- Apply hypoid gear oil to the nut.



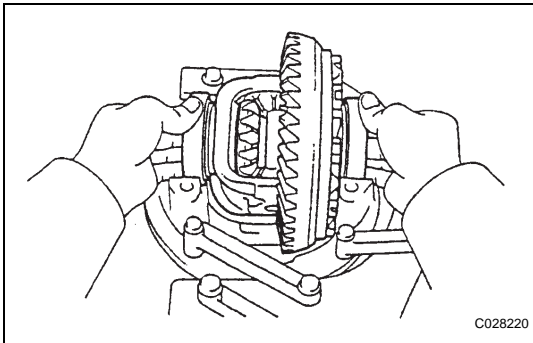
- (e) Using a torque wrench, measure the preload.

Preload (at starting)

Bearing	Standard
New	1.05 to 1.64 N*m (10.7 to 16.7 kgf*cm, 9.3 to 14.5 in.*lbf)
Reused	0.56 to 0.85 N*m (5.7 to 8.7 kgf*cm, 4.9 to 7.5 in.*lbf)

NOTICE:

For a more accurate measurement, rotate the bearing forward and backward several times before measuring.

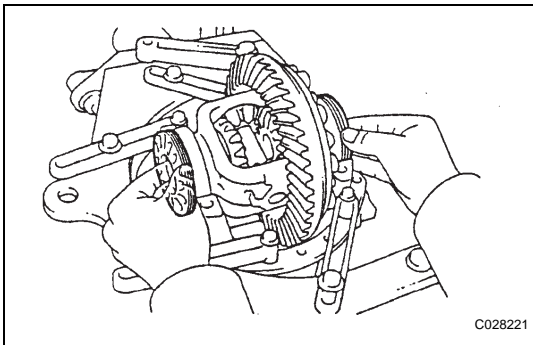


10. INSTALL DIFFERENTIAL CASE ASSEMBLY

- (a) Place the 2 bearing outer races on their corresponding bearings.

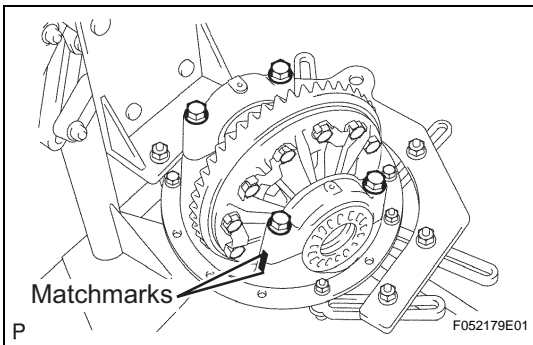
HINT:

Make sure the right and left races are not interchanged.



11. INSTALL REAR DIFFERENTIAL BEARING ADJUSTING NUT

- (a) Install the 2 adjusting nuts into the carrier, making sure the nuts are threaded properly.



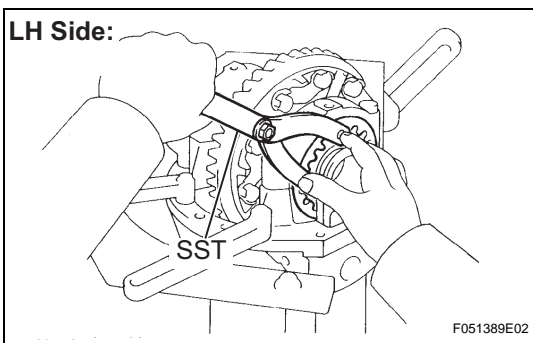
12. INSPECT AND ADJUST DIFFERENTIAL RING GEAR AND DIFFERENTIAL DRIVE PINION BACKLASH

- (a) Align the matchmarks on the cap and carrier.
 (b) Install the right and left bearing caps with the 4 bolts.

Torque: 85 N*m (870 kgf*cm, 63 ft.*lbf)

HINT:

If the bearing cap does not fit tightly onto the carrier, the adjusting nuts are not threaded properly. Reinstall the adjusting nuts if necessary.

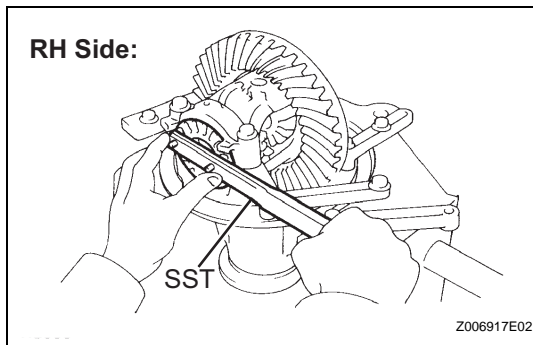


- (c) Tighten the 4 bearing cap bolts to the specified torque, then loosen them to the point where the adjusting nuts can be turned by SST.

