

TRANSFER

REFER TO LAND CRUISER (STATION WAGON)
REPAIR MANUAL FOR CHASSIS AND BODY
(Pub. No. RM184E)

NOTE: The following pages contain only the
points which differ from the above listed man-
ual.

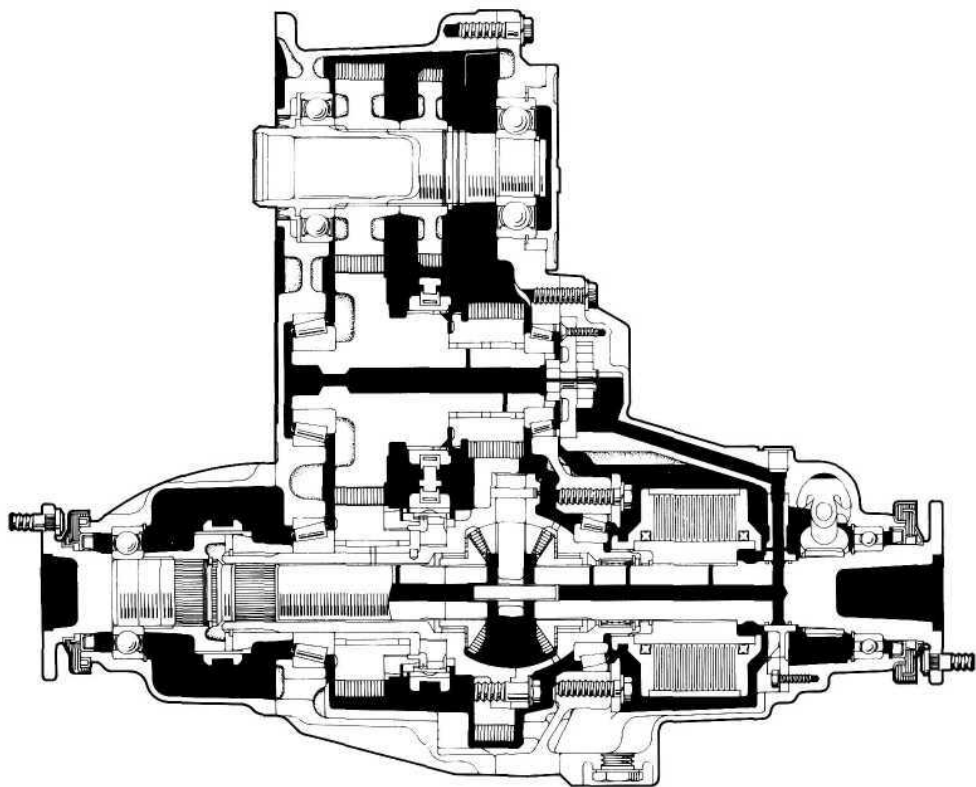
(HF2AV FOR STATION WAGON WITH ABS)

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DESCRIPTION

The transfer transmits the drive force from the transmission to the front and rear wheels. The specifications and cross-section diagrams are as shown.



HF2AV TRANSFER

V01733

Specifications

Type of Transfer		HF2AV	
Type of Transmission		H150F	H151F, A442F
Type of Engine		1HZ	1FZ-FE, 1HD-T
Gear Ratio	High Speed Range	1.000	
	Low Speed Range	2.488	
Oil Capacity Liters (US qts. Imp. qts.)	w/o PTO	1.7 (1.8, 1.5)	
	w/ PTO	1.8 (1.9, 1.6)	
Type of Oil		API GL-4 or GL-5 SAE 75W-90	

PRECAUTIONS

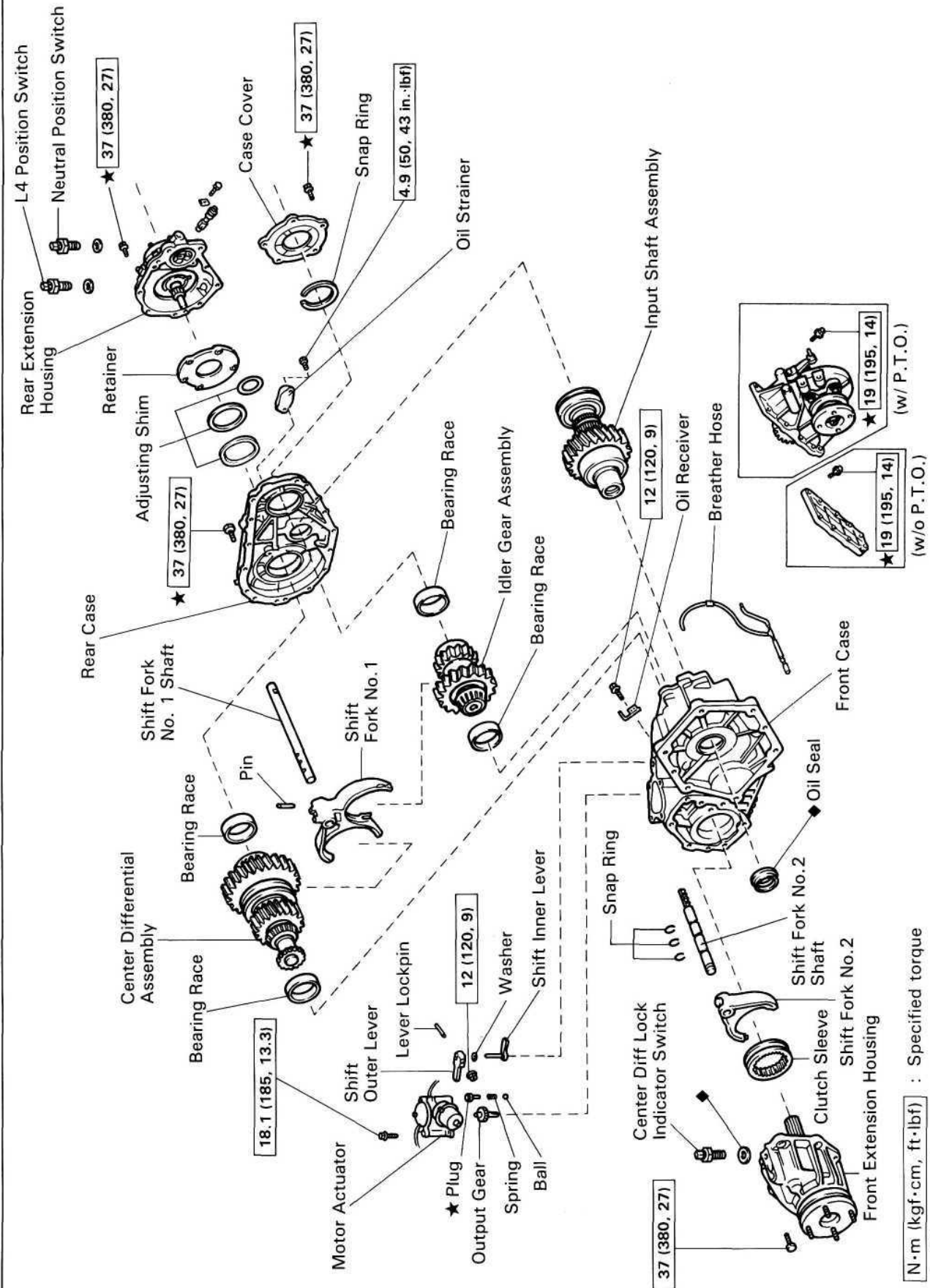
When working with FIPG material, you must observe the following.

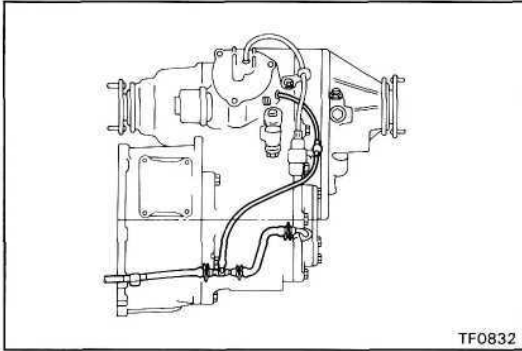
- Using a razor blade and gasket scraper, remove all the old packing (**FIPG**) material from the gasket surfaces.
- Thoroughly clean all components to remove all the loose material.
- Clean both sealing surfaces with a non-residue solvent.
- Apply the seal packing in approx. 1 mm (0.04 in.) bead along the sealing surface.
- Parts must be assembled within 10 minutes of application. Otherwise, the packing (FIPG) material must be removed and reapplied.

TROUBLESHOOTING

Problem	Possible cause	Remedy	Page
Hard to shift or will not shift	Transfer faulty	Disassemble and inspect transfer	TR-4 TR-49
Transfer jumps out of gear	Transfer faulty	Disassemble and inspect transfer	TR-4
Noise	Transfer faulty Wrong oil grade Oil level low	Disassembly and inspect transfer Replace oil Add oil	TR-4 TR-2 TR-2
Oil leakage	Oil level too high Oil seal, O-ring or gasket worn or damaged	Drain oil Replace oil seal, O-ring or gasket	TR-2 TR-4
Tight corner braking	Center differential or transfer faulty	Replace center differential or transfer	RM184E MT-5

COMPONENTS

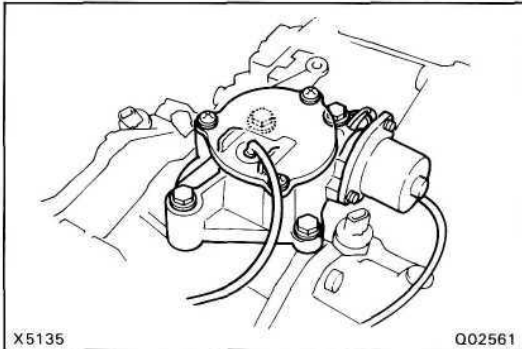




TRANSFER DISASSEMBLY

(See page TR-4)

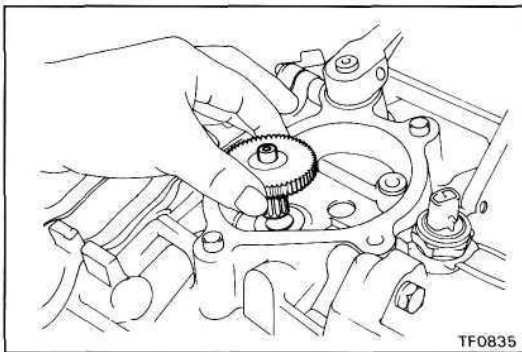
1. REMOVE BREATHER HOSE



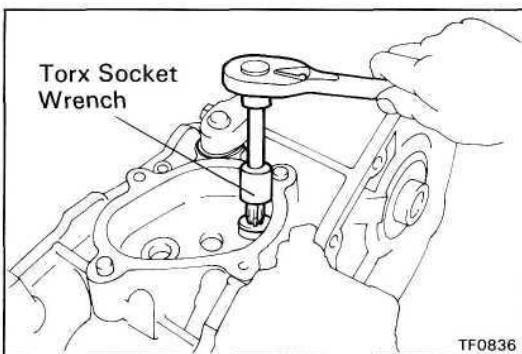
2. REMOVE MOTOR ACTUATOR

Remove the four bolts and motor actuator.

HINT: Remove the motor actuator in differential lock condition.

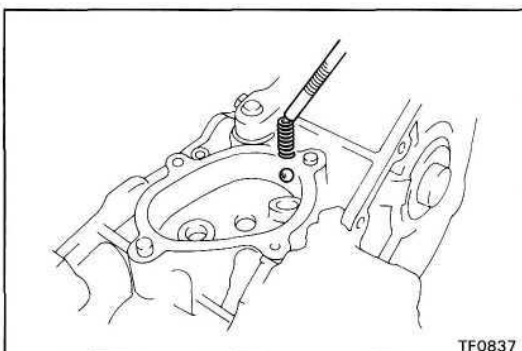


3. REMOVE OUTPUT GEAR

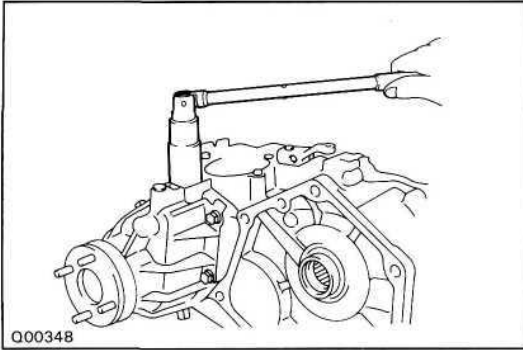


4. REMOVE SCREW PLUG, SPRING AND BALL

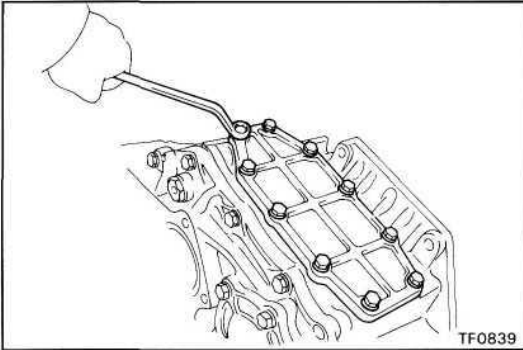
- (a) Using a torx socket wrench, remove the screw plug. (Torx socket wrench T40 09042-00020)



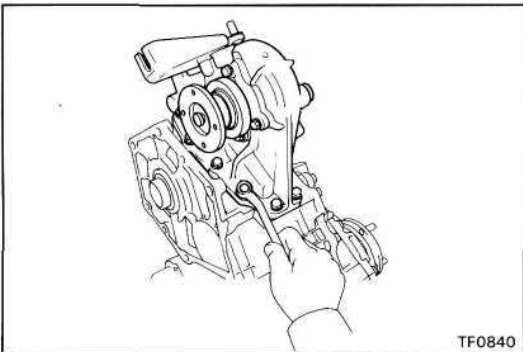
- (b) Using a magnetic finger, remove the spring and ball.

**5. REMOVE TRANSFER INDICATOR SWITCHES**

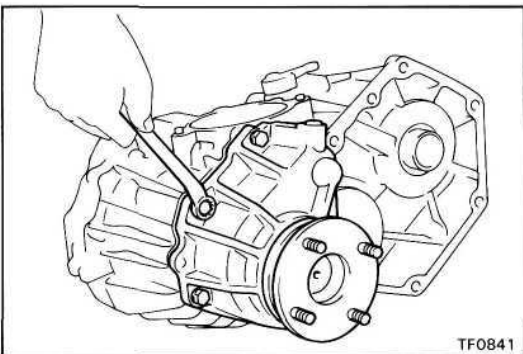
Remove the Center Diff Lock indicator switch, L4 position switch and neutral position switch.

**6. (w/o POWER TAKE-OFF)
REMOVE POWER TAKE-OFF COVER**

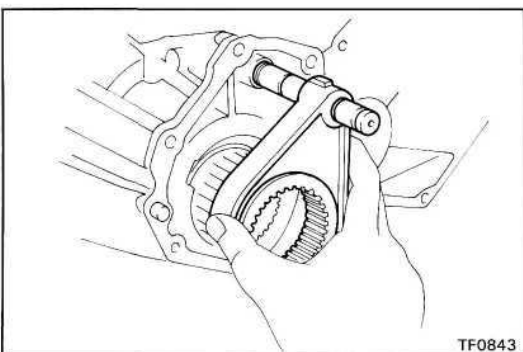
Remove the ten bolts, power take-off cover and gasket.

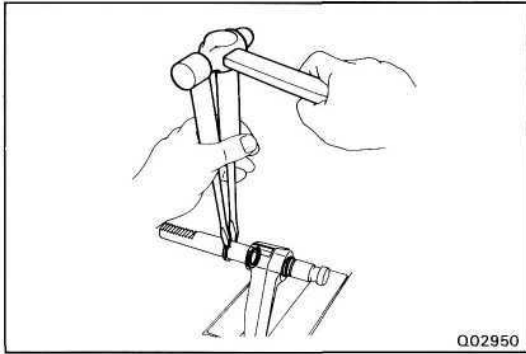
**7. (w/ POWER TAKE-OFF)
REMOVE POWER TAKE-OFF CASE**

Remove the ten bolts, power take-off case and gasket.

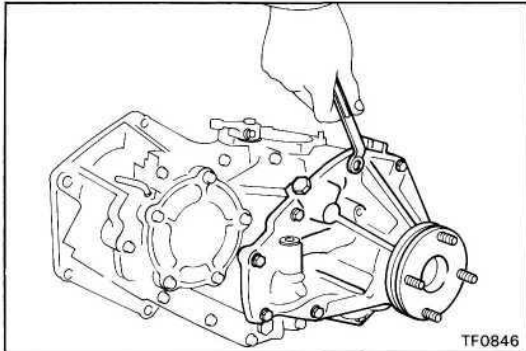
**8. REMOVE FRONT EXTENSION HOUSING**

- (a) Remove the six bolts.
- (b) If necessary, tap the front extension housing with a plastic hammer.

**9. REMOVE CLUTCH SLEEVE, SHIFT FORK NO.2 AND FORK SHAFT**

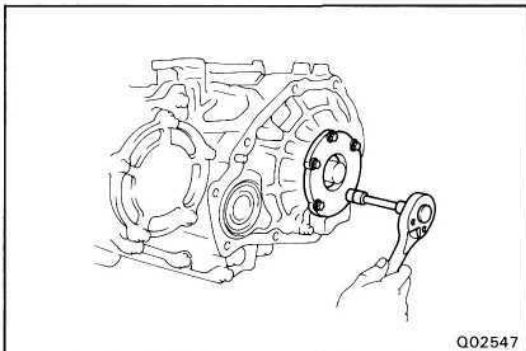
**10. SEPARATE SHIFT FORK NO.2 AND FORK SHAFT**

- (a) Using two screwdrivers and a hammer, tap out the three snap rings.
- (b) Separate the shift fork No.2 and fork shaft.

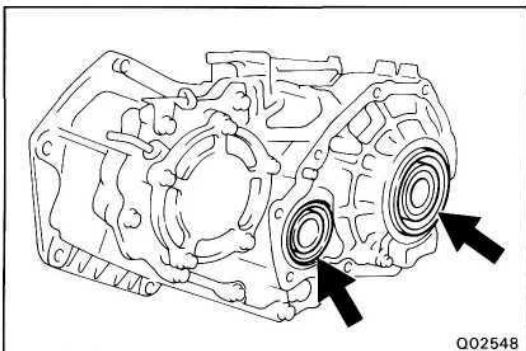
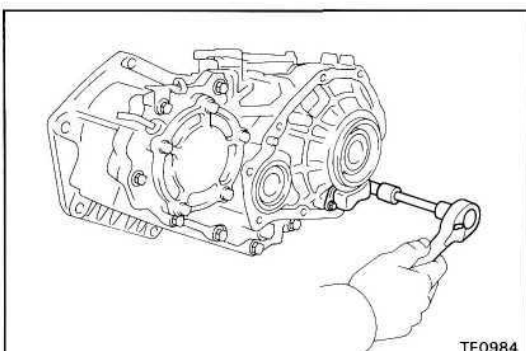
**11. REMOVE REAR EXTENSION HOUSING**

Remove the nine bolts and rear extension housing.

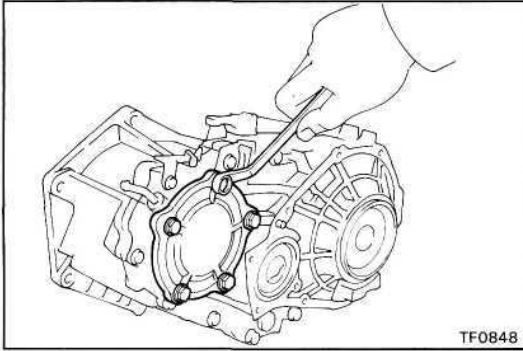
HINT: If necessary, tap the rear extension housing with a plastic hammer.

**12. REMOVE RETAINER**

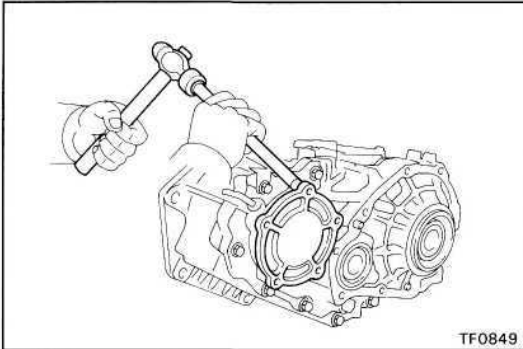
Remove the five bolts and retainer.

**13. REMOVE ADJUSTING SHIMS****14. REMOVE OIL STRAINER FROM REAR CASE**

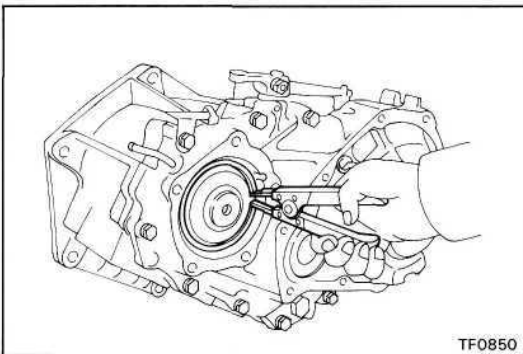
Remove the two set bolts and oil strainer.

**15. REMOVE CASE COVER**

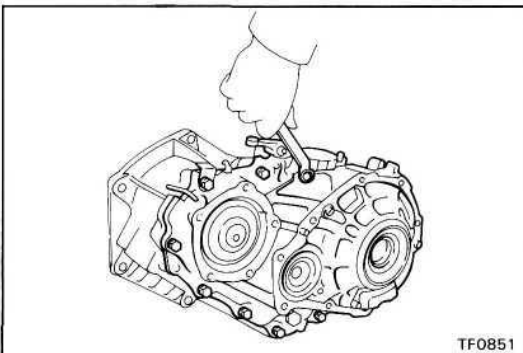
- (a) Remove the five bolts.



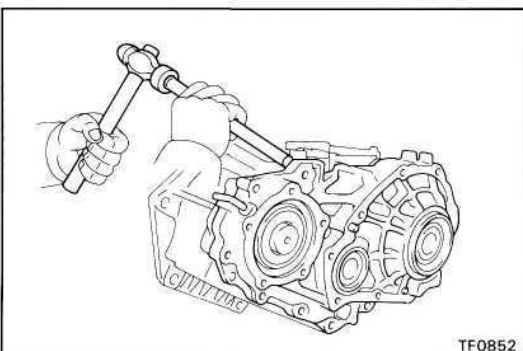
- (b) Using a brass bar and hammer, tap the case cover and remove it.

**16. SEPARATE FRONT CASE AND REAR CASE**

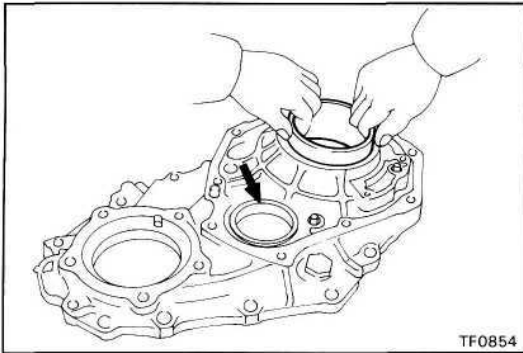
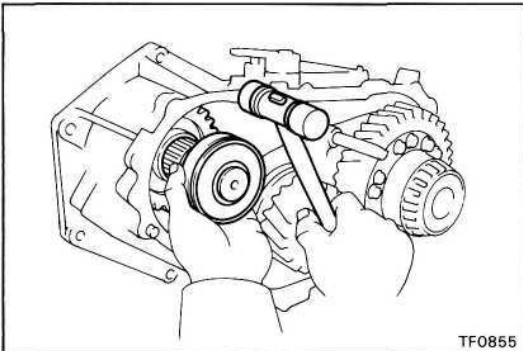
- (a) Using snap ring pliers, remove the snap ring.



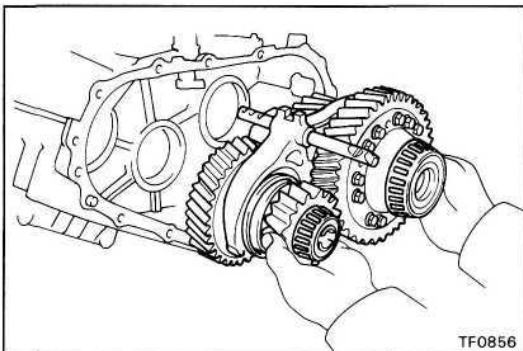
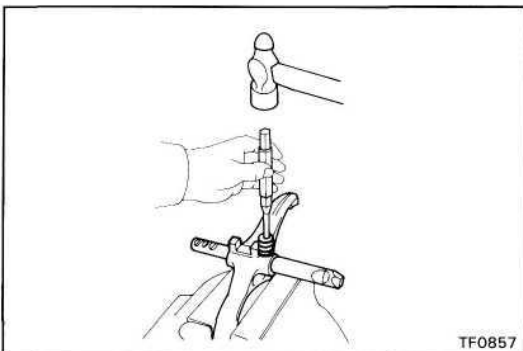
- (b) Remove the eight bolts.



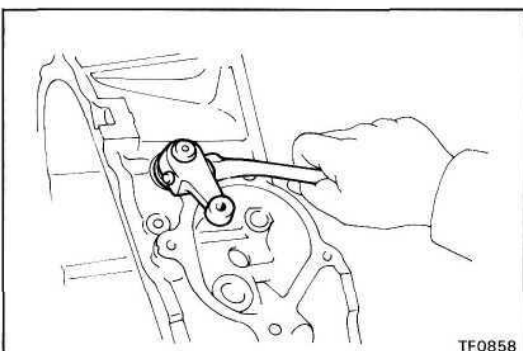
- (c) Using a brass bar and hammer, tap the rear case and separate it.

**17. REMOVE TWO BEARING RACES FROM REAR CASE****18. REMOVE INPUT SHAFT ASSEMBLY**

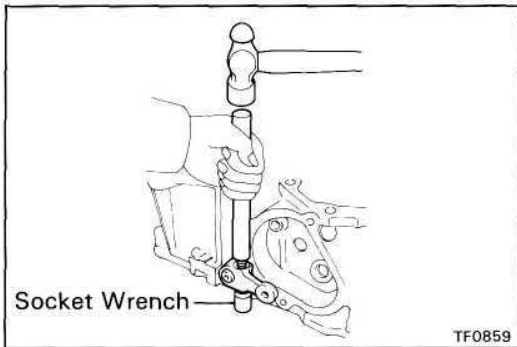
Using a plastic hammer, remove the input shaft assembly.

**19. REMOVE IDLE GEAR ASSEMBLY, CENTER DIFFERENTIAL ASSEMBLY AND HIGH AND LOW SHIFT FORK ASSEMBLY****20. SEPARATE SHIFT FORK NO.1 AND FORK SHAFT**

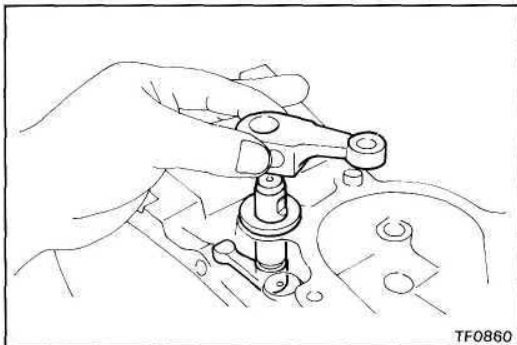
- (a) Using a pin punch and hammer, drive out the slotted spring pin.
- (b) Separate the shift fork No.1 and fork shaft.

**21. REMOVE SHIFT OUTER LEVER AND INNER LEVER**

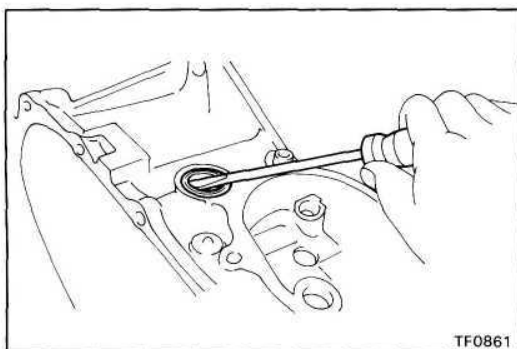
- (a) Remove the nut and washer.



- (b) Using a brass bar, hammer and socket wrench, tap out the lever lock pin.

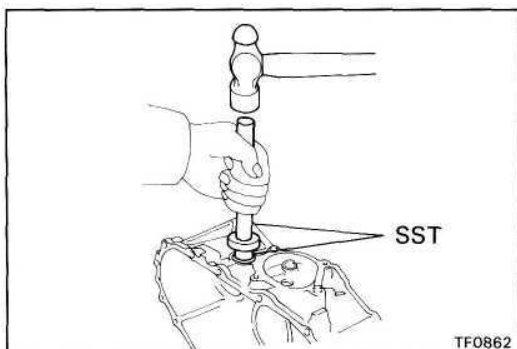


- (c) Remove the shift outer lever and inner lever.

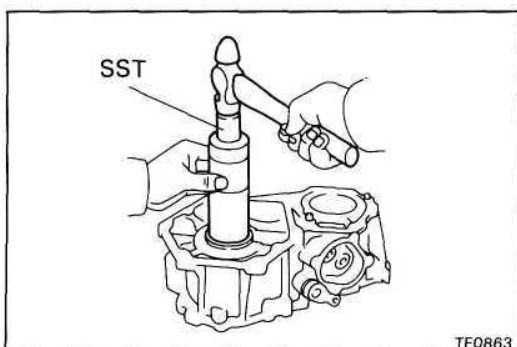


22. IF NECESSARY, REPLACE SHIFT LEVER OIL SEAL

- (a) Using a screwdriver, pry out the oil seal.

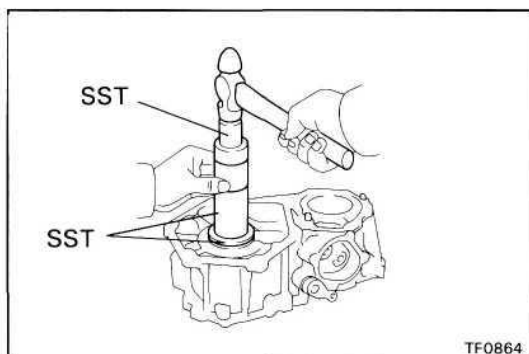


- (b) Using SST and a hammer, drive in a new oil seal.
SST 09608-20012 (09608-00080,
09608-03020)

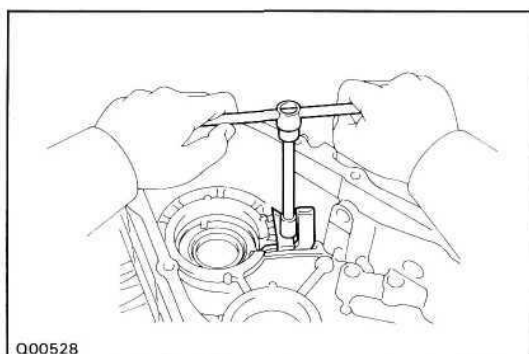


23. IF NECESSARY, REPLACE INPUT SHAFT OIL SEAL

- (a) Using SST and a hammer, drive out the oil seal.
SST 09316-60010 (09316-00010)

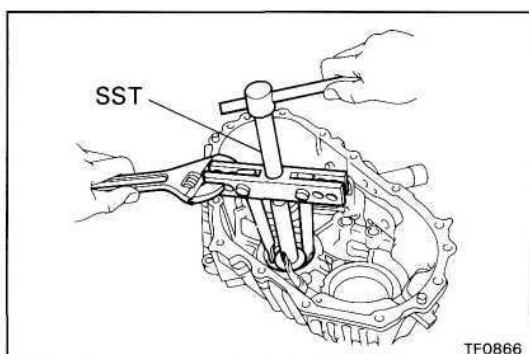


- (b) Using SST and a hammer, drive in a new oil seal.
SST 09316-60010 (09316-00010, 09316-00030)



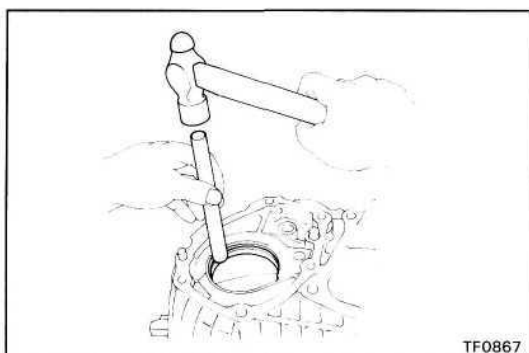
24. REMOVE OIL RECEIVER FROM FRONT CASE

Remove the set bolt and oil receiver.

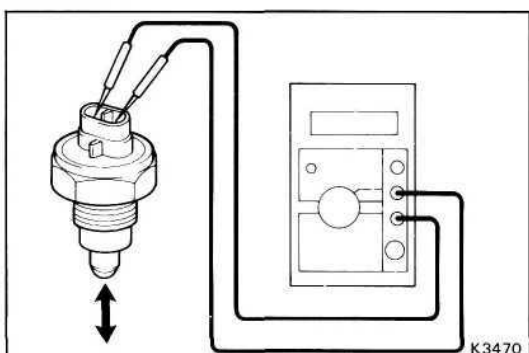


25. REMOVE TWO BEARING RACES FROM FRONT CASE

- (a) Using SST, remove the bearing race.
SST 09950-20017



- (b) Using a brass bar and hammer, remove the bearing race.



26. INSPECTION OF TRANSFER INDICATOR SWITCHES

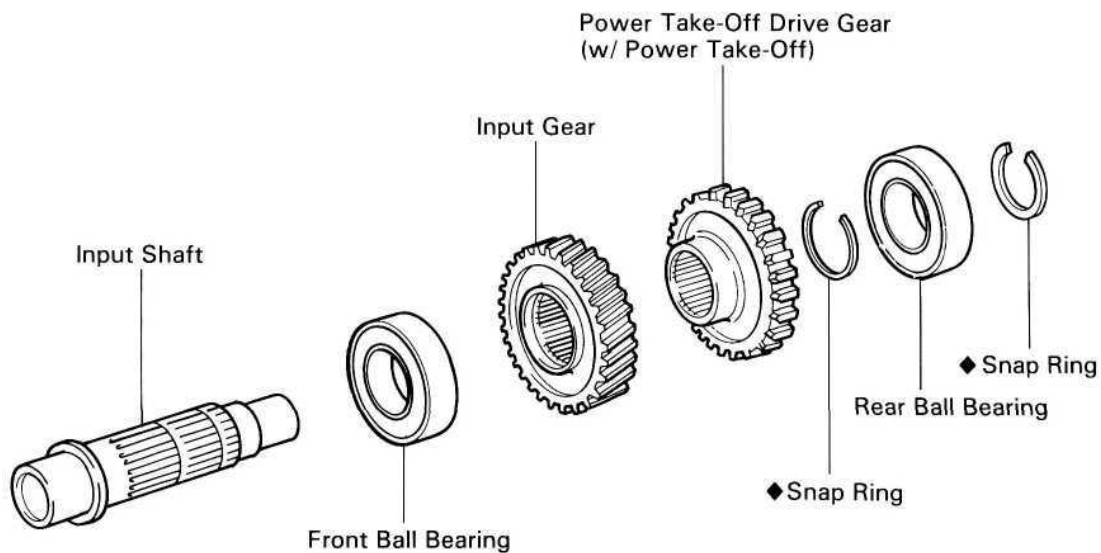
Check that there is continuity between terminals as shown.

Switch Position	Specified
Push	Continuity
Free	No continuity

If continuity is not as specified, replace the switch.

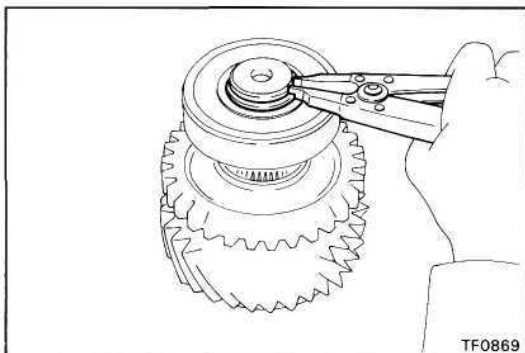
COMPONENT PARTS

Input Shaft Assembly COMPONENTS



◆ Non-reusable part

TF0868

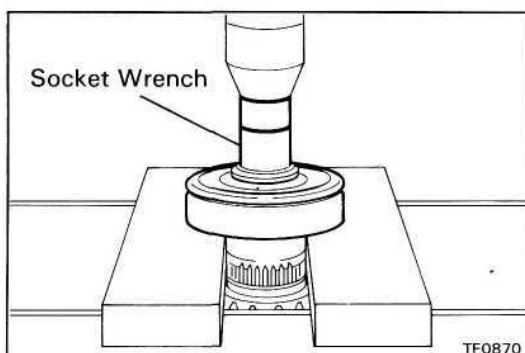


TF0869

DISASSEMBLY OF INPUT SHAFT ASSEMBLY

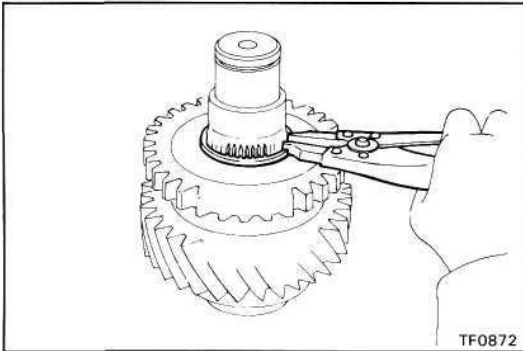
1. REMOVE REAR BALL BEARING

(a) Using snap ring pliers, remove the snap ring.

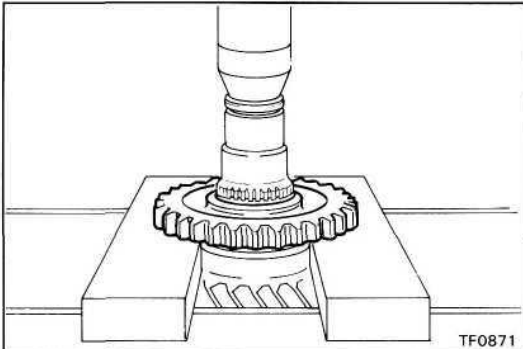


TF0870

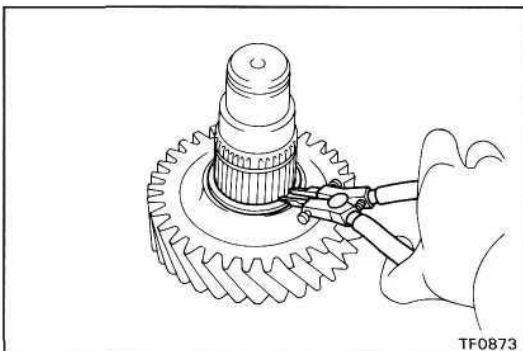
(b) Using a press and socket wrench, remove the rear ball bearing.

**2. (w/ POWER TAKE-OFF)****REMOVE POWER TAKE-OFF DRIVE GEAR**

- (a) Using snap ring pliers, remove the snap ring.

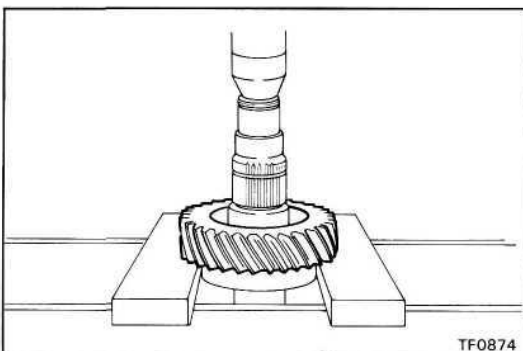


- (b) Using a press, remove the power take-off drive gear.

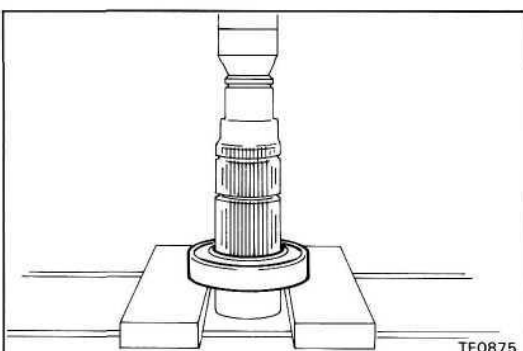
**3. REMOVE INPUT GEAR**

- (a) (w/o Power take-off)

Using snap ring pliers, remove the snap ring.



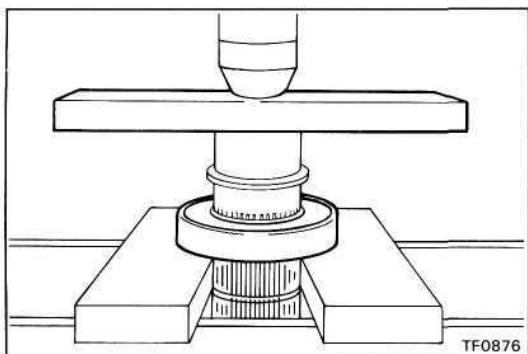
- (b) Using a press, remove the input gear.

**4. REMOVE FRONT BALL BEARING**

Using a press, remove the front ball bearing.

ASSEMBLY OF INPUT SHAFT ASSEMBLY**1. INSTALL FRONT BALL BEARING**

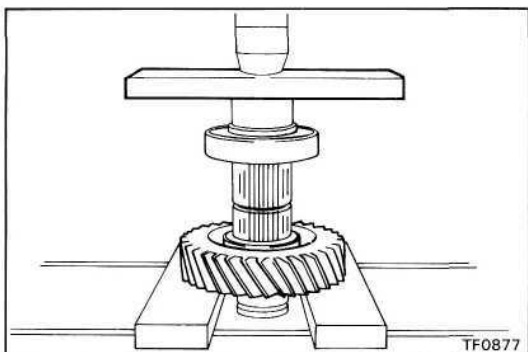
Using a press, install the front ball bearing.



TF0876

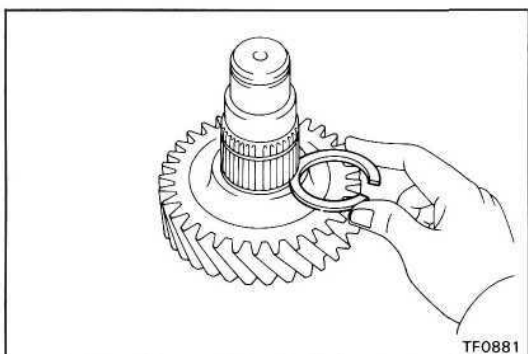
2. INSTALL INPUT GEAR

(a) Using a press, install the input gear.

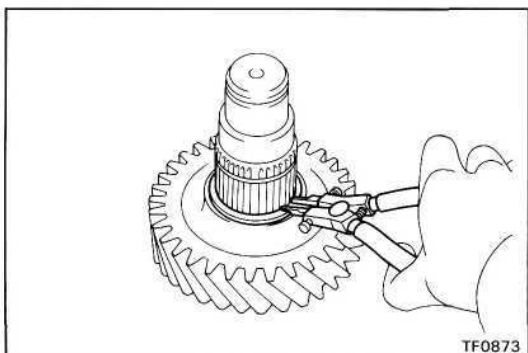


TF0877

(b) (w/o Power take-off)
Select a snap ring that will allow minimum axial play and install it on the shaft.



TF0881

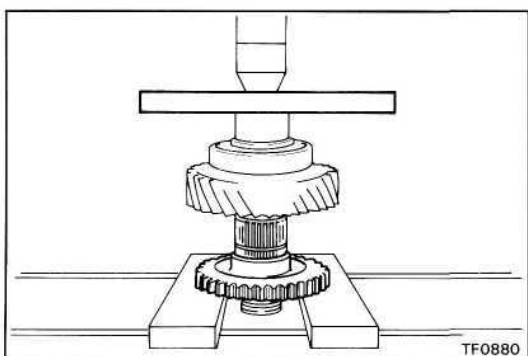


TF0873

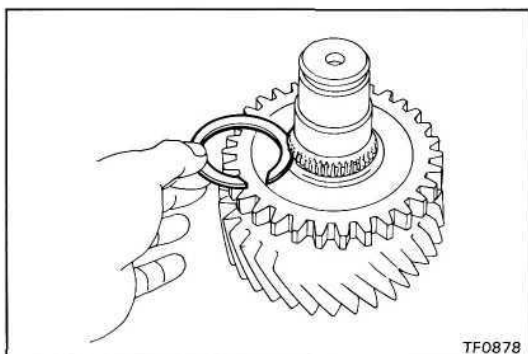
Mark	Thickness mm (in.)
A	2.0 (0.0787)
B	2.1 (0.0827)
C	2.2 (0.0866)
D	2.3 (0.0906)
E	2.4 (0.0945)
F	2.5 (0.0984)
G	2.6 (0.1024)
H	2.7 (0.1063)
J	2.8 (0.1102)

**3. (w/ POWER TAKE-OFF)
INSTALL POWER TAKE-OFF GEAR**

(a) Using a press, install the power take-off gear.

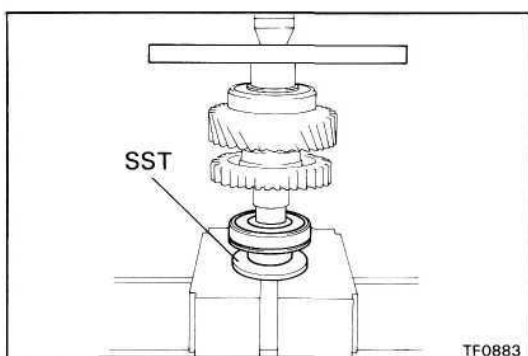
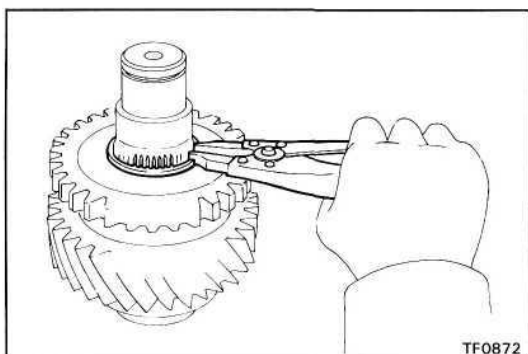


TF0880



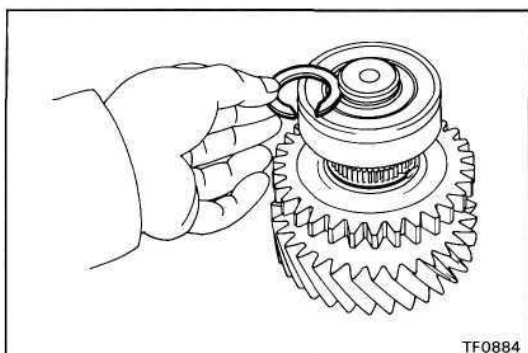
- (b) Select a snap ring that will allow minimum axial play and install it on the shaft.

Mark	Thickness mm (in.)
A	2.0 (0.0787)
B	2.1 (0.0827)
C	2.2 (0.0866)
D	2.3 (0.0906)
E	2.4 (0.0945)
F	2.5 (0.0984)
G	2.6 (0.1024)
H	2.7 (0.1063)
J	2.8 (0.1102)



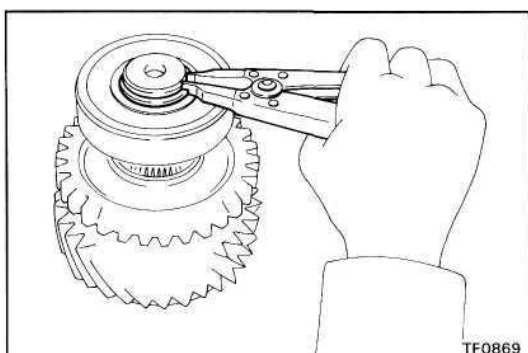
4. INSTALL REAR BALL BEARING

- (a) Using SST and a press, install the rear ball bearing.
SST 09316-60010 (09316-00030)



- (b) Select a snap ring that will allow minimum axial play.