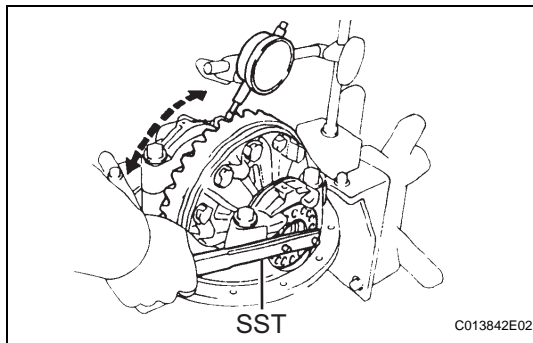
Torque: 85 N*m (870 kgf*cm, 63 ft.*lbf)

- (d) Using the SST, tighten the adjusting nut on the ring gear side until the ring has a backlash of about 0.2 mm (0.008 in.).

SST 09960-10010 (09962-01000, 09963-00700)



- (e) While turning the ring gear, use the SST to fully tighten the adjusting nut on the drive pinion side. After the bearings have settled, loosen the adjusting nut on the drive pinion side.
- (f) Using SST, torque the adjusting nut 1 to 1.5 notches from the 0 preload position.
SST 09504-00011



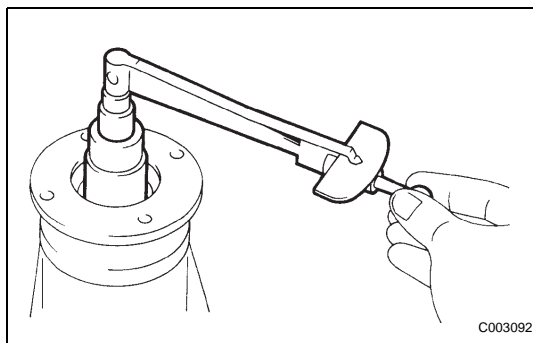
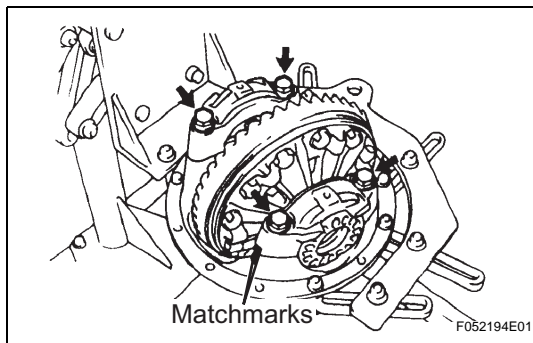
- (g) Using a dial indicator, adjust the ring gear backlash until it is within the specification.

Backlash:

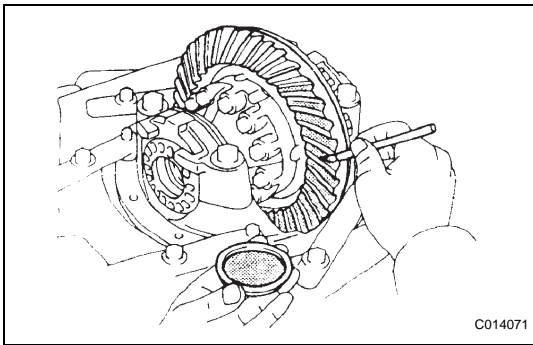
0.13 to 0.18 mm (0.0051 to 0.0071 in.)

HINT:

- The backlash is adjusted by turning the left and right adjusting nuts an equal amount. For example, loosen the nut on the right side one notch and loosen the nut on the left side one notch.
 - Perform the measurement at 3 or more positions around the circumference of the ring gear.
- (h) Torque the bearing cap bolts.
Torque: 85 N*m (870 kgf*cm, 63 ft.*lbf)

**13. INSPECT TOTAL PRELOAD**

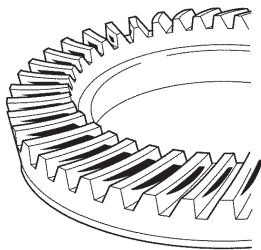
- (a) Using a torque wrench, measure the preload with the teeth of the drive pinion and ring gear in contact.
Total preload (at starting):
Drive pinion preload plus 0.39 to 0.59 N*m (4.0 to 6.0 kgf*cm, 3.5 to 5.2 in.*lbf)
If necessary, disassemble and inspect the differential.