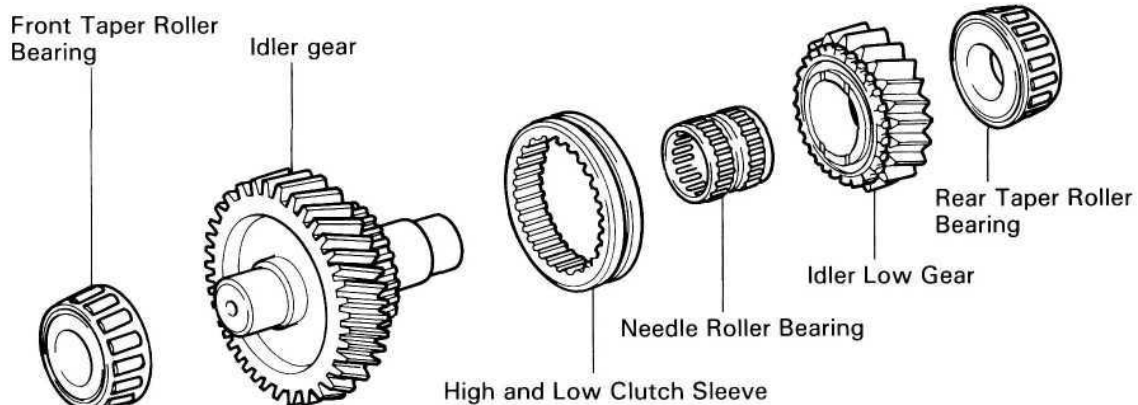
Mark	Thickness mm (in.)
A	2.0 (0.0787)
B	2.1 (0.0827)
C	2.2 (0.0866)
D	2.3 (0.0906)
E	2.4 (0.0945)



- (c) Using snap ring pliers, install the snap ring.

Idler Gear Assembly

COMPONENTS



TF0886

DISASSEMBLY OF IDLER GEAR ASSEMBLY

1. CHECK OIL CLEARANCE AND THRUST CLEARANCE OF IDLER LOW GEAR

- (a) Using a feeler gauge, measure the idler low gear thrust clearance.

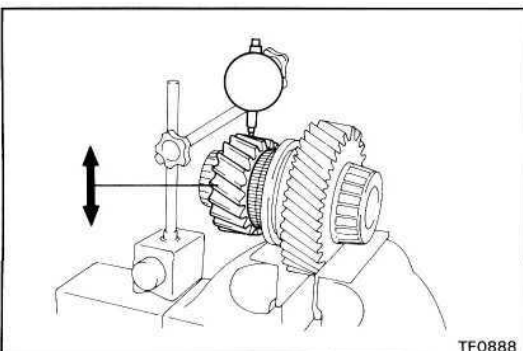
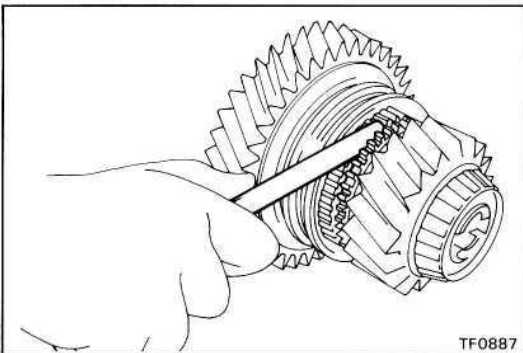
Standard clearance: 0.125 — 0.275 mm
(0.0049 - 0.0108 in.)

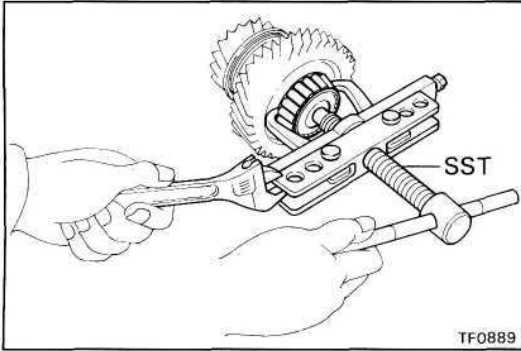
Maximum clearance: 0.275 mm (0.0108 in.)

- (b) Using a dial indicator, measure the idler low gear oil clearance.

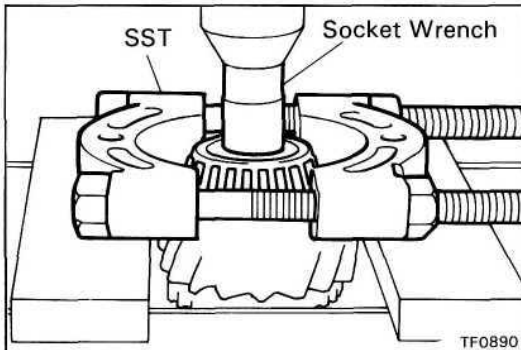
Standard clearance: 0.015 — 0.068 mm
(0.0006 - 0.0027 in.)

Maximum clearance: 0.068 mm (0.0027 in.)

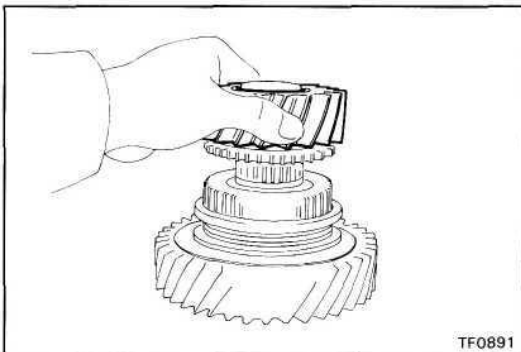
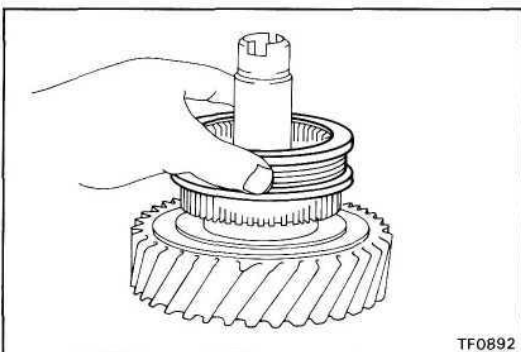
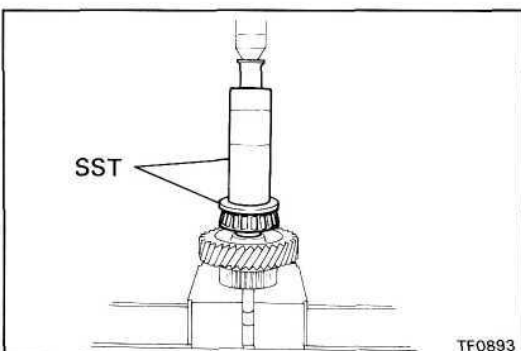


**2. REMOVE FRONT TAPER ROLLER BEARING**

Using SST, remove the front taper roller bearing.
SST 09950-20017

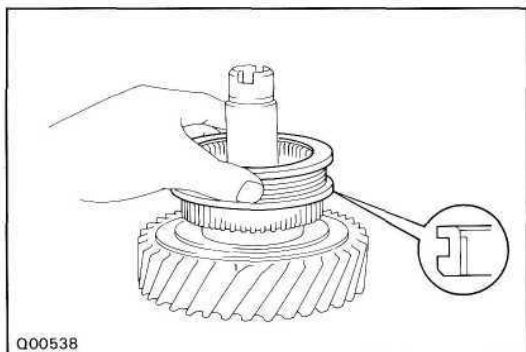
**3. REMOVE REAR TAPER ROLLER BEARING**

Using SST, press and socket wrench, remove the rear taper roller bearing.
SST 09950-00020

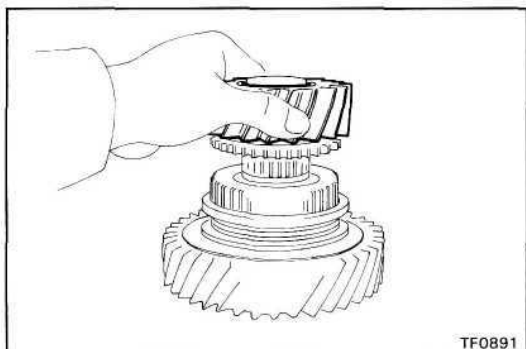
**4. REMOVE IDLER LOW GEAR AND NEEDLE ROLLER BEARING****5. REMOVE HIGH AND LOW CLUTCH SLEEVE****ASSEMBLY OF IDLER GEAR ASSEMBLY****1. INSTALL FRONT TAPER ROLLER BEARING**

Using SST and a press, install the front taper roller bearing.

SST 09316-60010 (09316-00010, 09316-00030)

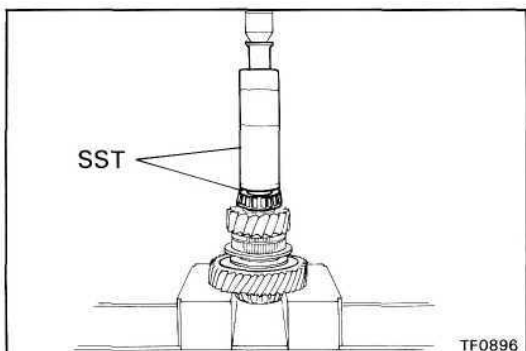


2. INSTALL HIGH AND LOW CLUTCH SLEEVE



3. INSTALL NEEDLE ROLLER BEARING AND IDLER LOW GEAR

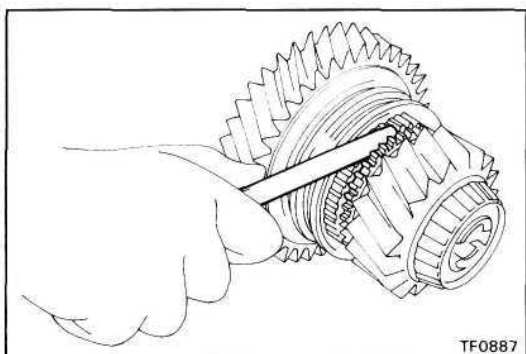
- (a) Apply gear oil to the needle roller bearing.
- (b) Install the needle roller bearing and idler low gear.



4. INSTALL REAR TAPER ROLLER BEARING

Using SST and a press, install the rear taper roller bearing.

SST 09316-60010 (09316-00010, 09316-00070)

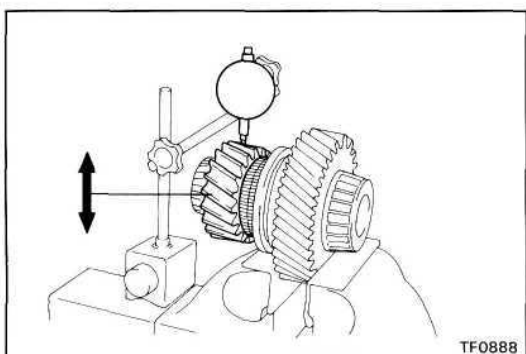


5. MEASURE OIL CLEARANCE AND THRUST CLEARANCE OF IDLE LOW GEAR

- (a) Using a feeler gauge, measure the idler low gear thrust clearance.

Standard clearance: 0.125 — 0.275 mm
(0.0049 - 0.0108 in.)

Maximum clearance: 0.275 mm (0.0108 in.)

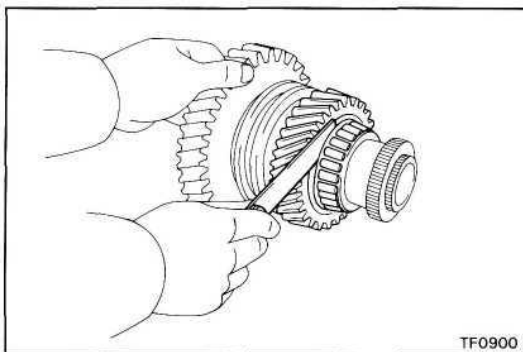
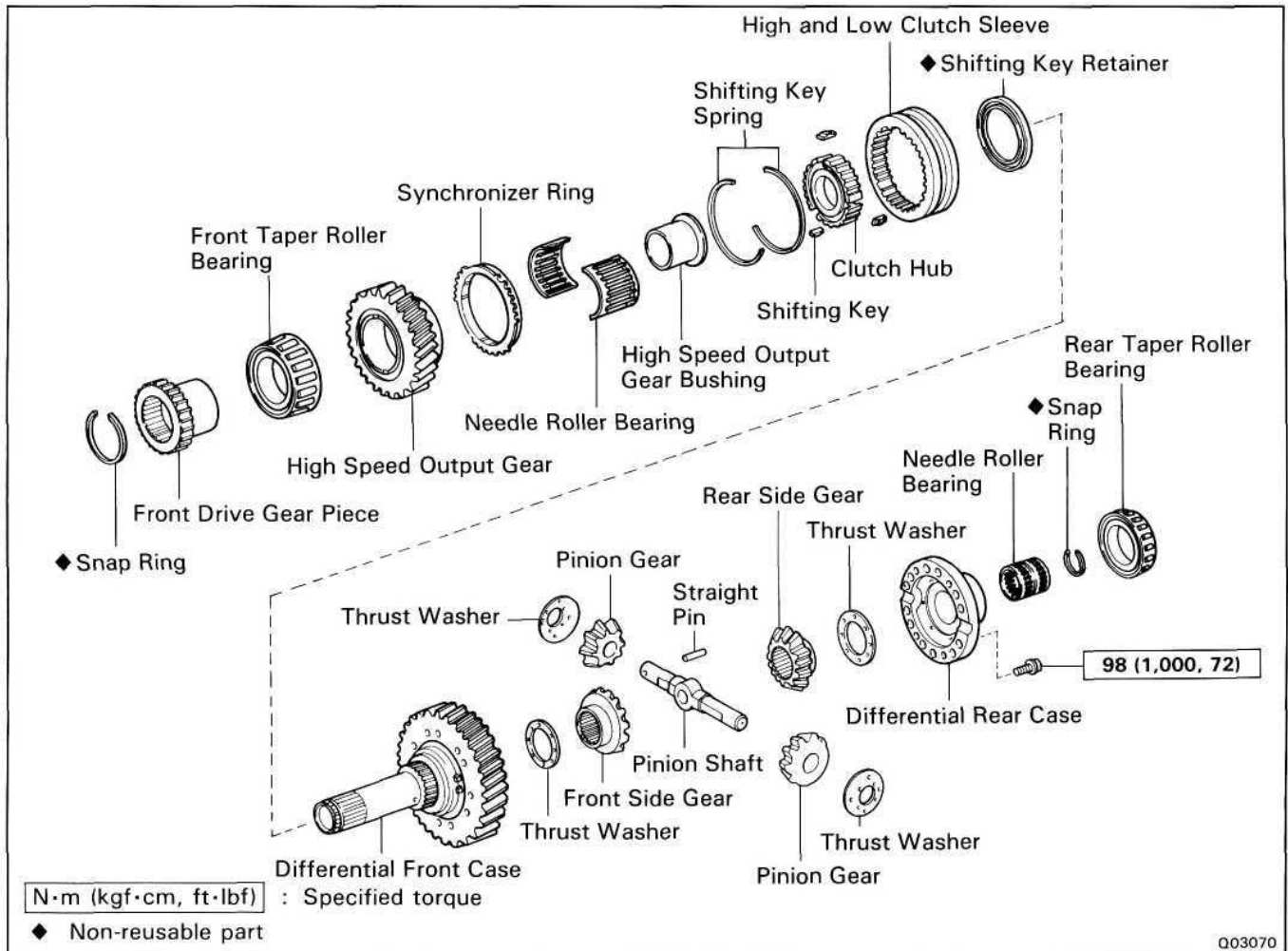


- (b) Using a dial indicator, measure the idler low gear oil clearance.

Standard clearance: 0.015 — 0.068 mm
(0.0006 - 0.0027 in.)

Maximum clearance: 0.068 mm (0.0027 in.)

Center Differential Assembly COMPONENTS



DISASSEMBLY OF CENTER DIFFERENTIAL ASSEMBLY

1. CHECK OIL CLEARANCE AND THRUST CLEARANCE OF HIGH SPEED GEAR

- (a) Using a feeler gauge, measure the high speed gear thrust clearance.

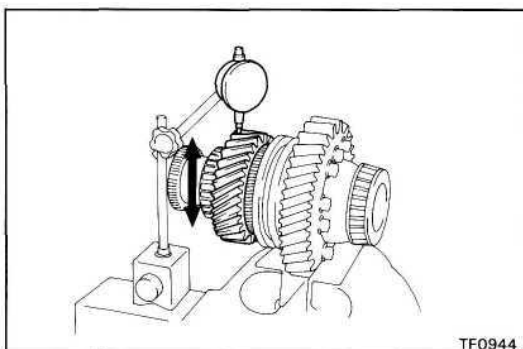
Standard clearance: 0.10 — 0.25 mm
(0.0039 - 0.0098 in.)

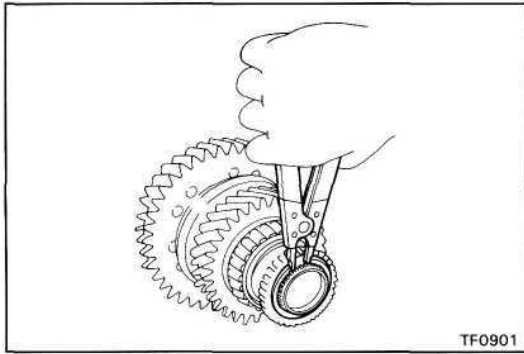
Maximum clearance: 0.25 mm (0.0098 in.)

- (b) Using a dial indicator, measure the high speed gear oil clearance.

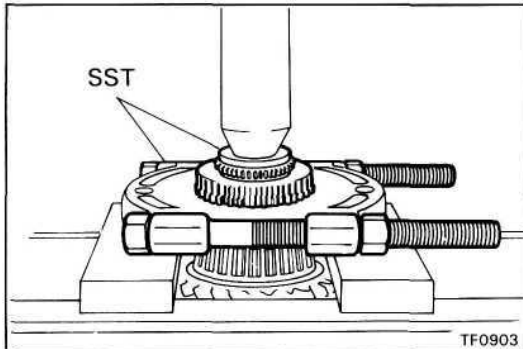
Standard clearance: 0.015 — 0.071 mm
(0.0006 - 0.0028 in.)

Maximum clearance: 0.071 mm (0.0028 in.)



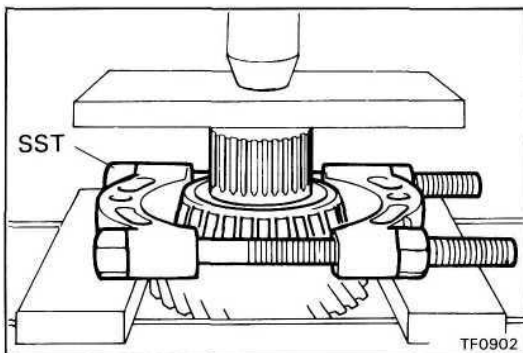
**2. REMOVE FRONT DRIVE GEAR PIECE**

- (a) Using snap ring pliers, remove the snap ring.



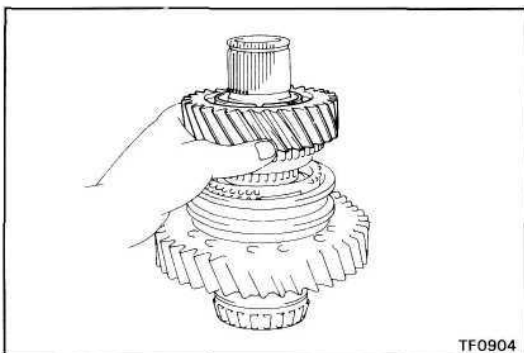
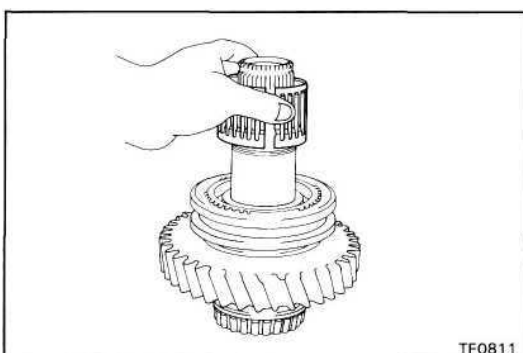
- (b) Using SST and a press, remove the front drive gear piece.
SST 09950-20017, 09950-00020

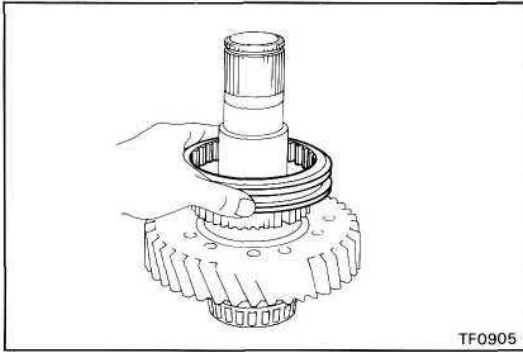
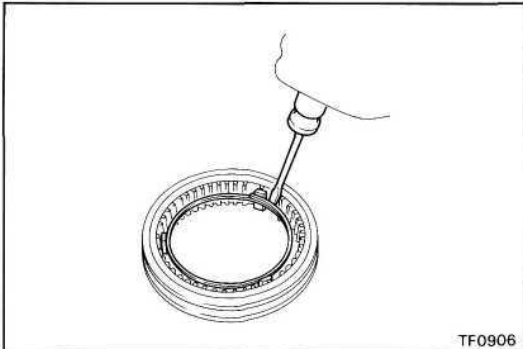
NOTICE: Be careful do not drop the center differential assembly.

**3. REMOVE FRONT TAPER ROLLER BEARING**

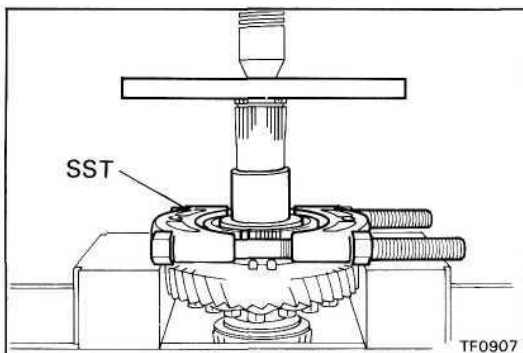
Using SST and a press, remove the front taper roller bearing.

SST 09950-00020

**4. REMOVE HIGH SPEED OUTPUT GEAR AND SYNCHRONIZER RING****5. REMOVE NEEDLE ROLLER BEARING**

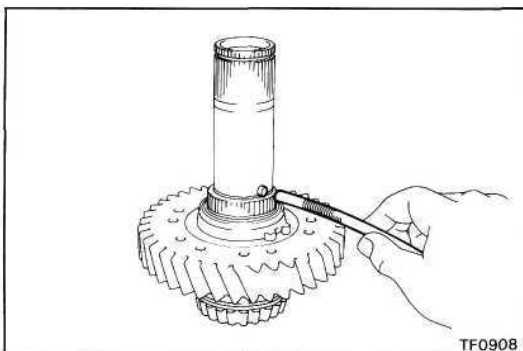
**6. REMOVE HIGH AND LOW CLUTCH SLEEVE ASSEMBLY****7. REMOVE HIGH AND LOW CLUTCH SLEEVE SHIFTING KEYS AND SPRINGS**

Using a screwdriver, remove the two shifting key springs and shifting keys.

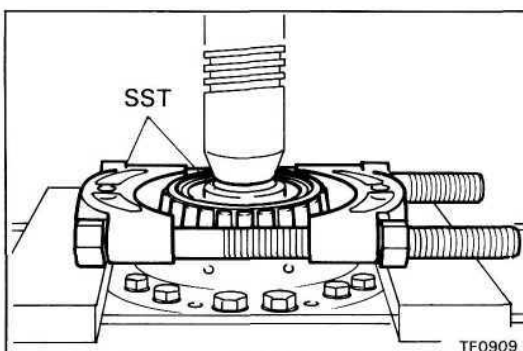
**8. REMOVE HIGH SPEED OUTPUT GEAR BUSHING, CLUTCH HUB AND SHIFTING KEY RETAINER**

- (a) Using SST and a press, remove the high speed output gear bushing, clutch hub and shifting key retainer.

SST 09555-55010



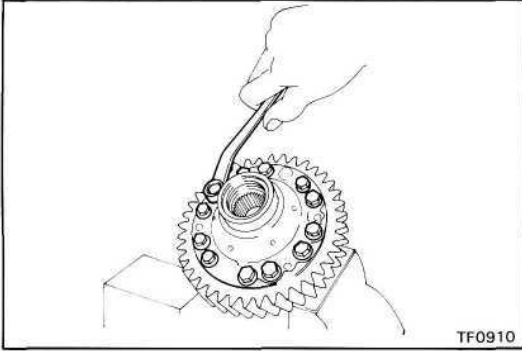
- (b) Using a magnetic finger, remove the two straight pins.

**9. REMOVE REAR TAPER ROLLER BEARING**

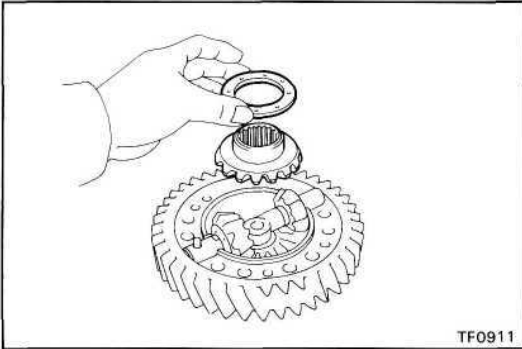
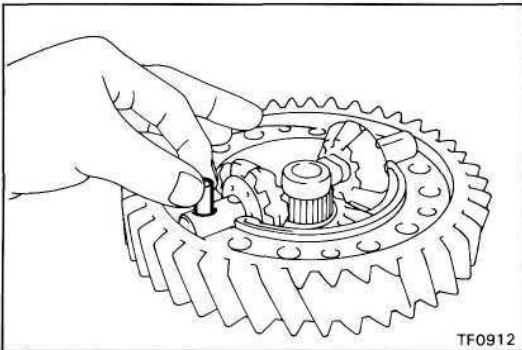
Using SST and a press, remove the rear taper roller bearing.

SST 09950-00020, 09950-20017 (09958-30010)

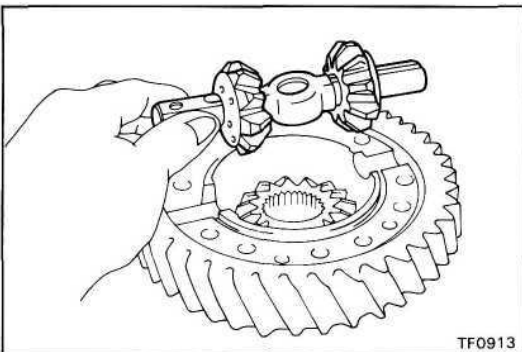
10. REMOVE SNAP RING AND NEEDLE ROLLER BEARING

**11. REMOVE DIFFERENTIAL REAR CASE**

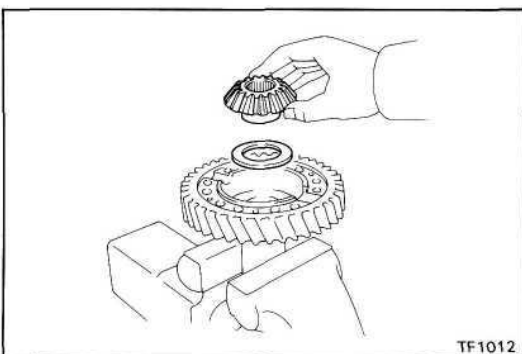
Remove the twelve bolts and differential rear case.

**12. REMOVE REAR SIDE GEAR AND THRUST WASHER****13. REMOVE PINION SHAFT, PINION GEAR AND THRUST WASHER**

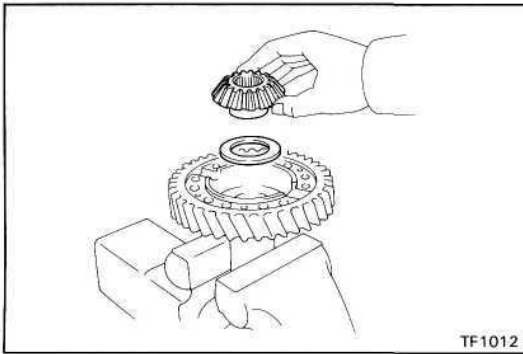
(a) Remove the straight pin.



(b) Remove the pinion shaft, pinion gear and thrust washer.



(c) Remove the front side gear and thrust washer.

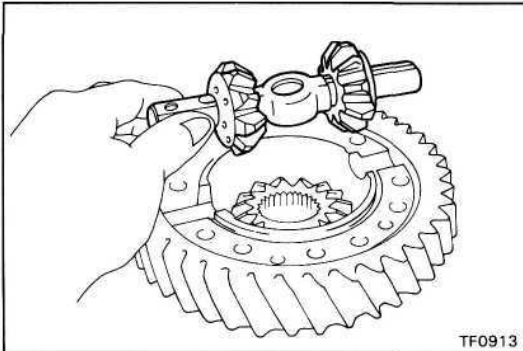


ASSEMBLY OF CENTER DIFFERENTIAL ASSEMBLY

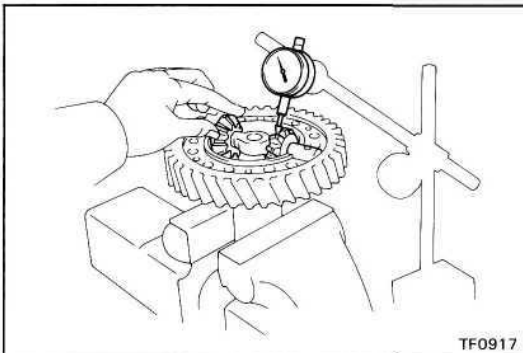
1. INSTALL PINION SHAFT, PINION GEAR AND THRUST WASHER

HINT: Coat all of the sliding and rotating surface with gear oil before assembly.

- (a) Install the front side gear and thrust washer to the differential front case.



- (b) Install the two pinion gears and thrust washers to the differential front case.



- (c) Using a dial indicator, measure the front case backlash.

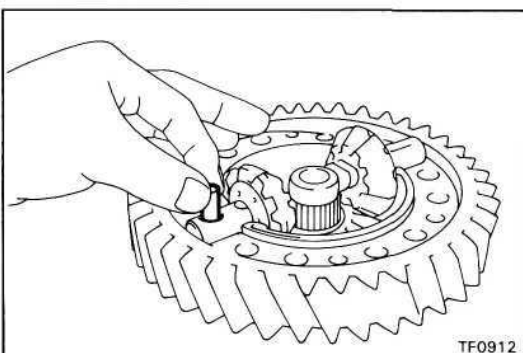
HINT: Push the pinion shaft.

Minimum backlash: 0.05 mm (0.0020 in.)

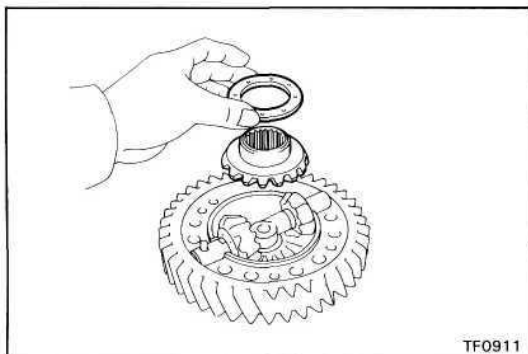
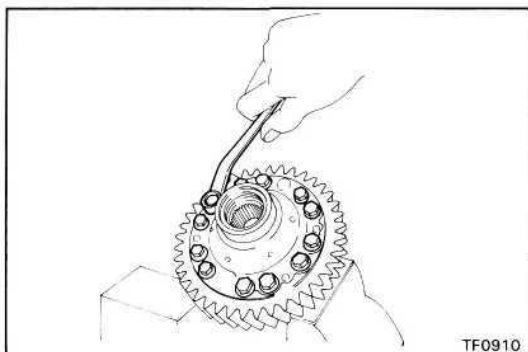
If the backlash is not within specification, replace the thrust washer with one of the correct size and reinstall the thrust washer.

Thickness	mm (in.)
1.70	(0.0669)
1.85	(0.0728)
2.00	(0.0787)
2.15	(0.0846)
2.30	(0.0906)
2.45	(0.0965)
2.60	(0.1024)
2.75	(0.1083)
2.90	(0.1142)
3.05	(0.1201)

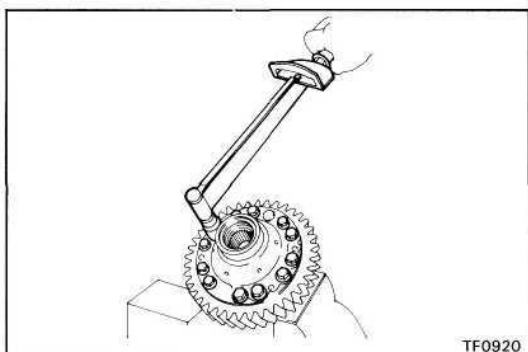
- (d) Measure the rear case backlash.
(See steps (a) to (c))



2. INSTALL STRAIGHT PIN

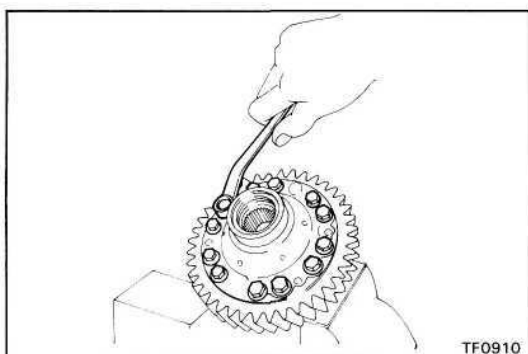
**3. INSTALL REAR SIDE GEAR AND THRUST WASHER****4. INSTALL DIFFERENTIAL REAR CASE**

Temporary install the differential rear case and set bolts.

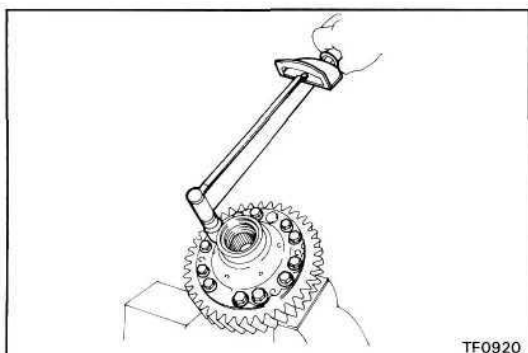
**5. TORQUE REAR CASE SET BOLTS**

(a) Torque the rear case set bolts.

Torque: 88 N-m (900 kgf-cm, 65 ft-lbf)



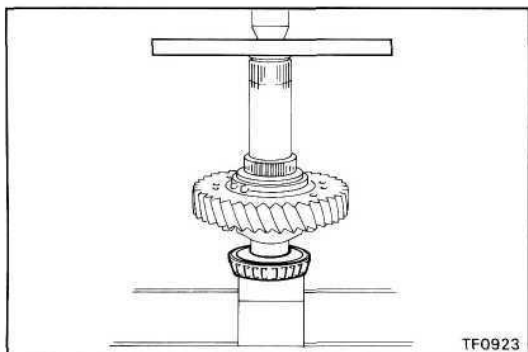
(b) Loosen the rear case set bolts.



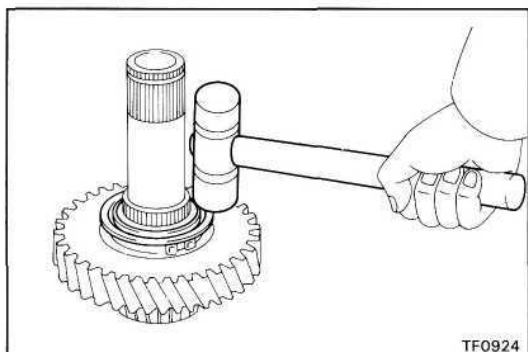
(c) Retorque the rear case set bolts.

Torque: 98 N-m (1000 kgf-cm, 72 ft-lbf)

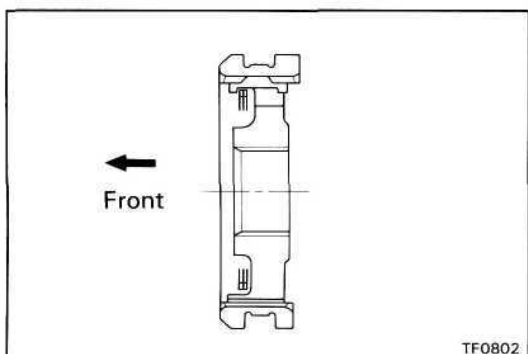
6. INSTALL NEEDLE ROLLER BEARING AND SNAP RING

**7. INSTALL REAR TAPER ROLLER BEARING**

Using a press, install the rear taper roller bearing.

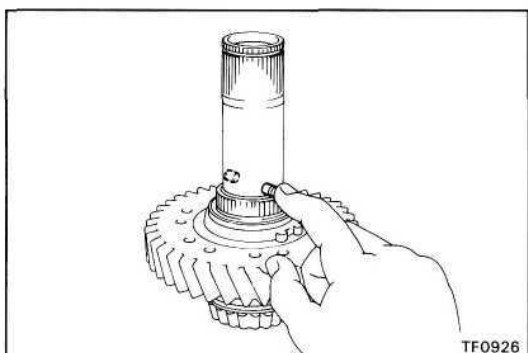
**8. INSTALL SHIFTING KEY RETAINER**

Using a plastic hammer, tap in the shifting key retainer.

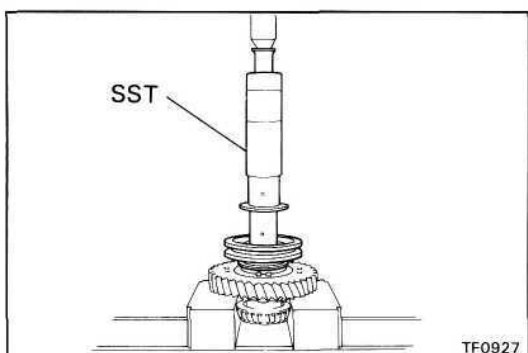
**9. INSERT CLUTCH HUB INTO HIGH AND LOW CLUTCH SLEEVE**

- (a) Install the clutch hub and shifting keys to the high and low clutch sleeve.
- (b) Install the shifting key springs.

NOTICE: Install the key springs positioned so that their end gaps are not in line.

**10. INSTALL HIGH AND LOW CLUTCH SLEEVE ASSEMBLY AND HIGH SPEED OUTPUT GEAR BUSHING**

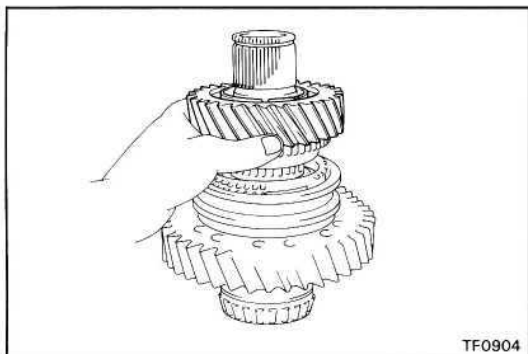
- (a) Apply MP grease to the straight pin.
- (b) Install the two straight pins.



- (c) Using SST and a press, install the clutch sleeve assembly and high speed output gear bushing.

SST 09316-60010 (09316-00010)

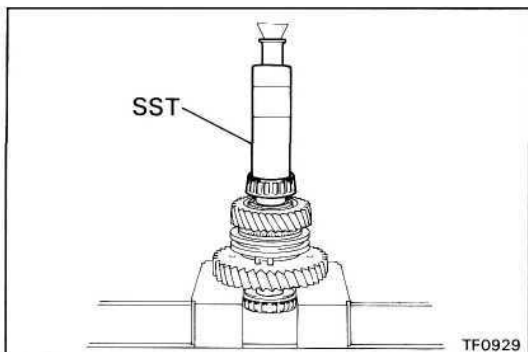
NOTICE: Before pressing, align the holes on the bushing and shaft so that the pin on the shaft aligned with the cutting portion of the bushing.



11. INSTALL HIGH SPEED OUTPUT GEAR AND NEEDLE ROLLER BEARING

- (a) Apply gear oil to the needle roller bearing.
- (b) Place the synchronizer ring on the gear and install the high speed output gear and needle roller bearing.

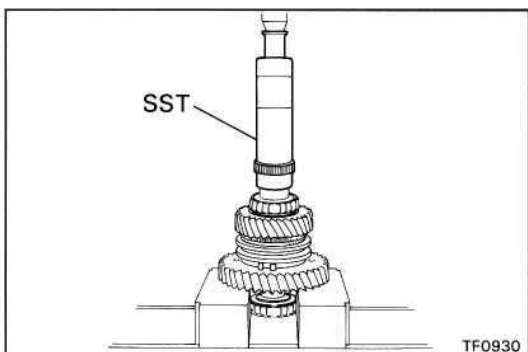
NOTICE: Align the ring slots with the shifting keys.



12. INSTALL FRONT TAPER ROLLER BEARING

Using SST and a press, install the front taper roller bearing.

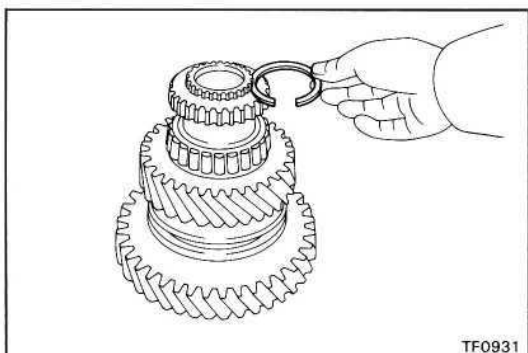
SST 09316-60010 (09316-00010)



13. INSTALL FRONT DRIVE GEAR PIECE

Using SST and a press, install the front drive gear piece.

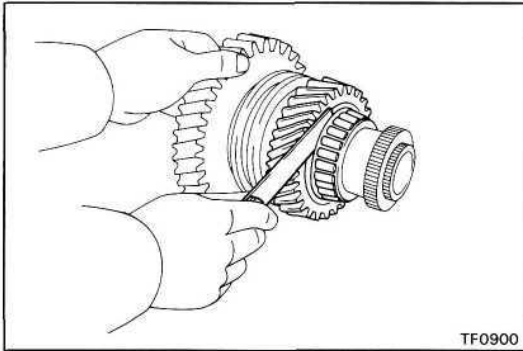
SST 09316-60010 (09316-00010)



14. INSTALL SNAP RING

Select a snap ring that will allow minimum axial play and install it on the shaft.

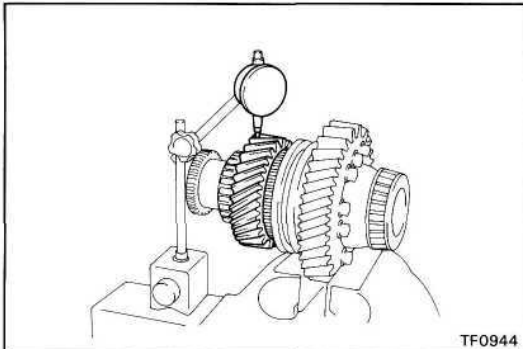
Mark	Thickness mm (in.)
A	2.00 (0.0787)
B	2.10 (0.0827)
C	2.20 (0.0866)
D	2.30 (0.0906)
E	2.40 (0.0945)
F	2.50 (0.0984)
G	2.60 (0.1024)
H	2.70 (0.1063)
J	2.80 (0.1102)
K	1.80 (0.0709)
L	1.90 (0.0748)

**15. MEASURE OIL CLEARANCE AND THRUST CLEARANCE OF HIGH SPEED OUTPUT GEAR**

- (a) Using a feeler gauge, measure the high speed gear thrust clearance.

Standard clearance: 0.10 — 0.25 mm
(0.0039 - 0.0098 in.)

Maximum clearance: 0.25 mm (0.0098 in.)

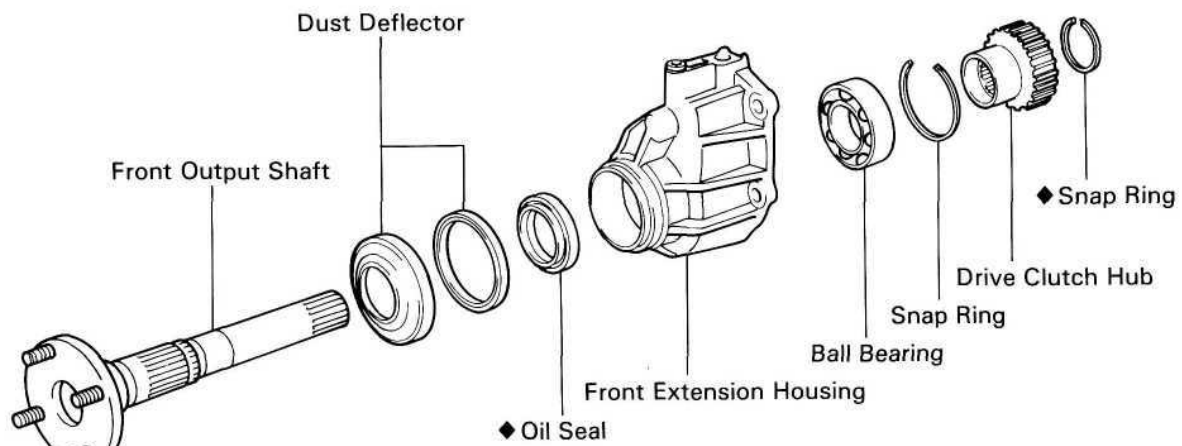


- (b) Using a dial indicator, measure the high speed gear oil clearance.

Standard clearance: 0.015 — 0.071 mm
(0.0006 - 0.0028 in.)

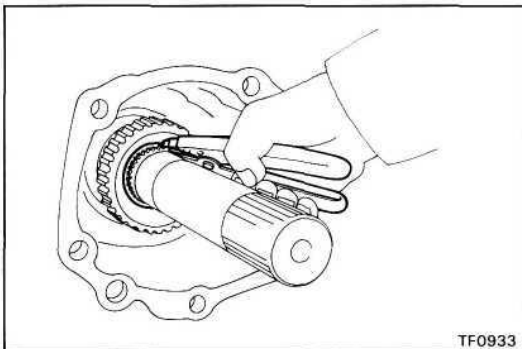
Maximum clearance: 0.071 mm (0.0028 in.)

Front Extension Housing Assembly COMPONENTS



◆ Non-reusable part

TF0932

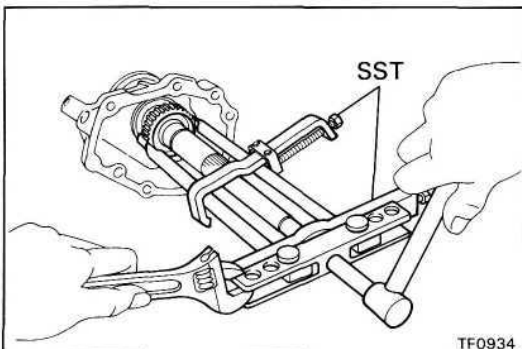


TF0933

DISASSEMBLY OF FRONT EXTENSION HOUSING ASSEMBLY

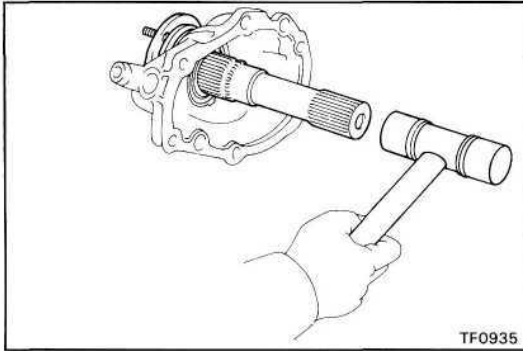
1. REMOVE DRIVE CLUTCH HUB

(a) Using snap ring pliers, remove the snap ring.