14. INSPECT TOOTH CONTACT BETWEEN RING GEAR AND DRIVE PINION

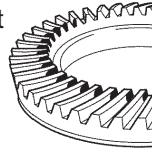
- (a) Coat 3 or 4 teeth at 3 different positions on the ring gear with prussian blue.
- (b) Hold the companion flange firmly and rotate the ring gear in both directions.
- (c) Inspect the tooth contact pattern.

Driver Side:

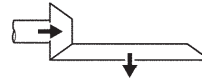
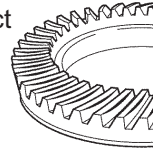


Proper Contact

Toe Contact

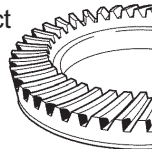


Face Contact

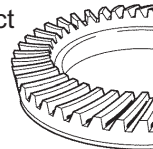


Select an adjusting washer that will bring the drive pinion closer to the ring gear.

Heel Contact

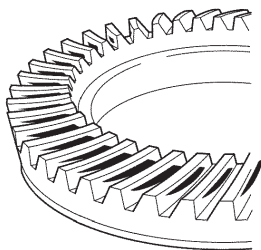


Flank Contact



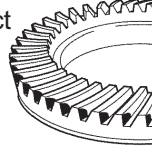
Select an adjusting washer that will shift the drive pinion away from the ring gear.

Coast Side:

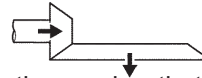
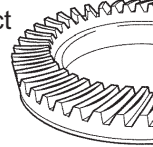


Proper Contact

Heel Contact

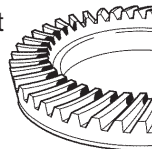


Face Contact

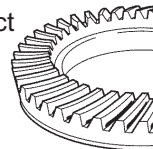


Select an adjusting washer that will shift the drive pinion closer to the ring gear.

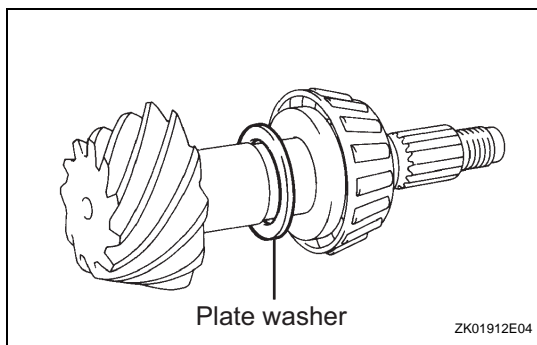
Toe Contact



Flank Contact



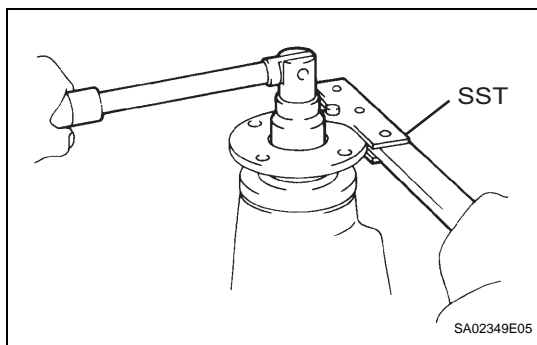
Select an adjusting washer that will bring the drive pinion away from the ring gear.



If the teeth are not engaged properly, use the following chart to select an appropriate washer for correction.

Plate Washer Thickness

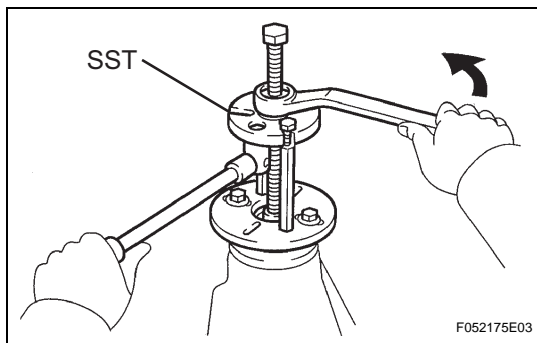
Thickness mm (in.)	Thickness mm (in.)
1.70 (0.0669)	2.03 (0.0799)
1.73 (0.0681)	2.06 (0.0811)
1.76 (0.0693)	2.09 (0.0823)
1.79 (0.0705)	2.12 (0.0835)
1.82 (0.0717)	2.15 (0.0847)
1.85 (0.0728)	2.18 (0.0853)
1.88 (0.0740)	2.21 (0.0870)
1.91 (0.0752)	2.24 (0.0882)
1.94 (0.0764)	2.27 (0.0894)
1.97 (0.0776)	2.30 (0.0906)
2.00 (0.0787)	2.33 (0.0917)



15. REMOVE REAR DRIVE PINION NUT

- (a) Using SST to hold the drive pinion companion flange, remove the nut.

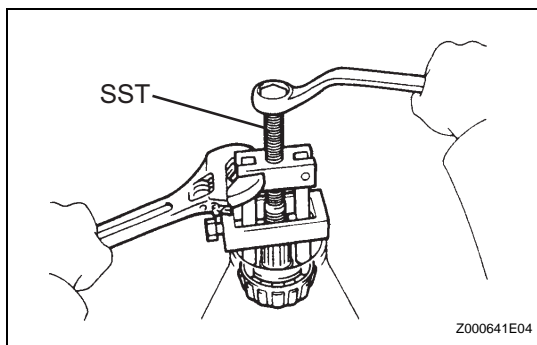
SST 09330-00021



16. REMOVE REAR DRIVE PINION COMPANION FLANGE SUB-ASSEMBLY REAR

- (a) Using SST, remove the drive pinion companion flange.

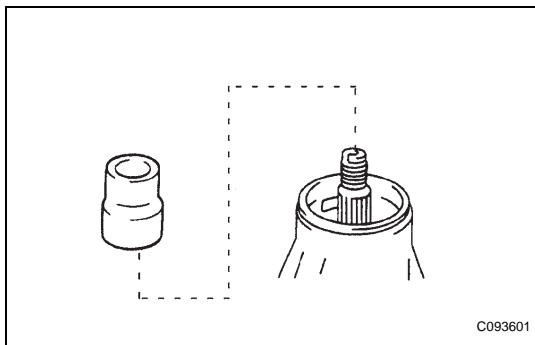
SST 09950-30012 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03030)



17. REMOVE REAR DRIVE PINION FRONT TAPERED ROLLER BEARING

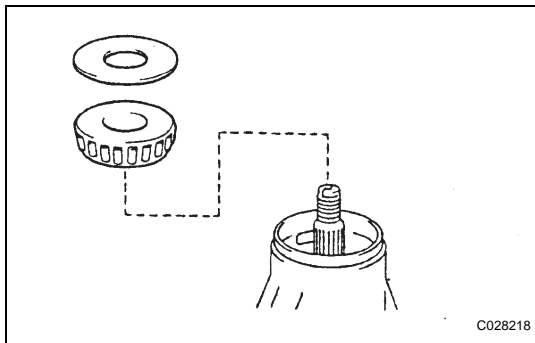
- (a) Using SST, remove the drive pinion tapered roller bearing from the drive pinion.

SST 09556-22010



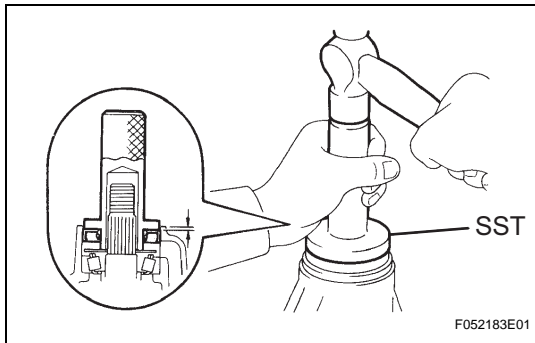
18. INSTALL REAR DIFFERENTIAL DRIVE PINION BEARING SPACER

- (a) Install a new bearing spacer onto the drive pinion.



19. INSTALL REAR DRIVE PINION FRONT TAPERED ROLLER BEARING

- (a) Install the drive pinion, rear drive pinion taper roller bearing and rear differential drive oil slinger.



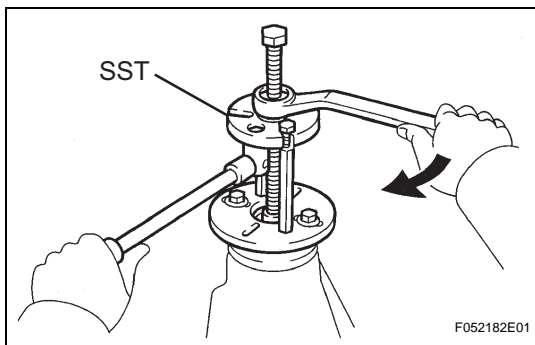
20. INSTALL REAR DIFFERENTIAL CARRIER OIL SEAL

- (a) Apply MP grease to the oil seal lip.
 (b) Using SST and a hammer, install a new carrier oil seal.