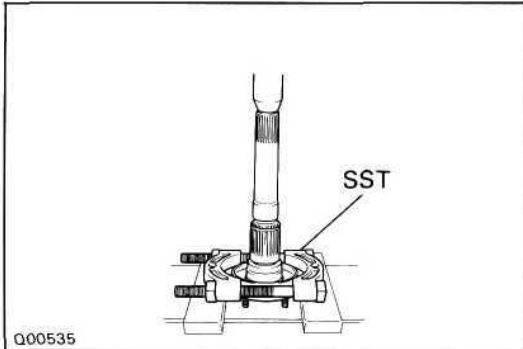


TF0934

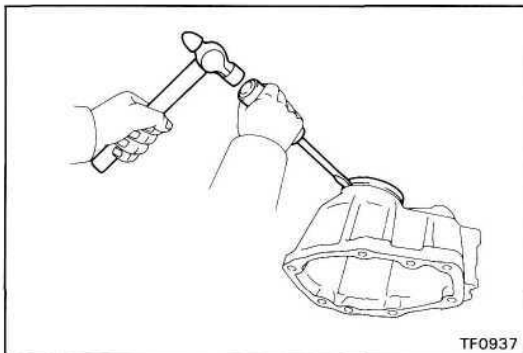
(b) Using SST, remove the drive clutch hub.
SST 09950-2001 7

**2. REMOVE FRONT OUTPUT SHAFT**

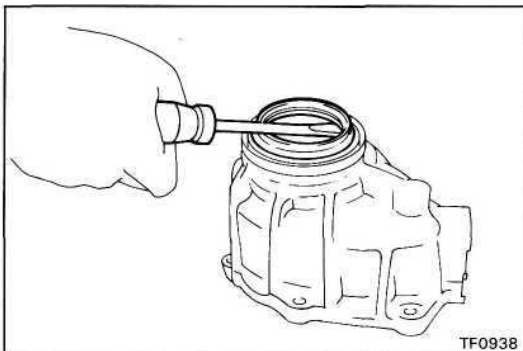
Using a plastic hammer, drive out the front output shaft.

**3. REMOVE DUST DEFLECTORS**

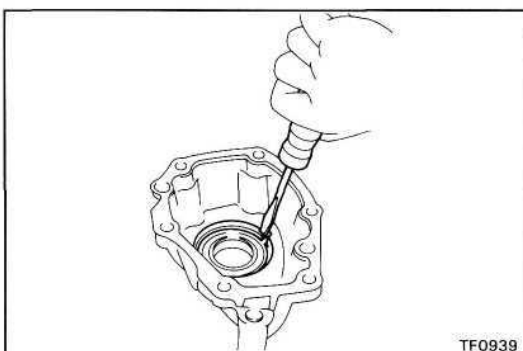
- (a) Using SST and a press, remove the dust deflector.
SST 09950-00020



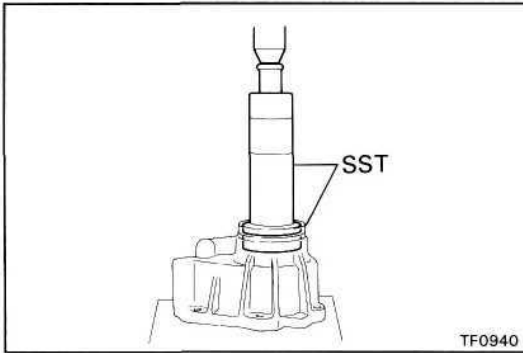
- (b) Using a screwdriver and hammer, tap the dust deflector and remove it.

**4. REMOVE OIL SEAL**

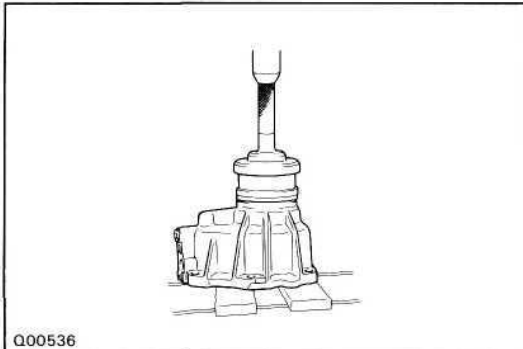
Using a screwdriver, pry out the oil seal.

**5. REMOVE BALL BEARING**

- (a) Using a screwdriver, remove the snap ring.



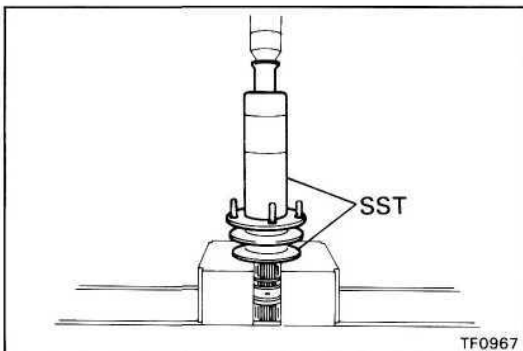
- (b) Using SST and a press, remove the ball bearing.
SST 09316-60010 (09316-00010, 09316-00070)



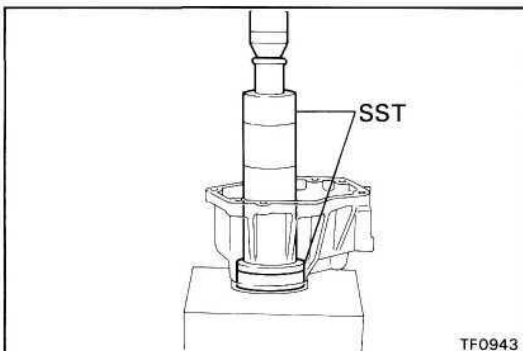
ASSEMBLY OF FRONT EXTENSION HOUSING ASSEMBLY

1. INSTALL DUST DEFLECTORS

- (a) Using SST and a press, install the dust deflector.
SST 09223-41020, 09223-1 5020

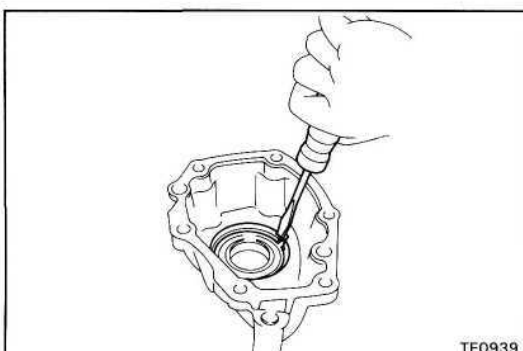


- (b) Using SST and a press, install the dust deflector.
SST 09316-60010 (09316-00010),
09316-20011

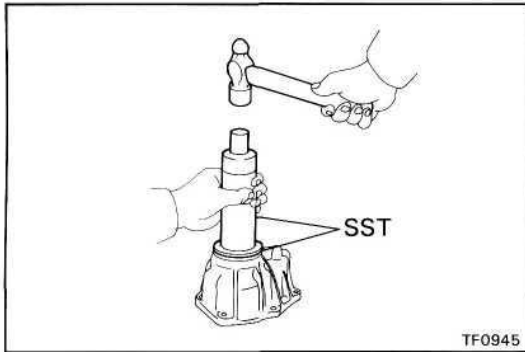


2. INSTALL BALL BEARING

- (a) Using SST and a press, install the ball bearing.
SST 09316-60010 (09316-00010, 09316-00030)



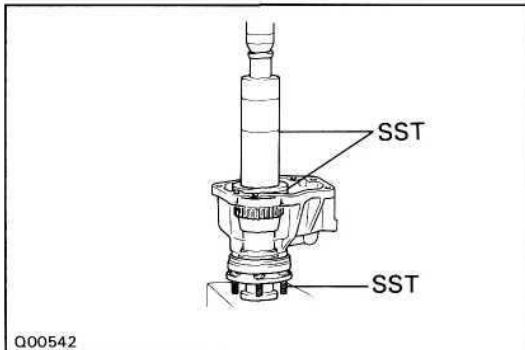
- (b) Using a screwdriver, install the snap ring.



3. INSTALL OIL SEAL

Using SST and a hammer, drive in a new oil seal.

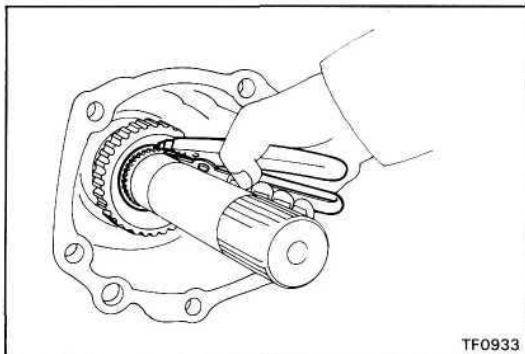
SST 09316-60010 (09316-00010, 09316-00060)



4. INSTALL FRONT OUTPUT SHAFT AND DRIVE CLUTCH HUB

- (a) Using SST and press, install the front output shaft and drive clutch hub.

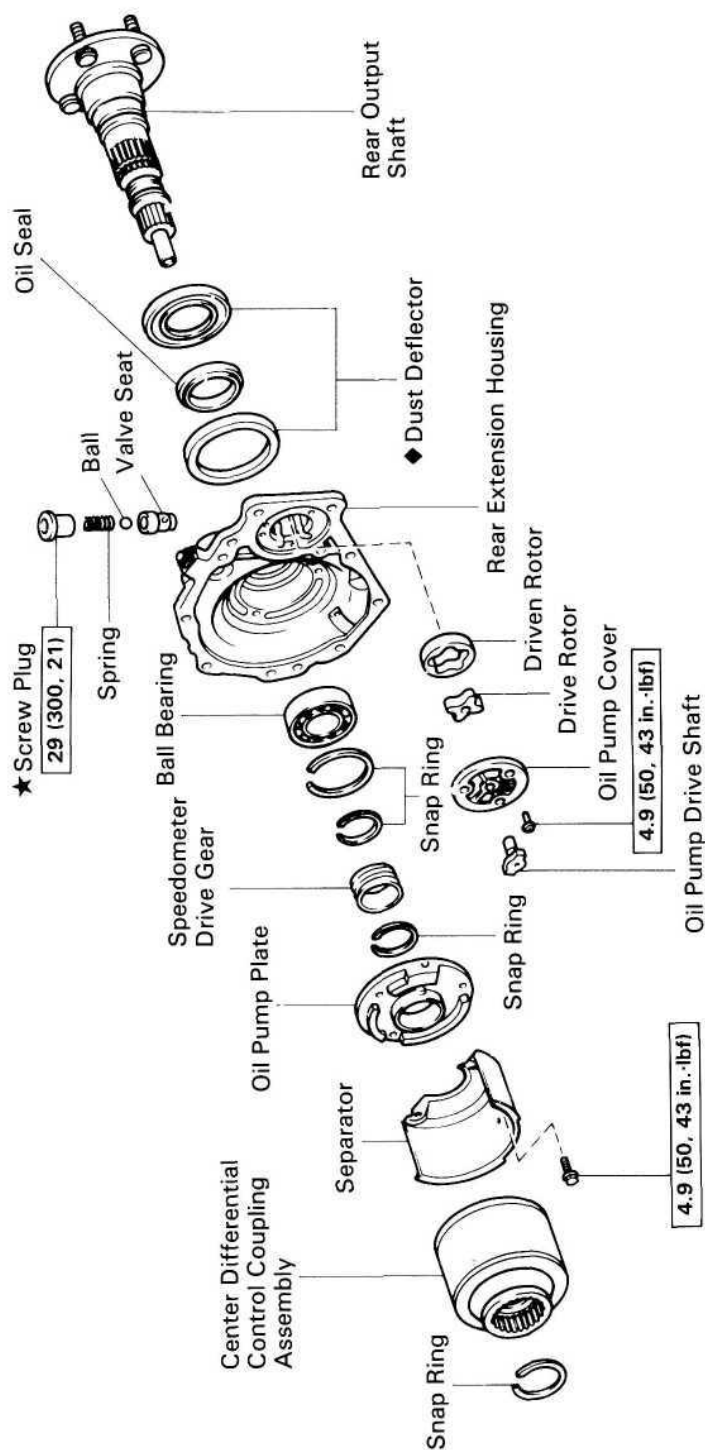
SST 09316-20011, 09316-60010 (09316-00010,
09316-00040, 09316-00070)



- (b) Using snap ring pliers, install the new snap ring.

Rear Extension Housing Assembly

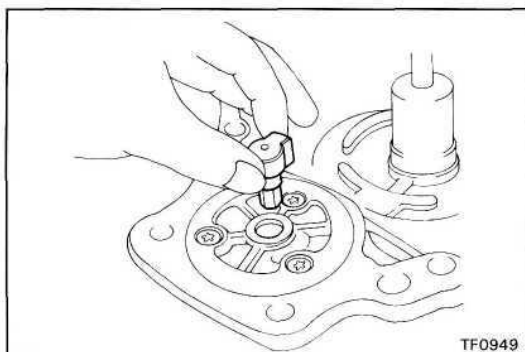
COMPONENTS



N·m (kgf·cm, ft·lbf) : Specified torque

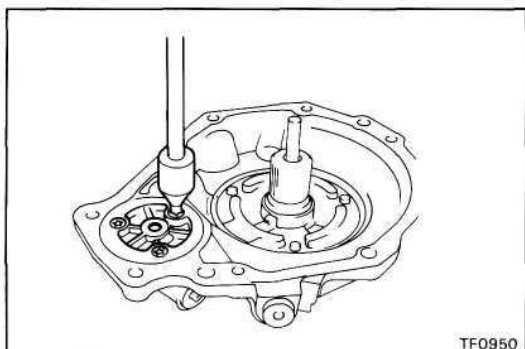
◆ Non-reusable part

★ Precoated part



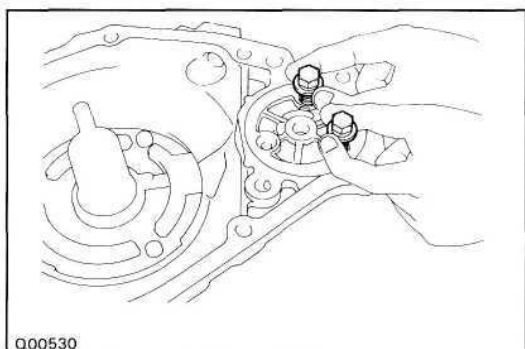
DISASSEMBLY OF REAR EXTENSION HOUSING ASSEMBLY

1. REMOVE OIL PUMP DRIVE SHAFT

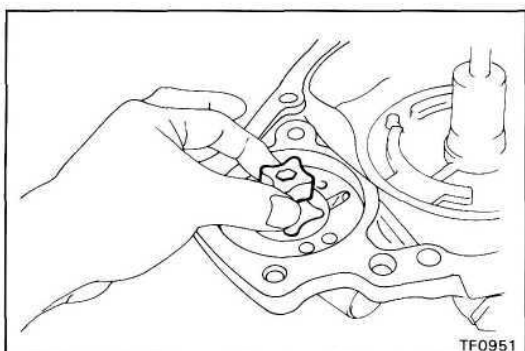


2. REMOVE OIL PUMP COVER

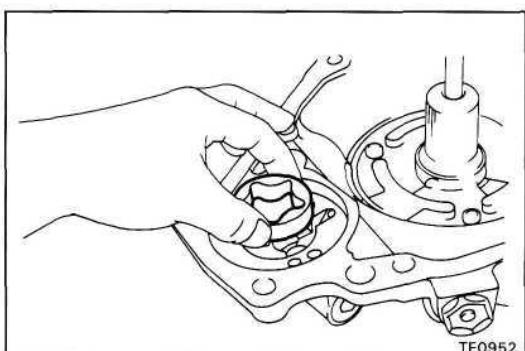
- (a) Using a torx socket wrench, remove the three screws.
(Torx socket wrench T30 09042-00010)



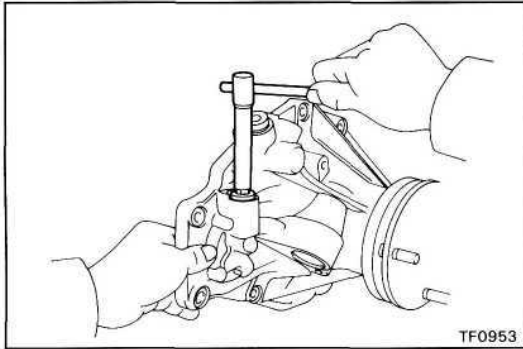
- (b) Install two suitable bolts to the pump cover.
(c) Remove the pump cover from rear extension housing.



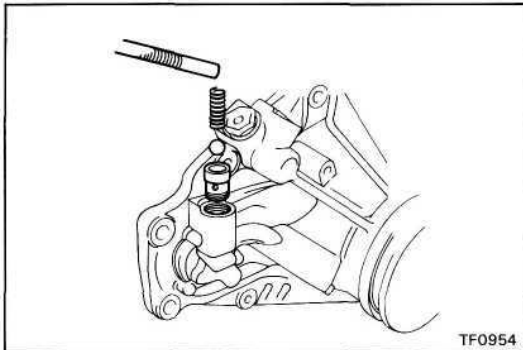
3. REMOVE DRIVE ROTOR



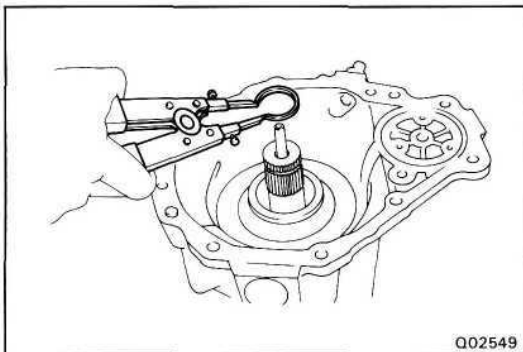
4. REMOVE DRIVEN ROTOR

**5. REMOVE SCREW PLUG, SPRING, BALL AND VALVE SEAT**

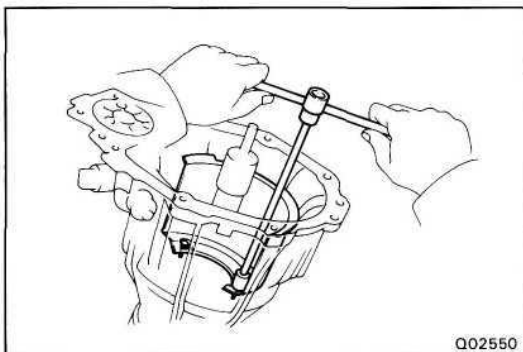
- (a) Using a hexagon wrench, remove the screw plug.



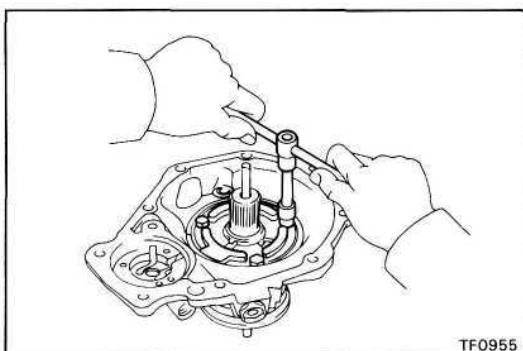
- (b) Using a magnetic finger, remove the spring, ball and valve seat.

**6. REMOVE CENTER DIFFERENTIAL CONTROL COUPLING ASSEMBLY**

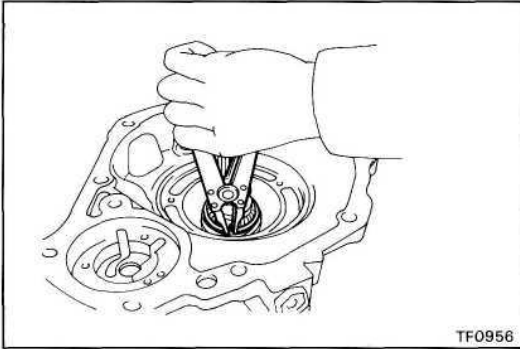
- (a) Using snap ring pliers, remove the snap ring.
(b) Remove the coupling assembly.

**7. REMOVE SEPARATOR**

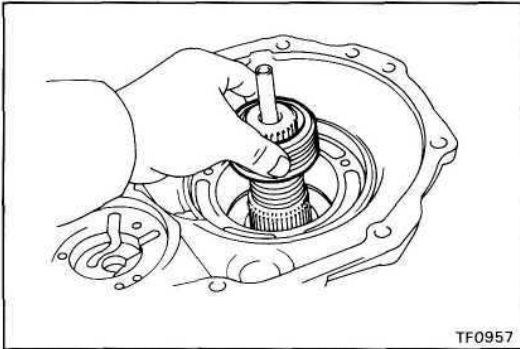
Remove the two bolts and the separator.

**8. REMOVE OIL PUMP PLATE**

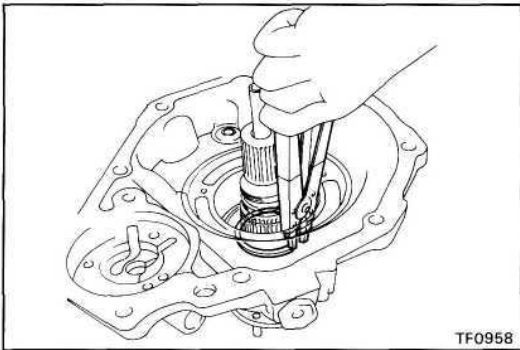
Remove the bolt and the oil pump plate.

**9. REMOVE SPEED METER DRIVE GEAR**

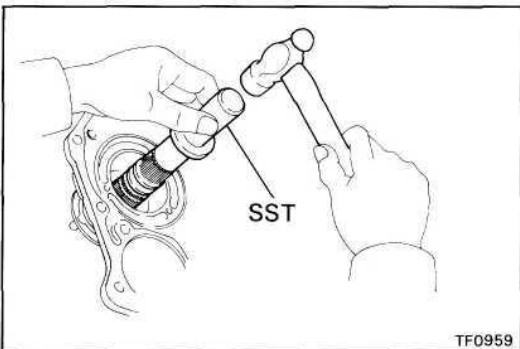
- (a) Using snap ring pliers, remove the snap ring.



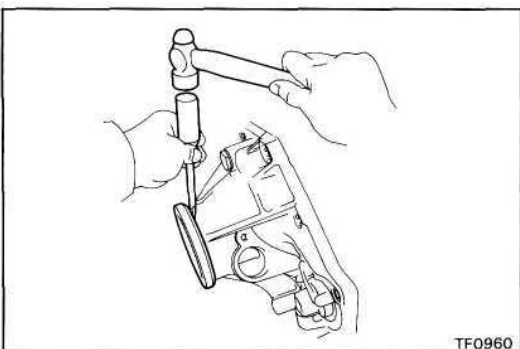
- (b) Remove the speedometer drive gear.

**10. REMOVE REAR OUTPUT SHAFT**

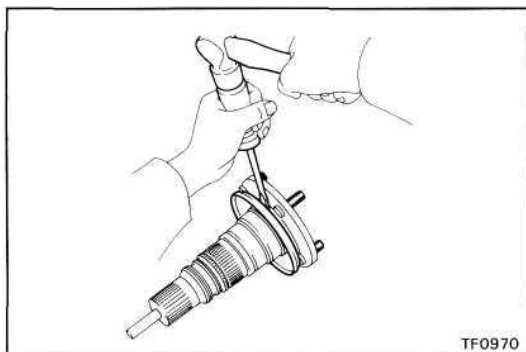
- (a) Using snap ring pliers, remove the snap ring.



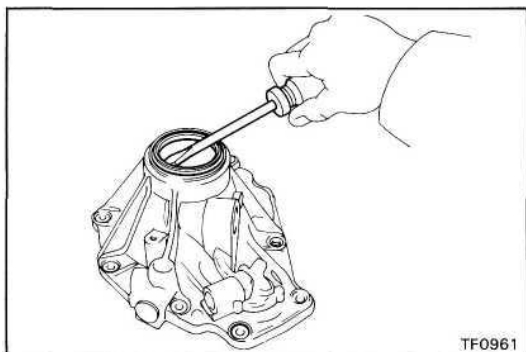
- (b) Using SST and a hammer, remove the rear output shaft.
SST 09325-12010

**11. REMOVE DUST DEFLECTORS**

- (a) Using a screwdriver and hammer, remove the rear extension housing dust deflector.