SST 09554-30011

Oil seal drive in depth:

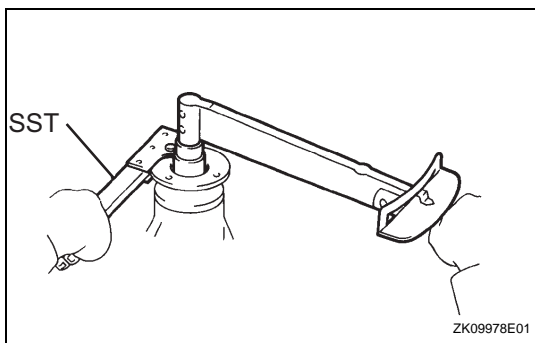
0.55 to 1.45 mm (0.021 to 0.057 in.)



21. INSTALL REAR DRIVE PINION COMPANION FLANGE SUB-ASSEMBLY REAR

- (a) Using SST, install the drive pinion companion flange onto the drive pinion.

SST 09950-30012 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03030)

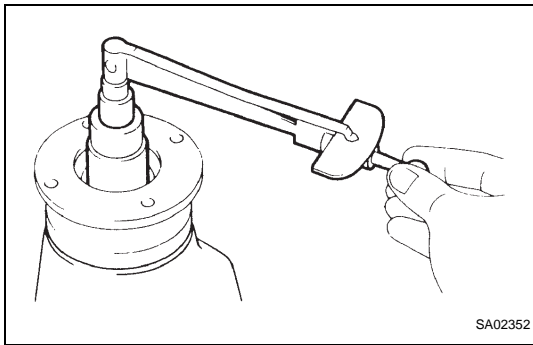


- (b) Coat the threads of a new nut with hypoid gear oil LSD.

- (c) Using SST to hold the flange, tighten the nut.

SST 09330-00021

Torque: 370 N*m (3,770 kgf*cm, 273 ft.*lbf) or less

**22. INSPECT DRIVE PINION PRELOAD**

- (a) Using a torque wrench, measure the preload of the backlash between the drive pinion and ring gear.

Preload (at starting)

Bearing	Standard
New	1.05 to 1.64 N*m (10.7 to 16.7 kgf*cm, 9.3 to 14.5 in.*lbf)
Used	0.56 to 0.85 N*m (5.7 to 8.7 kgf*cm, 4.9 to 7.5 in.*lbf)

If the preload is greater than the specification, replace the bearing spacer.

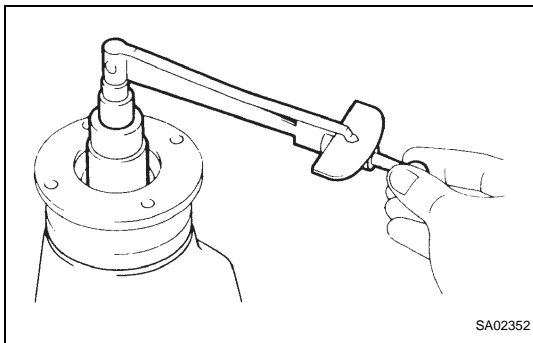
If the preload is less than the specification, retighten the nut to 13 N*m (130 kgf*cm, 9 ft*lbf) of torque at a time until the specified preload is reached.

Torque: 370 N*m (3,770 kgf*cm, 27 ft.*lbf) or less

If the maximum torque is exceeded while retightening the nut, replace the bearing spacer and repeat the preload adjusting procedure.

HINT:

Do not loosen the pinion nut to reduce the preload.

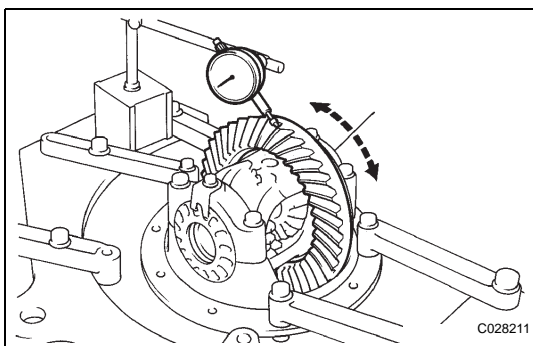
**23. INSPECT TOTAL PRELOAD**

- (a) Using a torque wrench, measure the preload.

Total preload (at starting):

Drive pinion preload plus 0.39 to 0.59 N*m (4.0 to 6.0 kgf*cm, 3.5 to 5.2 in.*lbf)

If necessary, disassemble and inspect the differential.

**24. INSPECT DIFFERENTIAL RING GEAR BACKLASH**

- (a) Using a dial indicator, check the backlash of the ring gear.

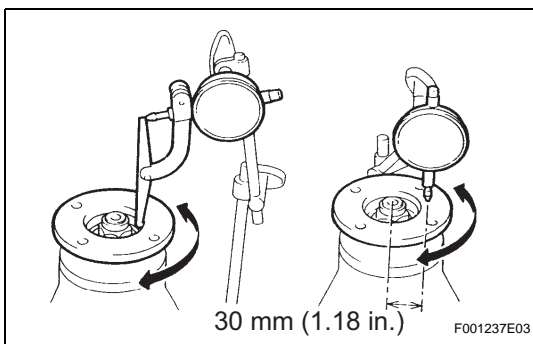
Backlash:

0.13 to 0.18 mm (0.0051 to 0.0071 in.)