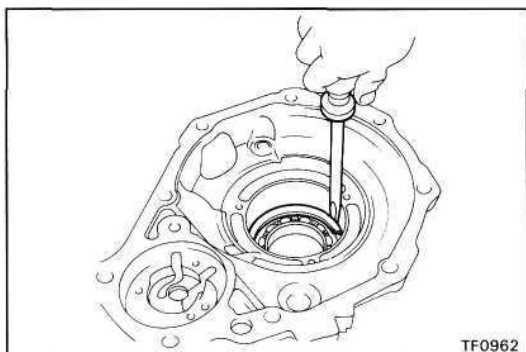


- (b) Using a screwdriver and hammer, remove the rear output shaft dust deflector.



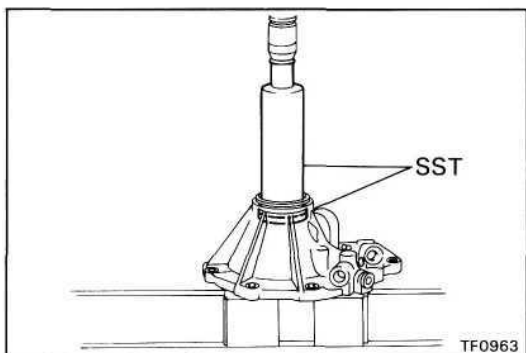
12. REMOVE OIL SEAL

Using a screwdriver, pry out the oil seal.

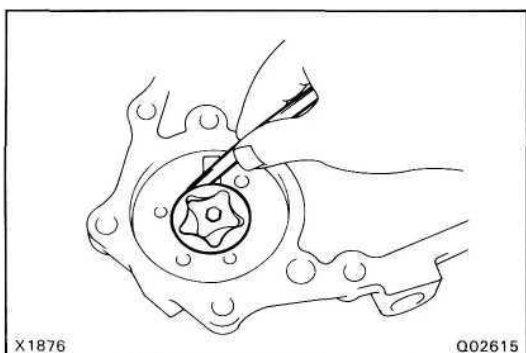


13. REMOVE BALL BEARING

- (a) Using a screwdriver, remove the snap ring.



- (b) Using SST and a press, remove the ball bearing.
SST 09316-60010 (09316-00010, 09316-00020)



INSPECTION OF OIL PUMP

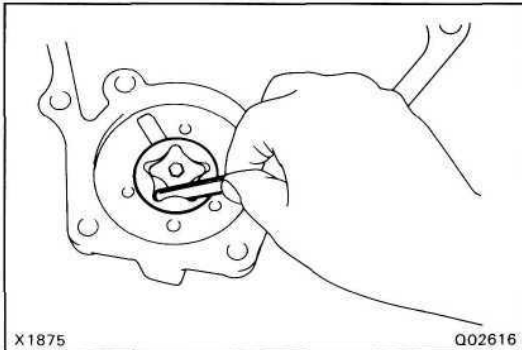
1. CHECK BODY CLEARANCE OF DRIVEN ROTOR

Install the drive rotor to the driven rotor.
Using a feeler gauge, measure body clearance between drive rotor and extension housing.

Standard body clearance: 0.08 — 0.17 mm
(0.0031 - 0.0067 in.)

Maximum body clearance: 0.17 mm (0.0067 in.)

If the body clearance is greater than the maximum, replace the drive rotor or driven rotor.



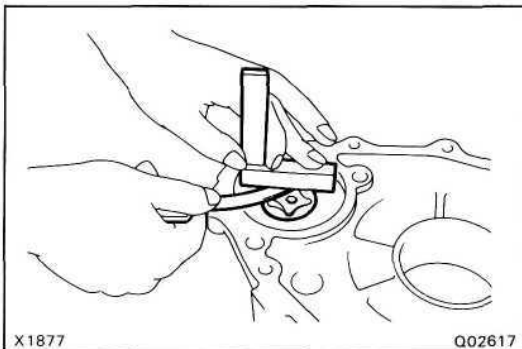
2. CHECK TIP CLEARANCE OF DRIVEN ROTOR

Using a feeler gauge, measure tip clearance between drive rotor and driven rotor.

Standard tip clearance: 0.05 — 0.15 mm
(0.0020 - 0.0059 in.)

Maximum tip clearance: 0.15 mm (0.0059 in.)

If the tip clearance is greater than the maximum, replace the drive rotor or driven rotor.



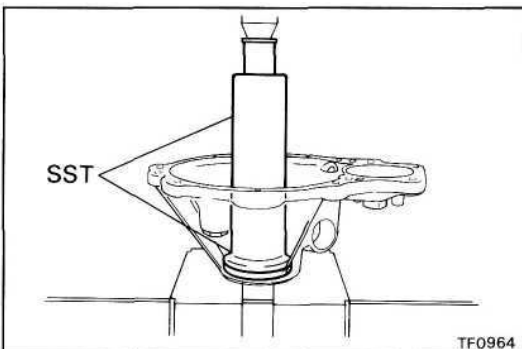
3. CHECK SIDE CLEARANCE OF OIL PUMP

Using a steel straight edge and a feeler gauge, measure the side clearance of oil pump.

Standard side clearance: 0.03 — 0.10 mm
(0.0012 - 0.0039 in.)

Maximum side clearance: 0.10 mm (0.0039 in.)

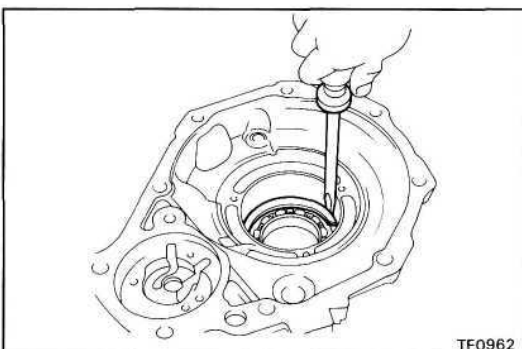
If the side clearance greater than the maximum, replace the drive rotor or driven rotor.



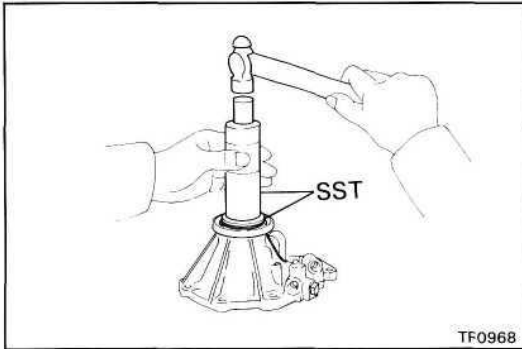
ASSEMBLY OF REAR EXTENSION HOUSING ASSEMBLY

1. INSTALL BALL BEARING

- (a) Using SST and a press, install the ball bearing.
SST 09316-60010 (09316-00010, 09316-00030)



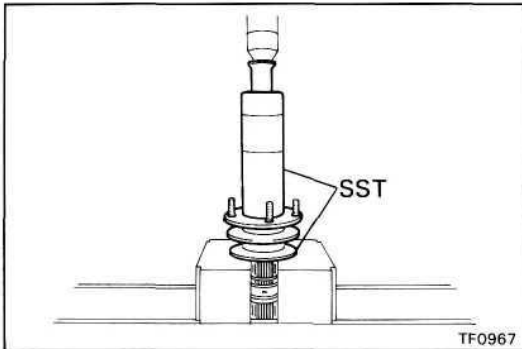
- (b) Using a screwdriver, install the snap ring.



2. INSTALL DUST DEFLECTORS

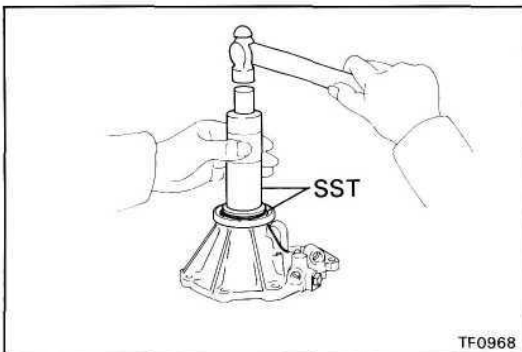
- (a) Using SST and a hammer, install a new rear extension housing dust deflector.

SST 09316-60010 (09316-00010, 09316-00040)



- (b) Using SST and a press, install a new rear extension housing dust deflector.

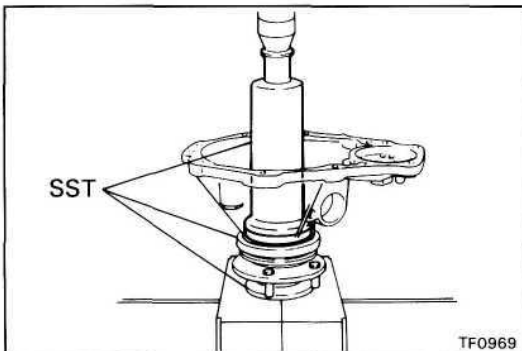
SST 09316-20011, 09316-60010,
(09316-00010)



3. INSTALL OIL SEAL

Using SST and a hammer, drive in a new oil seal.

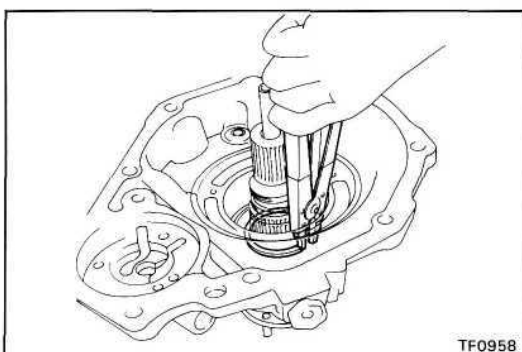
SST 09316-60010 (09316-00010, 09316-00030)



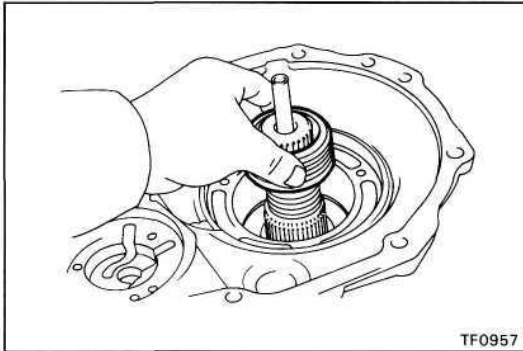
4. INSTALL REAR OUTPUT SHAFT

- (a) Using SST and a press, install the rear output shaft.

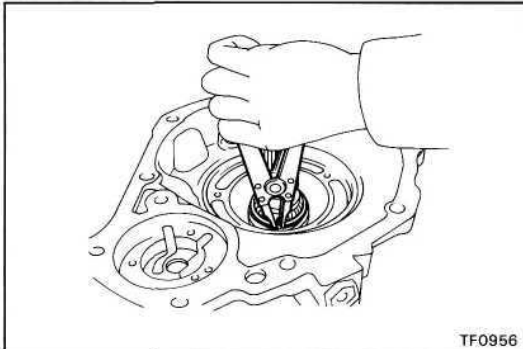
SST 09316-60010 (09316-00010, 09316-00030)
09316-20011



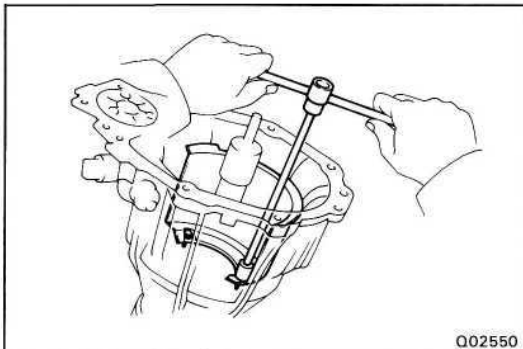
- (b) Using snap ring pliers, install the snap ring.

**5. INSTALL SPEEDOMETER DRIVE GEAR**

- (a) Install the speedometer drive gear.

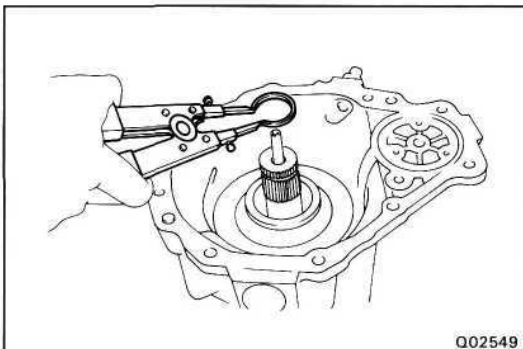


- (b) Using snap ring pliers, install the snap ring.

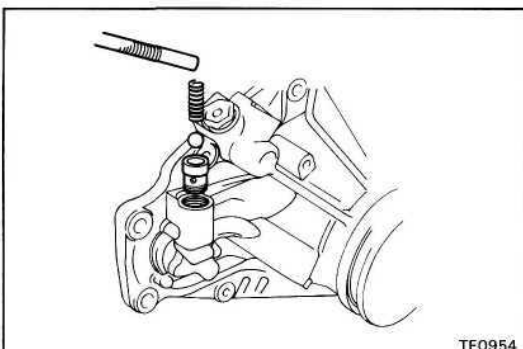
**6. INSTALL OIL PUMP PLATE SEPARATOR**

- (a) Install the oil pump plate.
(b) Install the separator.
(c) Install and torque the three bolts.

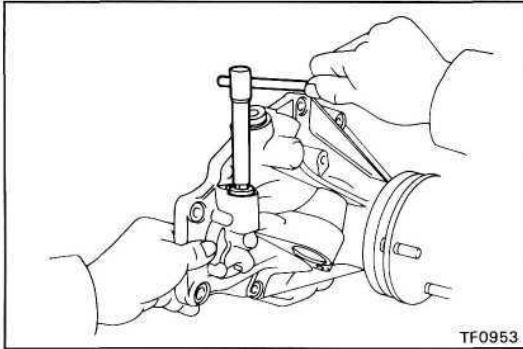
Torque: 4.9 Nm (50 kgfcm, 43 in.lbf)

**7. INSTALL CENTER DIFFERENTIAL CONTROL COUPLING ASSEMBLY**

- (a) Install the coupling assembly.
(b) Using snap ring pliers, install the snap ring.

**8. INSTALL VALVE SEAT, BALL, SPRING AND SCREW PLUG**

- (a) Apply gear oil to the ball.
(b) Install the valve seat, ball and spring.

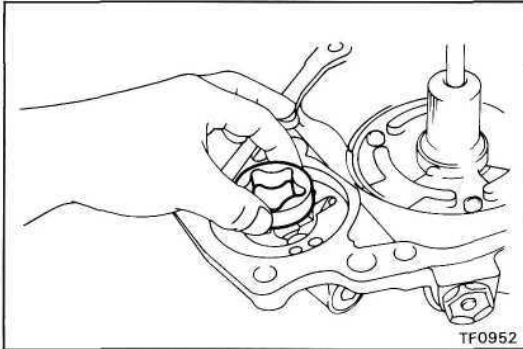


- (c) Apply liquid sealer to the screw plug.

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

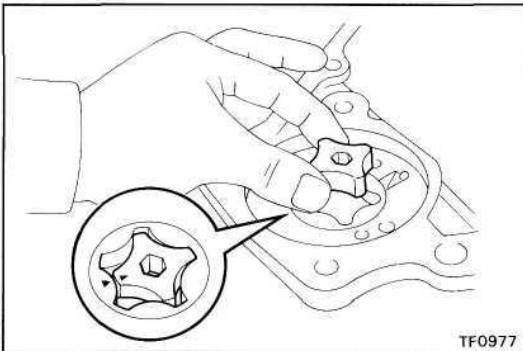
- (d) Using a hexagon wrench, install and torque the screw plug.

Torque: 29 N·m (300 kgfcm, 21 ft-lbf)



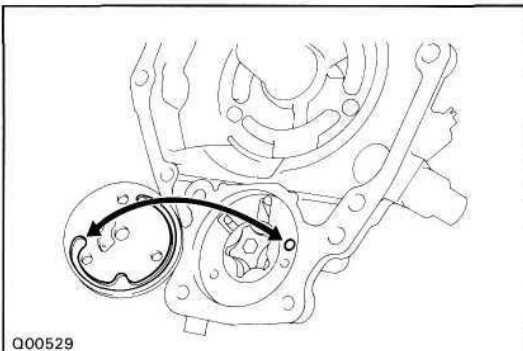
9. INSTALL DRIVEN ROTOR

- (a) Apply gear oil to the driven rotor.
(b) Install the driven rotor.



10. INSTALL DRIVE ROTOR

- (a) Apply gear oil to the drive rotor.
(b) Install the drive rotor.
HINT: Align the alignment marks.



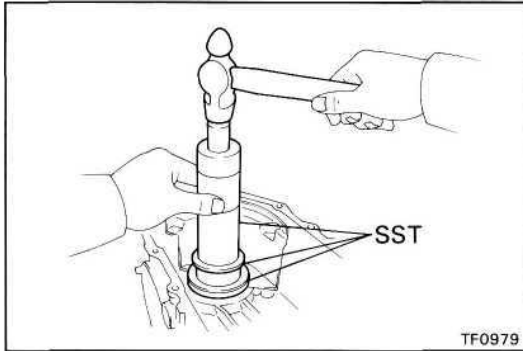
11. INSTALL OIL PUMP COVER

- (a) Install the oil pump cover.
(b) Using a torx socket wrench, install and torque the three screws.

(Torx socket wrench T30 09042-00010)

Torque: 4.9 N·m (50 kgfcm, 43 in.lbf)

NOTICE: Align the oil hole of the rear extension housing and oil groove end of the oil pump cover.

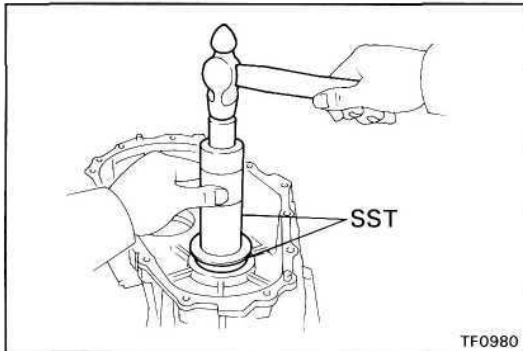


TRANSFER ASSEMBLY

1. INSTALL TWO BEARING RACES TO FRONT CASE

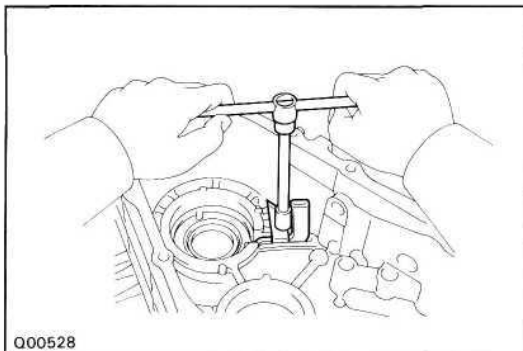
- (a) Using SST and a hammer, install the center differential bearing race.

SST 09316-60010 (09316-00010, 09316-00030)
09316-20011



- (b) Using SST and a hammer, install the idle gear bearing race.

SST 09316-60010 (09316-00010, 09316-00040)

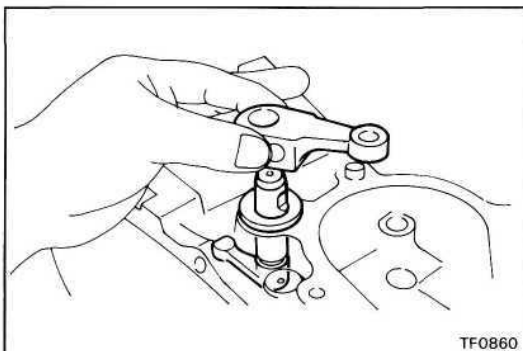


2. INSTALL OIL RECEIVER TO FRONT CASE

- (a) Install the oil receiver.

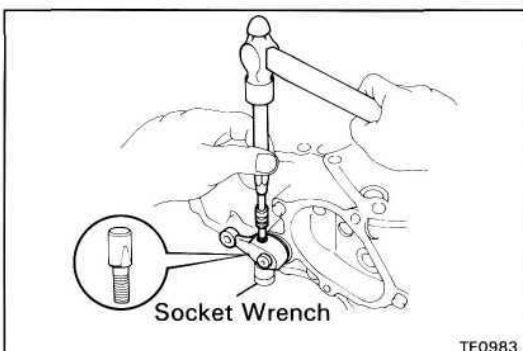
- (b) Install and torque the bolt.

Torque: 11.7 Nm (120 kgf·cm, 8.6 ft-lbf)

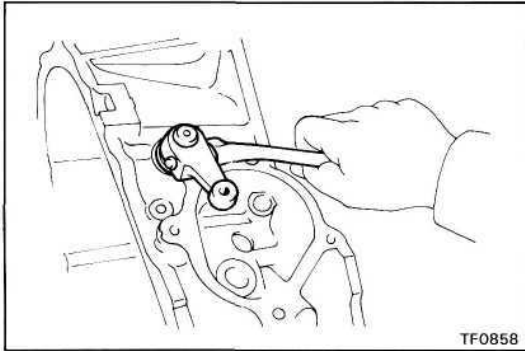


3. INSTALL SHIFT OUTER LEVER AND INNER LEVER

- (a) Install the shift outer lever and inner lever.

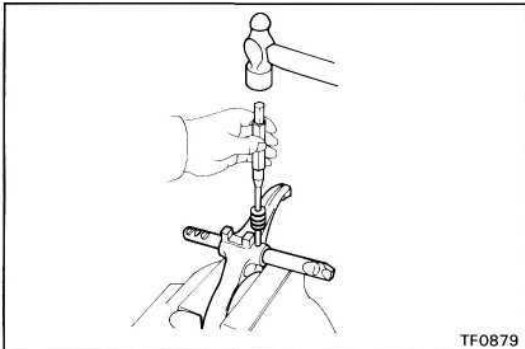


- (b) Using a pin punch, hammer and socket wrench, install the lever lock pin.



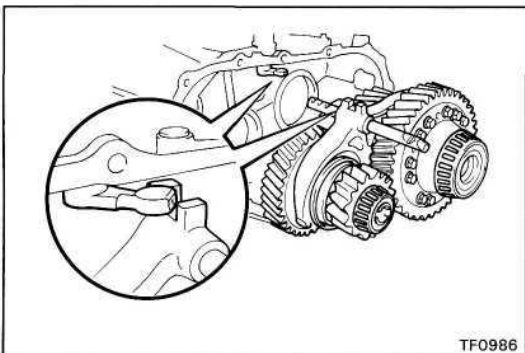
- (c) Install the washer and nut.

Torque: 12 Nm (120 kgf-cm, 9 ft-lbf)

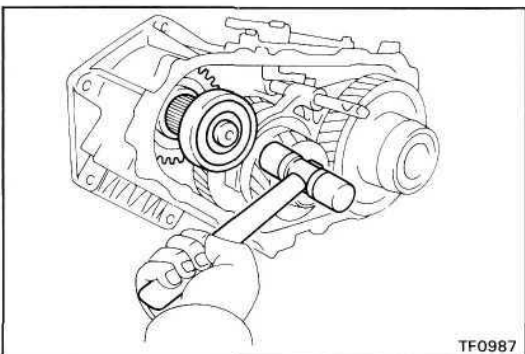


4. ASSEMBLE SHIFT FORK NO.1 AND FORK SHAFT

Using a pin punch and a hammer, drive in the slotted spring pin.

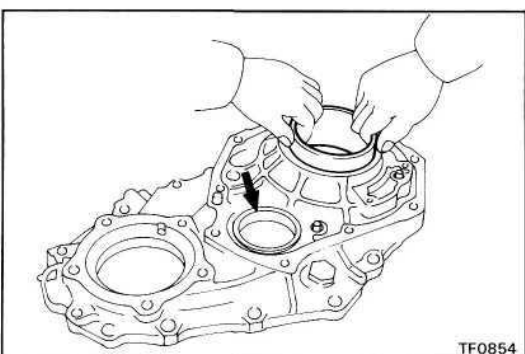


5. INSTALL IDLE GEAR ASSEMBLY, CENTER DIFFERENTIAL ASSEMBLY AND HIGH AND LOW SHIFT FORK ASSEMBLY TO FRONT CASE

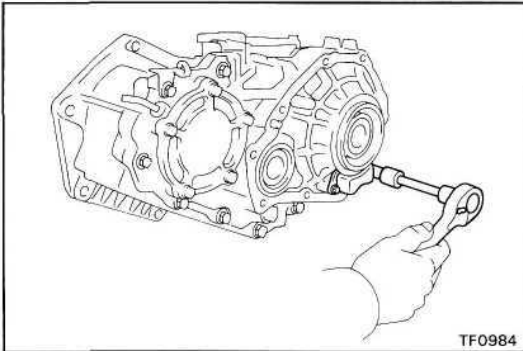


6. INSTALL INPUT SHAFT ASSEMBLY

Using a plastic hammer, tap in the input shaft.