If the backlash is not within the specification, adjust or repair the side bearing preload as necessary.

HINT:

Perform the measurements at 3 or more positions around the circumference of the ring gear.

**25. INSPECT RUNOUT OF REAR DRIVE PINION COMPANION FLANGE SUB-ASSEMBLY REAR**

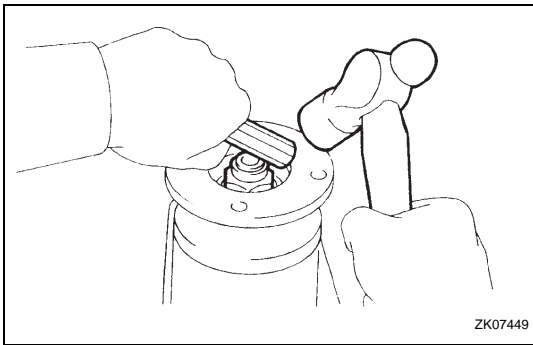
- (a) Using a dial indicator, measure the runout of the drive pinion companion flange vertically and horizontally.

Maximum runout:

Vertical runout: 0.10 mm (0.0039 in.)

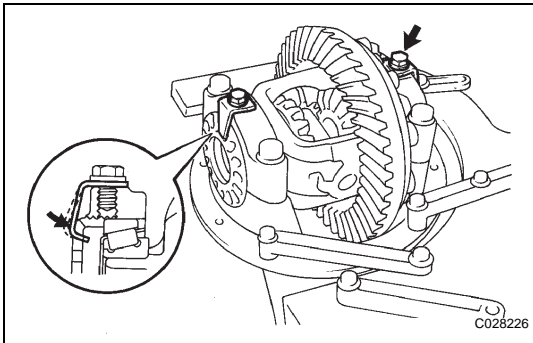
Lateral runout: 0.10 mm (0.0039 in.)

If the runouts are not within the specifications, replace the companion flange.



26. INSTALL REAR DRIVE PINION NUT

- (a) Using a chisel and hammer, stake the drive pinion nut.

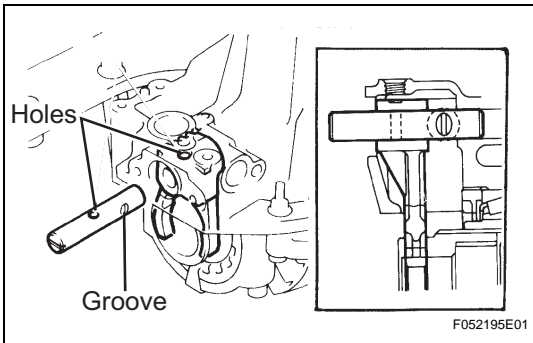


27. INSTALL REAR DIFFERENTIAL BEARING ADJUSTING NUT LOCK

- (a) Install 2 new adjusting nut locks onto the bearing caps with the 2 bolts.

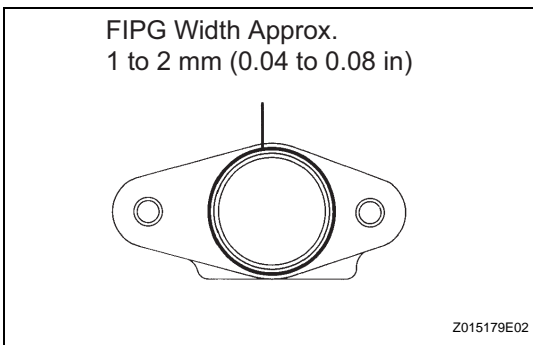
Torque: 13 N*m (129 kgf*cm, 9 ft.*lbf)

- (b) After tightening the bolts, bend the nut locks.



28. INSTALL REAR DIFFERENTIAL LOCK SHIFT FORK

- (a) Apply MP grease onto the outer circuit of the shaft.
 (b) Install the fork shaft to align the hole of the shift fork with that of the shift fork shaft.



- (c) Remove any FIPG material and be careful not to drop the oil shaft retainer.
 (d) Apply FIPG to the carrier, as shown in the illustration.