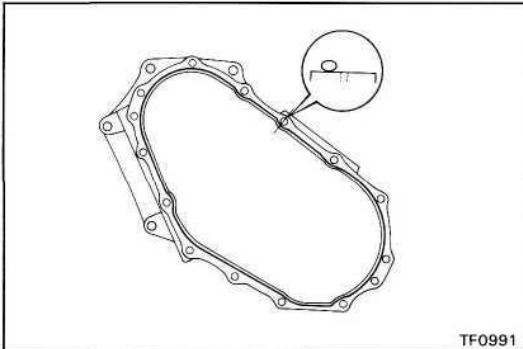


7. INSTALL TWO BEARING RACES TO REAR CASE

**8. INSTALL OIL STRAINER TO REAR CASE**

- (a) Install the oil strainer.
- (b) Install and torque the bolts.

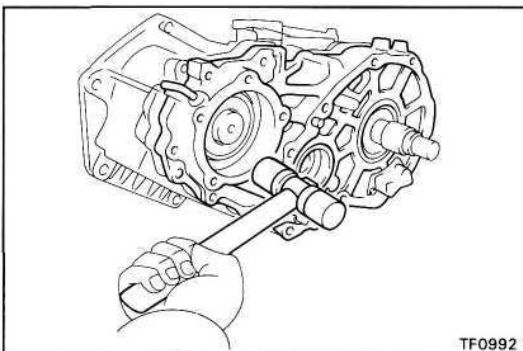
Torque: 4.9 Nm (50 kgfcm, 43 in.-lbf)

**9. ASSEMBLE FRONT CASE AND REAR CASE**

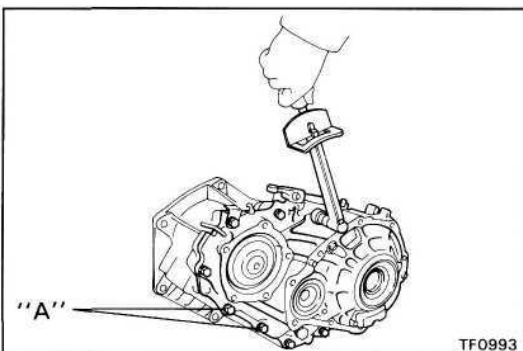
- (a) Remove any packing material and be careful not to drop oil on the contacting surfaces of the front case.
- (b) Apply seal packing to the front case as shown.

Seal packing: Part No. 08826-00090, THREE BOND 1281 or equivalent

HINT: Install the rear case as soon as the seal packing is applied.



- (c) Using a plastic hammer, tap the rear case and assemble it.

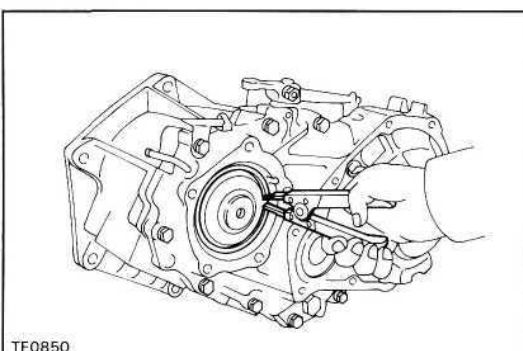


- (d) Apply liquid sealer to the "A" bolt threads.

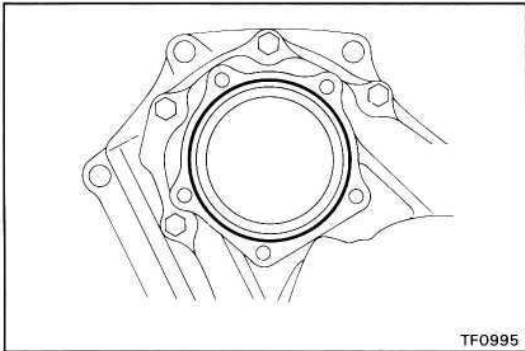
Sealant: Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

- (e) Install and torque the eight bolts.

Torque: 37 Nm (380 kgfcm, 27 ft-lbf)



- (f) Using snap ring pliers, install the snap ring.

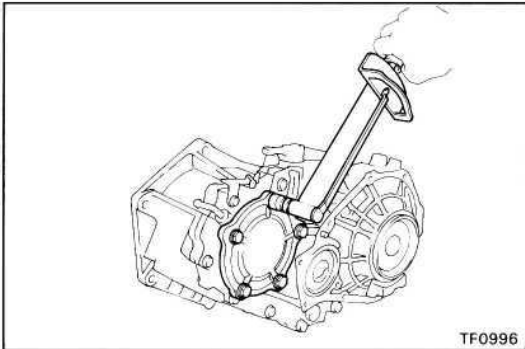


10. INSTALL CASE COVER

- (a) Remove any packing material and be careful not to drop oil on the contacting surfaces of the rear case.
- (b) Apply seal packing to the rear case as shown.

Seal packing: Part No. 08826-00090, THREE BOND 1281 or equivalent

HINT: Install the case cover as soon as the seal packing is applied.

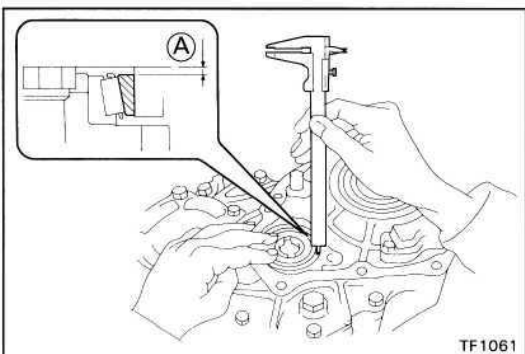


- (c) Install the case cover.
- (d) Apply liquid sealer to the bolt threads.

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

- (e) Install and torque the five bolts.

Torque: 37 Nm (380 kgfcm, 27 ftlbf)



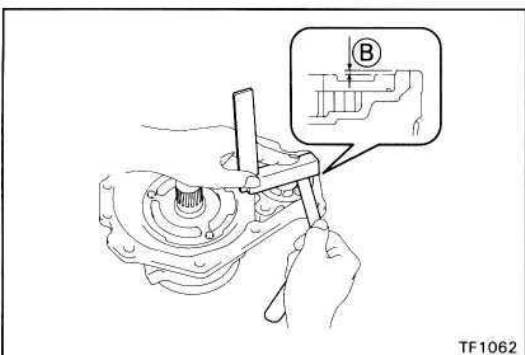
11. SELECT ADJUSTING SHIMS FOR IDLER GEAR REAR TAPER ROLLER BEARING

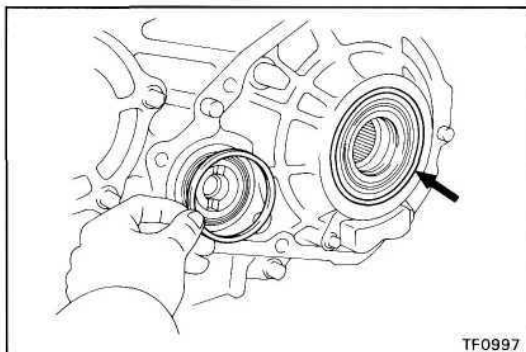
- (a) Using a vernier calipers, measure dimension **(A)**.

HINT: Lightly hold down the bearing outer race in the thrust direction to eliminate any looseness before making the measurement.

- (b) Using a steel straight edge and feeler gauge, measure the clearance of dimension **(B)**.
- (c) Calculate the required thickness of the adjusting shim.
Thickness: Dimension **(A)** + Dimension **(B)** + (0.03 — 0.08 mm)
- (d) From the following table, select a shim with a thickness fitting within the range of the calculation in (c).

Mark	Thickness mm (in.)	Mark	Thickness mm (in.)
2	0.30 (0.0118)	8	3.20 (0.1260)
3	0.45 (0.0177)	9	3.40 (0.1339)
4	2.40 (0.0945)	10	3.60 (0.1417)
5	2.60 (0.1024)	11	3.80 (0.1496)
6	2.80 (0.1102)	12	4.00 (0.1575)
7	3.00 (0.1181)	13	0.55 (0.0216)

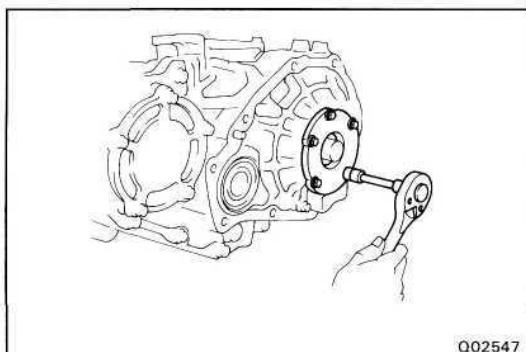




12. INSTALL ADJUSTING SHIMS TO IDLER GEAR AND OUTPUT SHAFT TAPER ROLLER BEARINGS

- (a) Apply MP grease to the adjusting shims.
- (b) Install the adjusting shims to bearing outer races.

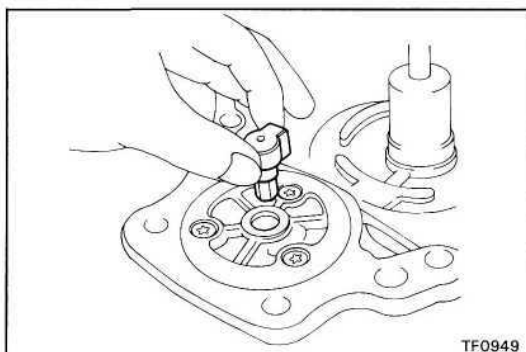
HINT: Install the thinner shim on the bearing outer race side.



13. INSTALL RETAINER

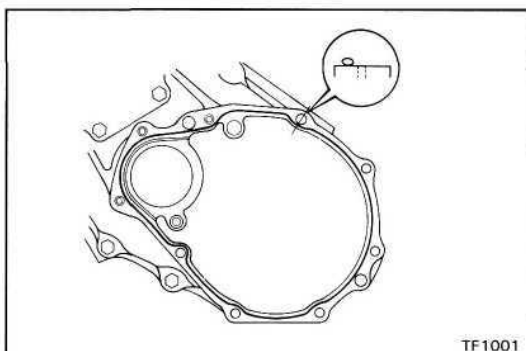
Install the retainer with the five bolts.

Torque: 39.2 Nm (400 kgf-cm, 28 ft-lbf)



14. INSTALL REAR EXTENSION HOUSING

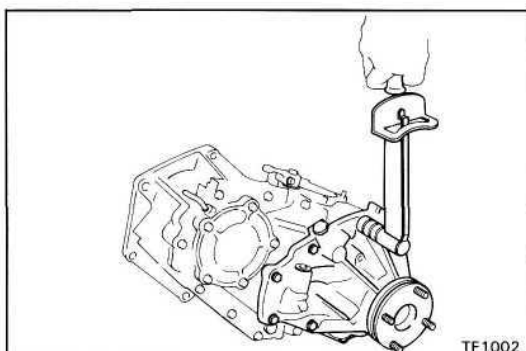
- (a) Install the oil pump drive shaft.



- (b) Remove any packing material and be careful not drop oil on the contacting surfaces of the rear case.
- (c) Apply seal packing to the rear case as shown.

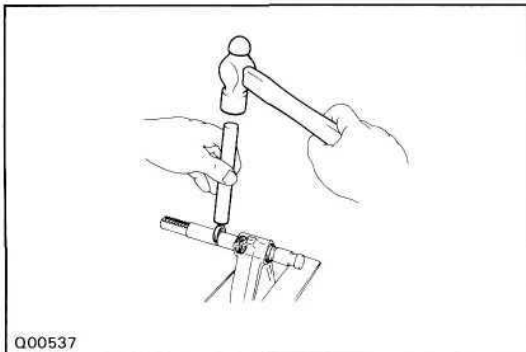
Seal packing: Part No. 08826-00090, THREE BOND 1281 or equivalent

HINT: Install the rear extension housing as soon as the seal packing is applied.



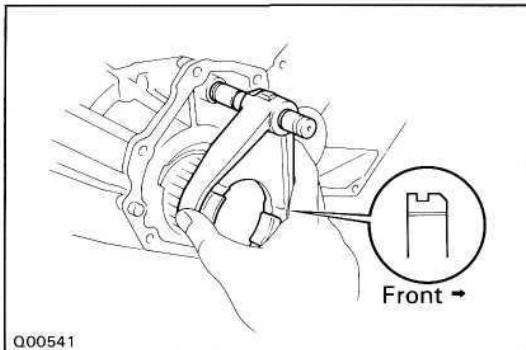
- (d) Install the rear extension housing.
- (e) Install and torque the nine bolts.

Torque: 37 Nm (380 kgf-cm, 27 ft-lbf)

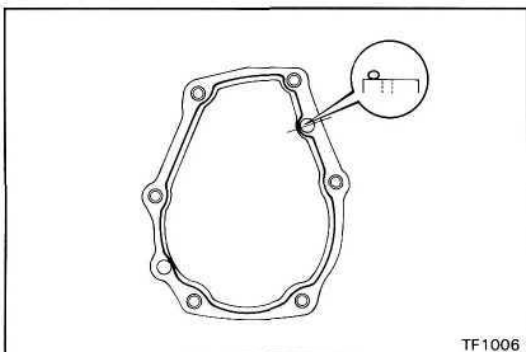


15. ASSEMBLE SHIFT FORK NO.2 AND FORK SHAFT

- (a) Assemble the shift fork No.2 and fork shaft.
- (b) Using a brass bar and hammer, tap in the snap rings.



16. INSTALL CLUTCH SLEEVE, SHIFT FORK NO.2 AND FORK SHAFT

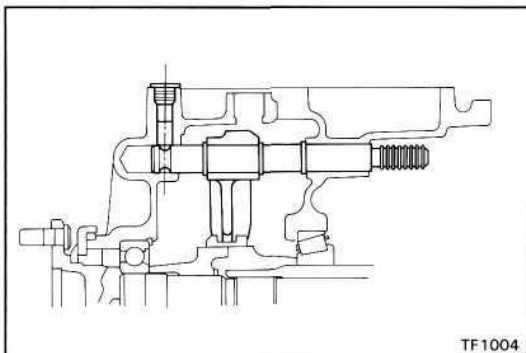


17. INSTALL FRONT EXTENSION HOUSING

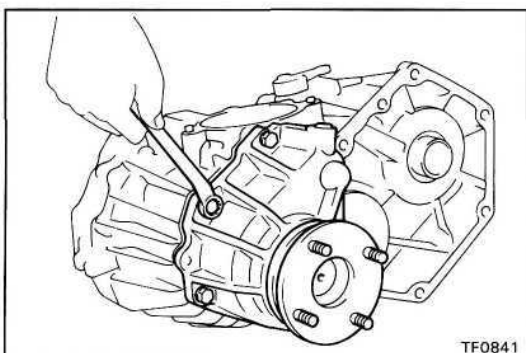
- (a) Remove any packing material and be careful not to drop oil on the contacting surfaces of the front case.
- (b) Apply seal packing to the front case as shown.

Seal packing: Part No. 08826-00090, THREE BOND 1281 or equivalent

HINT: Install the front extension housing as soon as the seal packing is applied.

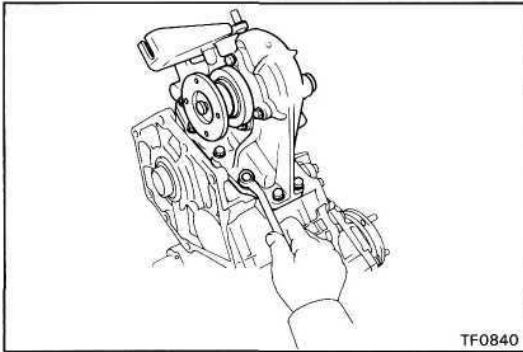


- (c) Set the clutch sleeve in 4WD condition in differential lock condition, install the front extension housing.



- (d) Install and torque the six bolts.

Torque: 37 Nm (380 kgfcm, 27 ft-lbf)

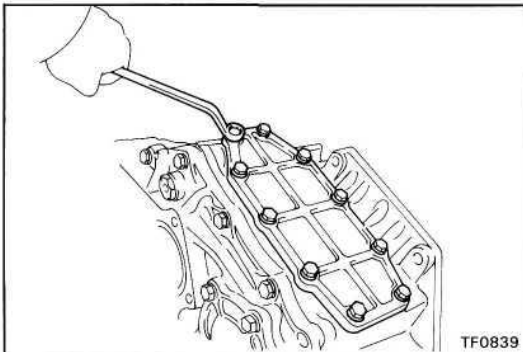
**18. (w / POWER TAKE-OFF)****INSTALL POWER TAKE-OFF CASE**

- (a) Install the power take-off case and a new gasket.
- (b) Apply liquid sealer to the bolt threads.

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

- (c) Install and torque the ten bolts.

Torque: 19 Nm (195 kgf-cm, 14 ft-lbf)

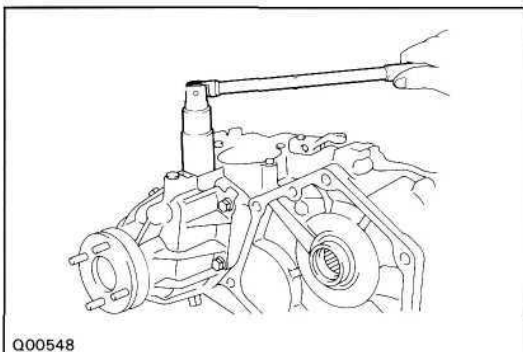
**19. (w/o POWER TAKE-OFF)****INSTALL POWER TAKE-OFF COVER**

- (a) Install the power take-off cover and a new gasket.
- (b) Apply liquid sealer to the bolt threads.

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

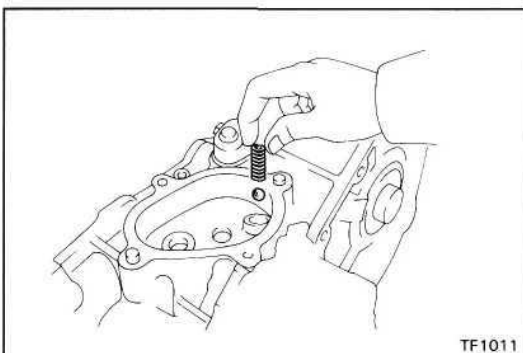
- (c) Install and torque the ten bolts.

Torque: 19 Nm (195 kgf-cm, 14 ft-lbf)

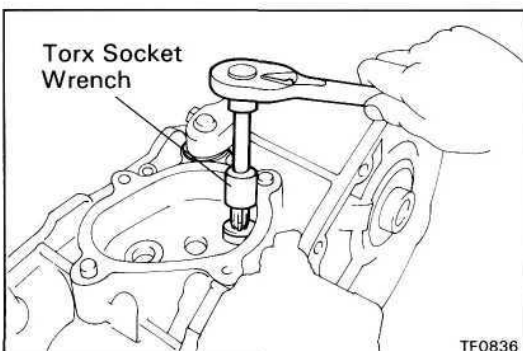
**20. INSTALL TRANSFER INDICATOR SWITCHES**

Install and torque the Center Diff Lock indicator switch, L4 position switch and neutral position switch.

Torque: 37 Nm (380 kgf-cm, 27 ft-lbf)

**21. INSTALL BALL, SPRING AND SCREW PLUG**

- (a) Install the ball and spring.



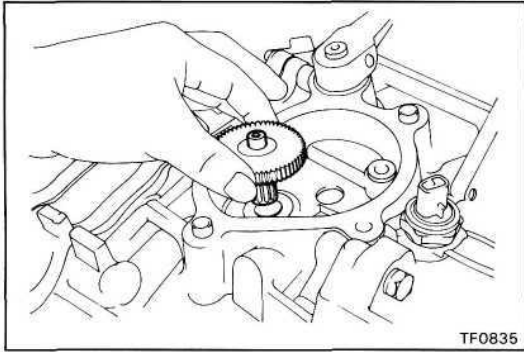
- (b) Apply liquid sealer to the screw plug.

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

- (c) Install and torque the screw plug.

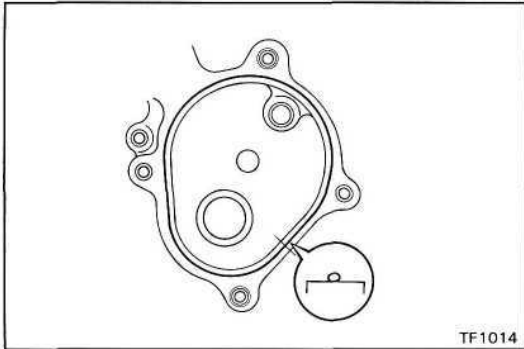
(Torx socket wrench T40 09042-00020)

Torque: 19 Nm (190 kgf-cm, 14 ft-lbf)

**22. INSTALL OUTPUT GEAR**

- (a) Apply gear oil to the output gear.
- (b) Install the output gear.

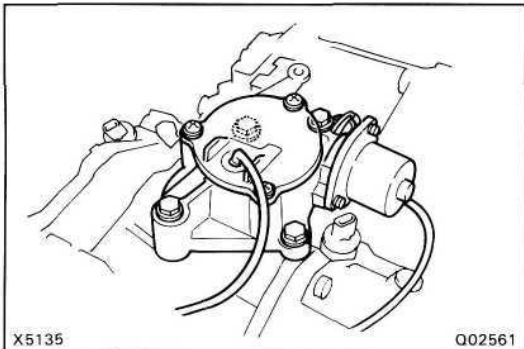
NOTICE: Do not turn the output gear.

**23. INSTALL MOTOR ACTUATOR**

- (a) Remove any packing material and be careful not to drop oil on the contacting surfaces of the front case.
- (b) Apply seal packing to the front case as shown.

Seal packing: Part No. 08826-00090, THREE BOND 1281 or equivalent

HINT: Install the motor actuator as soon as the seal packing is applied.

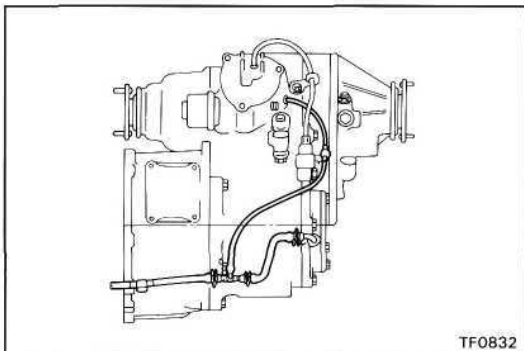


- (c) Install the motor actuator.

HINT: Set the motor actuator in differential lock condition.