FIPG:

Part No. 08826-00090, THREE BOND 1281 or the equivalent

HINT:

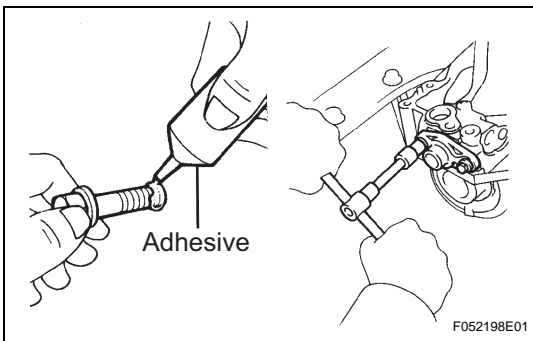
Install the shaft retainer within 10 minutes of applying FIPG.

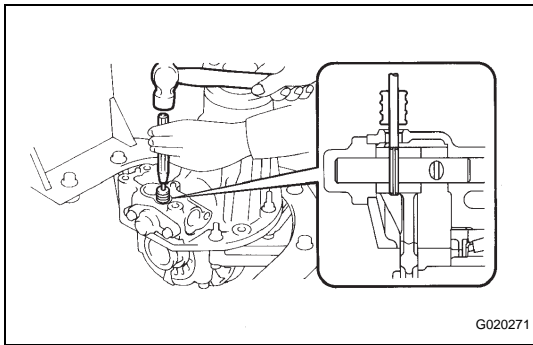
- (e) Clean the threads of the bolts and retainer bolts holes with toluene or trichorethyene.
 (f) Apply adhesive to 2 or 3 threads of each mount bolt end.

Adhesive:

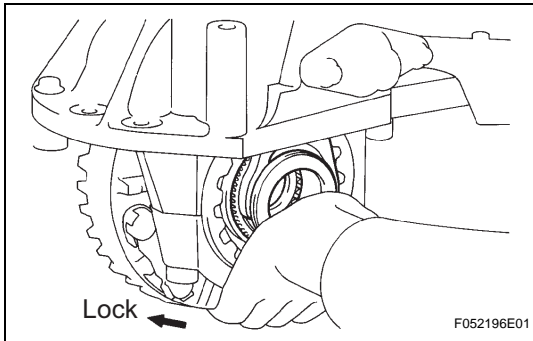
Part No. 08833-00080, THREE BOND 1344, LOCTITE: 242 or the equivalent

- (g) Tighten the shaft retainer with the 2 bolts.
Torque: 24 N*m (240 kgf*cm, 17 ft.*lbf)

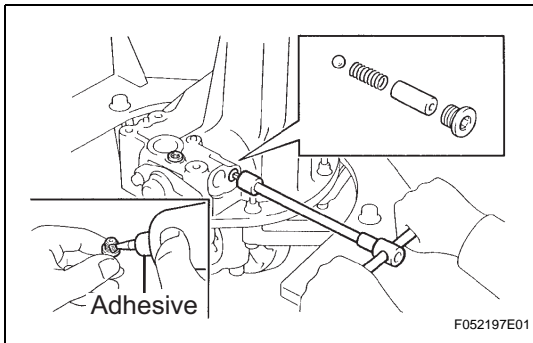




- (h) Using a 5 mm pin punch and hammer, install the slotted spring pin into the shift fork.
Torque: 22 N*m (220 kgf*cm, 16 ft.*lbf)



- (i) Push the differential lock sleeve in deeply and hold it in position.



- (j) Install the ball, spring and spring seat.
 (k) Clean the threads of 2 plugs and plug holes with toluene or trichlorethylene.

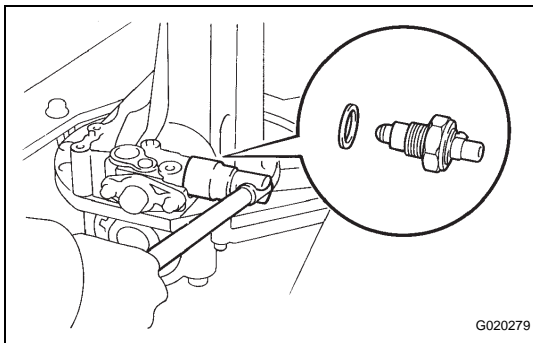
Adhesive:

**Part No. 08833-00080, THREE BOND 1344,
 LOCTITE: 242 or the equivalent**

- (l) Using a 6 mm hexagon wrench, install and tighten the screw plugs.
Torque: 22 N*m (220 kgf*cm, 16 ft.*lbf)

29. INSTALL NO.1 TRANSFER INDICATOR SWITCH

- (a) Install the indicator switch with a new gasket.
Torque: 40 N*m (410 kgf*cm, 30 ft.*lbf)



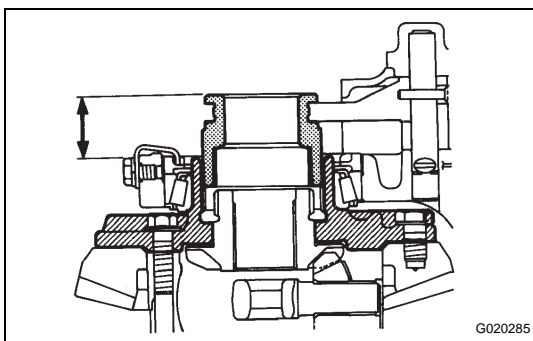
30. INSPECT REAR DIFFERENTIAL LOCK SLEEVE

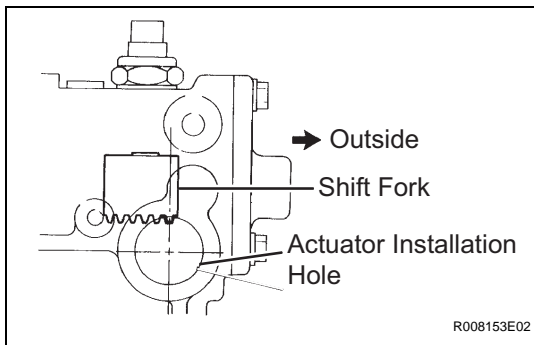
- (a) Measure the distances between the sleeve and tip of the differential case when the differential is free and locked, respectively.

Standard distance:

LOCKED: 17.44 to 18.86 mm (0.6866 to 0.7425 in.)

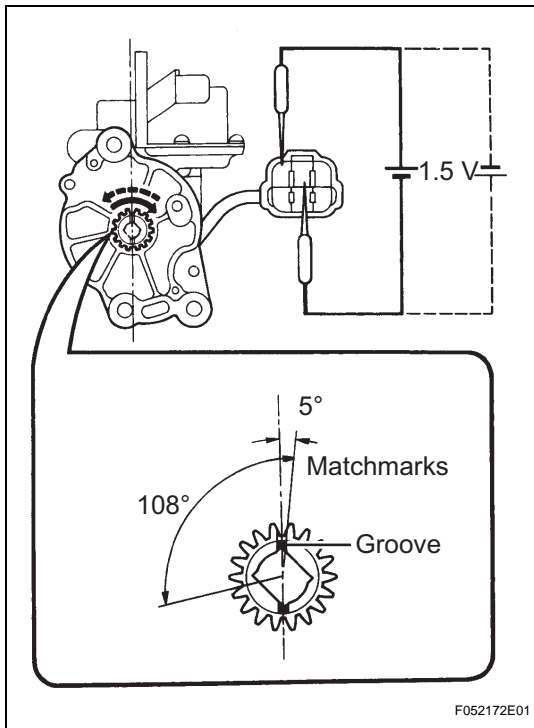
FREE: 32.40 to 33.90 mm (1.2756 to 1.3346 in.)





31. INSTALL DIFFERENTIAL LOCK SHIFT ACTUATOR

- (a) Check that the outermost rack tooth of the shift fork is approximately above the center line of the actuator installation hole.

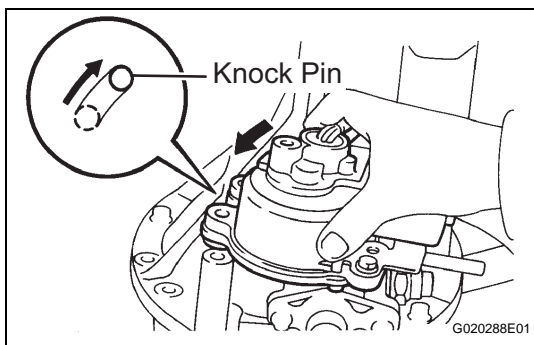


- (b) Ensure that the matchmarks on the pinion of the actuator are in the range between 0 and 5 degrees clockwise above the center line of the actuator.

NOTICE:

- If the matchmarks are not within this range, rotate the pinion.
- Do not supply the battery positive voltage directly between the terminals.
- If the matchmarks come to the limit of rotation, do not apply the electric current.

- (c) Install a new O-ring onto the actuator.
(d) Apply a light coat of gear oil to the O-ring.
(e) Apply MP grease to the gear part.



- (f) Ensure that the outermost rack tooth of the shift fork fits the matchmarks on the pinion of the actuator.
(g) Install the actuator so that the long hole on the actuator side fits into the knock pin on the carrier side.

HINT:

Do not damage the O-ring of the actuator.

- (h) Align the actuator with the long hole and rotate the actuator counterclockwise when the knock pin is set in the left-hand side.
(i) Install and tighten the bolts.

Torque: 27 N*m (270 kgf*cm, 20 ft.*lbf)