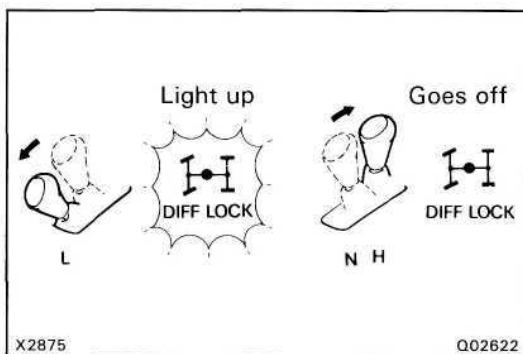
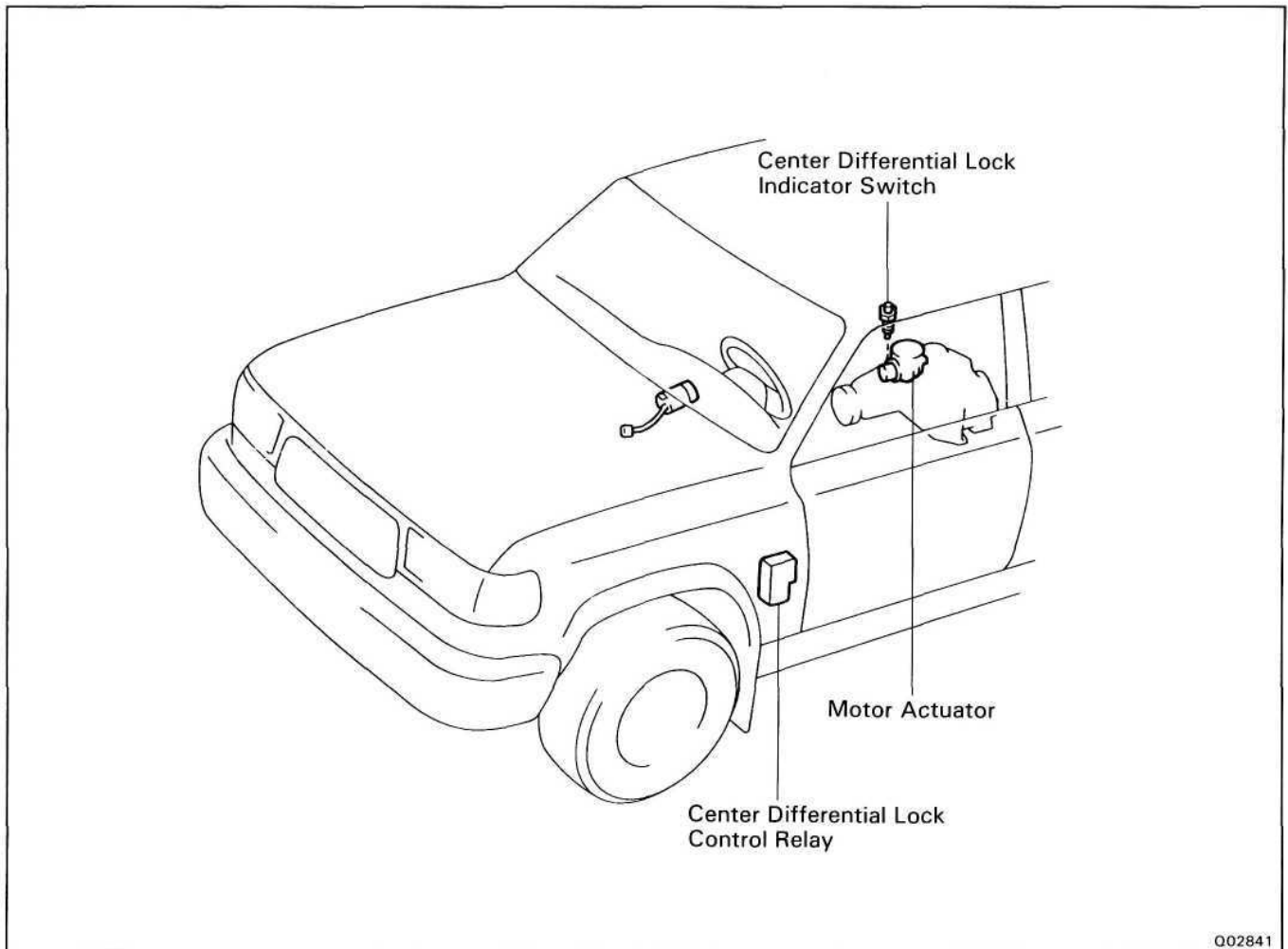
- (d) Install and torque the four bolts.

Torque: 18.1 N-m (185 kgfcm, 13.3 ft-lbf)

**24. INSTALL BREATHER HOSE**

MOTOR SHIFT CONTROL SYSTEM

PARTS LOCATION

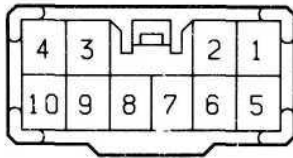


SYSTEM INSPECTION

INSPECT SHIFT LEVER POSITION

- Start the engine, and center differential lock switch turned to OFF.
- Check that the center differential indicator light comes on when the transfer shift lever shifted to L position. Check that the light goes off when the lever is shifted to N or H position.

Wire Harness Side



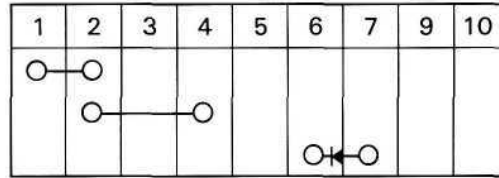
S-10-2

Q02618

PARTS INSPECTION

1. INSPECT CENTER DIFFERENTIAL LOCK CONTROL RELAY

- (a) Check that there is continuity between terminals as shown in the chart.



HINT: There is a diode between terminals 6 and 7. If the circuit shown no continuity, change the positive (+) and negative (—) probes and recheck the circuit.

- (b) Apply battery voltage between terminals and check that there is continuity between terminals as shown in the chart.

Terminal		1	2	3	4	5	6	7	8	9	10
Battery voltage											
+	—										
6	5	○—○	○—○								
7	2									○×○	
9	10		○—○	○—○							

○—○ : Continuity
○×○ : No continuity

If continuity is not as specified, replace the relay.

Motor Actuator Side



IS-6-2

Q02619

2. INSPECT MOTOR ACTUATOR

- (a) Using an ohmmeter, measure the resistance between terminals 2 and 3.

Standard resistance: 0.3 — 100 Ω

- (b) Using an ohmmeter, measure the resistance between terminals 2 or 3 and body ground.

Standard resistance: More than 0.5 Ω

If resistance value is not as specified, replace the motor actuator.

SERVICE SPECIFICATIONS

SERVICE DATA

Input gear snap ring	Mark		
	A	2.00 mm	0.0787 in.
	B	2.10 mm	0.0827 in.
	C	2.20 mm	0.0866 in.
	D	2.30 mm	0.0906 in.
	E	2.40 mm	0.0945 in.
	F	2.50 mm	0.0984 in.
	G	2.60 mm	0.1024 in.
	H	2.70 mm	0.1063 in.
	J	2.80 mm	0.1102 in.
Input shaft rear ball bearing snap ring	Mark		
	A	2.00 mm	0.0787 in.
	B	2.10 mm	0.0827 in.
	C	2.20 mm	0.0866 in.
	D	2.30 mm	0.0906 in.
	E	2.40 mm	0.0945 in.
Idle low gear thrust clearance	STD	0.125 — 0.275 mm	0.0049 — 0.0108 in.
	Limit	0.275 mm	0.0108 in.
Idle low gear oil clearance	STD	0.015 — 0.068 mm	0.0006 — 0.0027 in.
	Limit	0.068 mm	0.0027 in.
High speed gear thrust clearance	STD	0.10 — 0.25 mm	0.0039 — 0.0098 in.
	Limit	0.25 mm	0.0098 in.
High speed gear oil clearance	STD	0.015 — 0.071 mm	0.0006 — 0.0028 in.
	Limit	0.071 mm	0.0028 in.
Center differential backlash adjusting shim		1.70 mm	0.0669 in.
		1.85 mm	0.0728 in.
		2.00 mm	0.0787 in.
		2.15 mm	0.0846 in.
		2.30 mm	0.0906 in.
		2.45 mm	0.0965 in.
		2.60 mm	0.1024 in.
		2.75 mm	0.1083 in.
		2.90 mm	0.1142 in.
		3.05 mm	0.1201 in.
Center differential backlash	Limit	0.05 mm	0.0020 in.
Oil pump driven rotor body clearance	STD	0.08 — 0.17 mm	0.0031 — 0.0067 in.
	Limit	0.17 mm	0.0067 in.
Oil pump driven rotor body tip clearance	STD	0.05 — 0.15 mm	0.0020 — 0.0059 in.
	Limit	0.15 mm	0.0059 in.
Oil pump side clearance	STD	0.03 — 0.1 mm	0.0012 — 0.0039 in.
	Limit	0.10 mm	0.0039 in.
Front drive gear piece snap ring	Mark		
	A	2.00 mm	0.0787 in.
	B	2.10 mm	0.0827 in.
	C	2.20 mm	0.0866 in.
	D	2.30 mm	0.0906 in.

	E	2.40 mm	0.0945 in.
	F	2.50 mm	0.0984 in.
	G	2.60 mm	0.1024 in.
	H	2.70 mm	0.1063 in.
	J	2.80 mm	0.1102 in.
	K	1.80 mm	0.0709 in.
	L	1.90 mm	0.0748 in.
Rear output shaft adjusting shim			
Idler gear side	Mark		
	2	0.30 mm	0.0118 in.
	3	0.45 mm	0.0177 in.
	4	2.40 mm	0.0945 in.
	5	2.60 mm	0.1024 in.
	6	2.80 mm	0.1102 in.
	7	3.00 mm	0.1181 in.
	8	3.20 mm	0.1260 in.
	9	3.40 mm	0.1339 in.
	10	3.60 mm	0.1417 in.
	11	3.80 mm	0.1496 in.
	12	4.00 mm	0.1575 in.
	13	0.55 mm	0.0216 in.

TORQUE SPECIFICATIONS

Part tightened	N·m	kgf·cm	ft·lbf
Oil pump plate × Rear extension housing	4.9	50	43 in.·lbf
Screw plug × Rear extension housing	29	300	22
Oil pump cover × Rear extension housing	4.9	50	43 in.·lbf
Lever lock pin	12	120	9
Oil strainer × Rear case	4.9	50	43 in.·lbf
Case cover × Rear case	37	380	27
Rear extension housing × Rear case	37	380	27
Front extension housing × Front case	37	380	27
Center Diff Lock Indicator switch × Front extension housing	37	380	27
Screw plug × Front case	19	190	14
Motor actuator × Front case	18.1	185	13.3
Differential front case × Differential rear case	98	1,000	72
(temporarily tighten)	88	900	65
Front case × Rear case	37	380	27
Rear case × Bearing retainer	39.2	400	28

PROPELLER SHAFT

REFER TO LAND CRUISER (STATION WAGON)
REPAIR MANUAL FOR CHASSIS AND BODY
(Pub. No. RM184E)

NOTE: The following pages contain only the
points which differ from the above listed man-
ual.

(STATION WAGON)

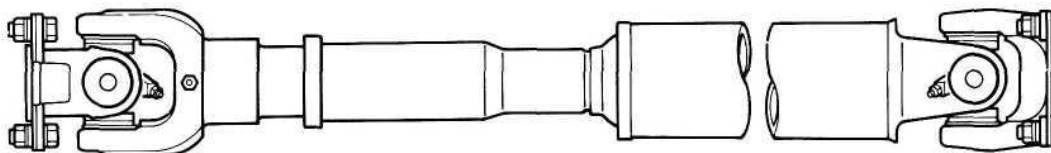
DESCRIPTION.....	PR-2
PROPELLER SHAFT.....	PR-3

DESCRIPTION

DESCRIPTION

The propeller shaft is connected to the front differential and the transfer via two joints.

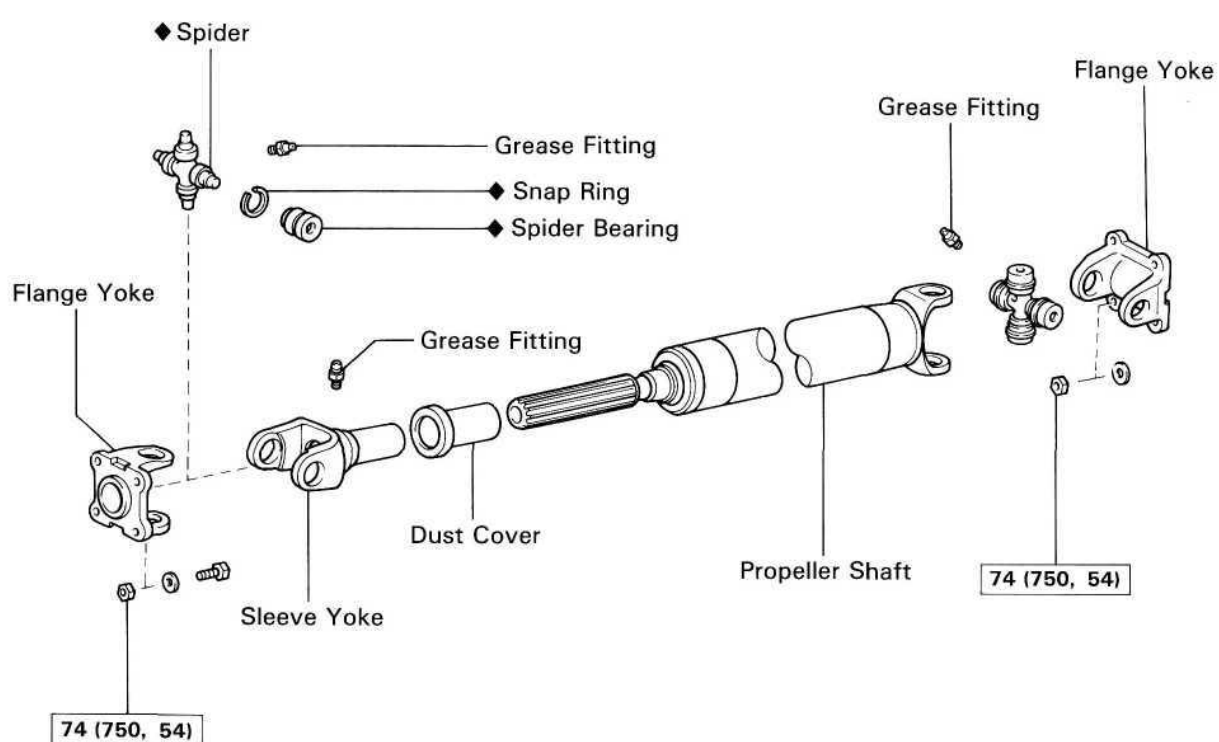
Front Propeller Shaft



R05260

PROPELLER SHAFT COMPONENTS

• Front Propeller Shaft

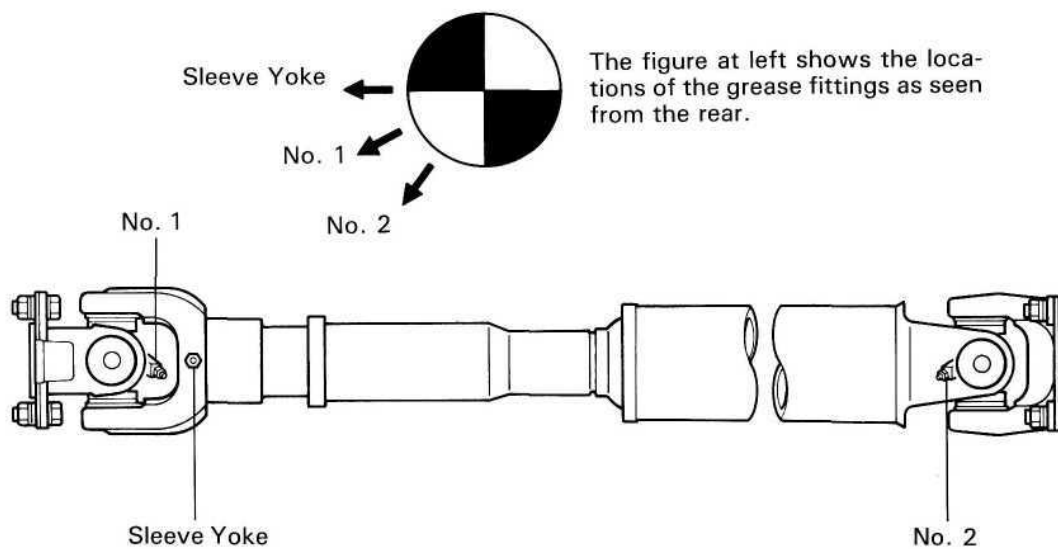


N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

PROPELLER SHAFT ASSEMBLY

HINT: When replacing the spider, be sure that the grease fitting assembly hole is facing in the direction shown in the illustration.

SPIDER GREASE FITTING ASSEMBLY DIRECTION**Front Propeller Shaft**

SUSPENSION AND AXLE

REFER TO FOLLOWING REPAIR MANUALS:

Manual Name	Pub. No.
• Land Cruiser (Hardtop and Canvas Top) Chassis and Body Repair Manual	RM183E
• Land Cruiser (Station Wagon) Chassis and Body Repair Manual	RM184E
• Land Cruiser (Hardtop, Canvas Top and Station Wagon) Chassis and Body Repair Manual Supplement	RM290E

NOTE: The following pages contain only the points which differ from the above listed manuals.

SA

(HARDTOP & CANVAS TOP)

FRONT DIFFERENTIAL.....	SA-2
ASSEMBLY REMOVAL AND INSTALLATION.....	SA-2

(STATION WAGON)

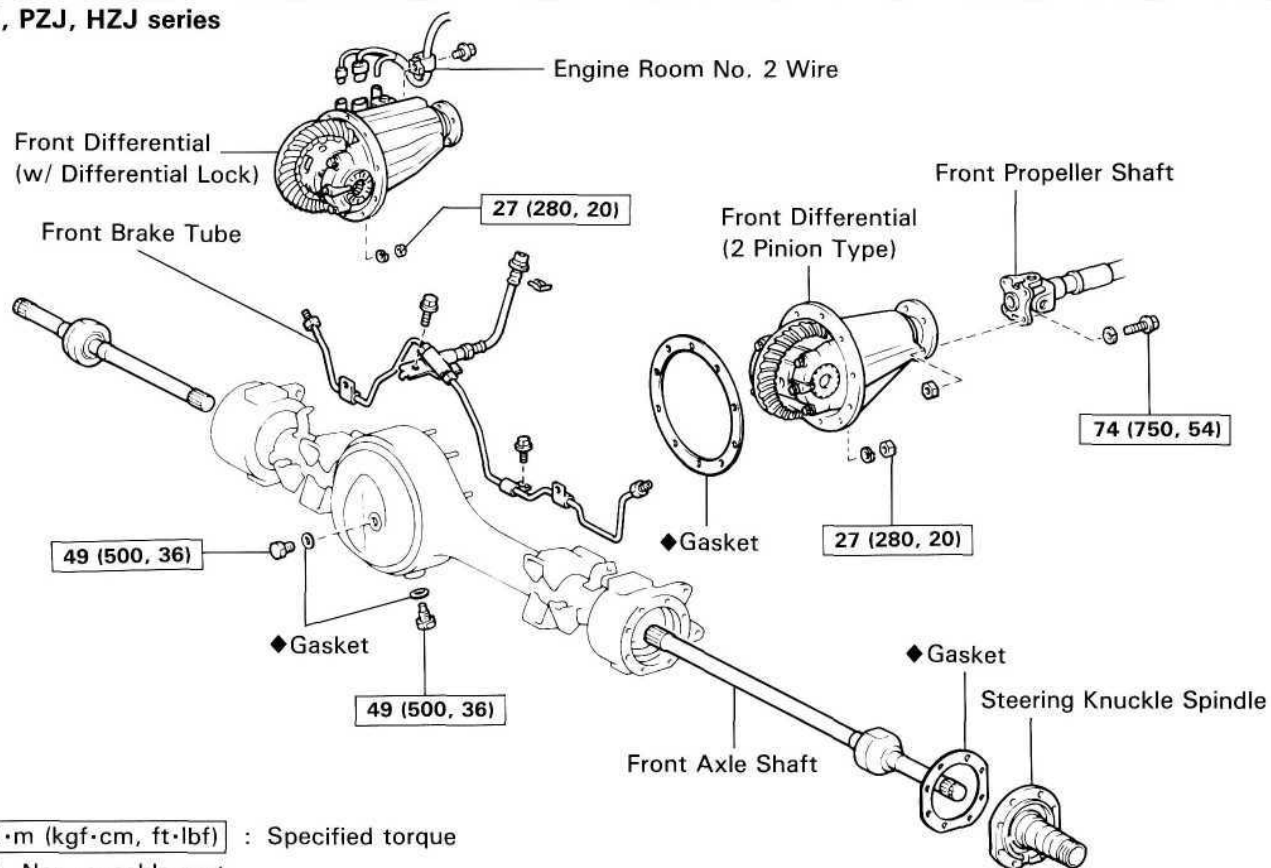
WHEEL ALIGNMENT.....	SA-3
PRIMARY INSPECTION.....	SA-3
FRONT WHEEL ALIGNMENT.....	SA-4
FRONT DIFFERENTIAL.....	SA-6
ASSEMBLY REMOVAL AND INSTALLATION.....	SA-6
SERVICE SPECIFICATIONS.....	SA-7

FRONT DIFFERENTIAL

ASSEMBLY REMOVAL AND INSTALLATION

COMPONENTS

FJ, PZJ, HZJ series



SA2874

WHEEL ALIGNMENT

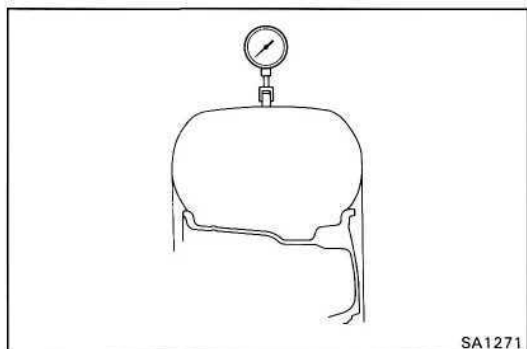
PRIMARY INSPECTION

1. MAKE FOLLOW CHECKS AND CORRECT ANY PROBLEMS

- (a) Check the tires for wear and proper inflation.

Cold tire inflation pressure:

See page SA-7

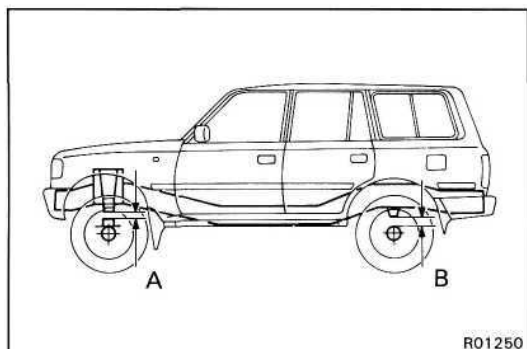


- (b) Check the tire runout.

Tire runout:

3.0 mm (0.118 in.) or less

- (c) Check the wheel bearings for looseness.
 (d) Check the suspension for looseness.
 (e) Check the steering linkage for looseness.
 (f) Check that the absorbers work properly by using the standard bounce test.



2. MEASURE FOLLOW SPRING CLEARANCE AND BUMPER STOPPER CLEARANCE

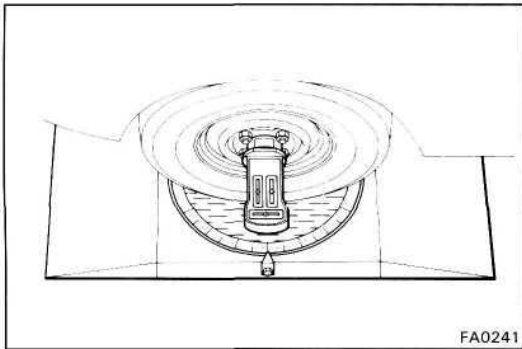
A: Follow spring clearance (Front)

B: Bumper stopper clearance (Rear)

	A	B
For Europe	39 mm (1.54 in.)	117 mm (4.61 in.)
For Australia*	52 mm (2.01 in.)	105 mm (4.13 in.)
For Middle East	38 mm (1.50 in.)	92 mm (3.62 in.)
Others	38 mm (1.50 in.)	118 mm (4.66 in.)

*: w/o Australia option

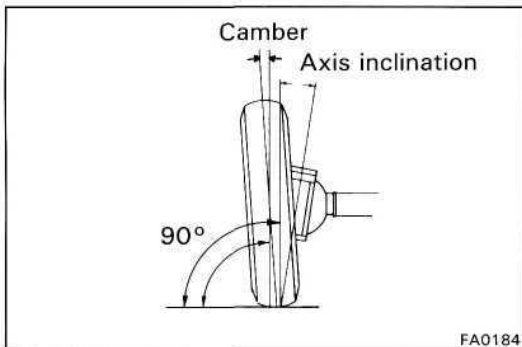
If the clearance of the vehicle is not standard, try to level the vehicle by rocking it down.



FRONT WHEEL ALIGNMENT

1. INSTALL WHEEL ALIGNMENT EQUIPMENT

Follow the specific instructions of the equipment manufacturer.



2. INSPECT CAMBER AND STEERING AXIS INCLINATION

Camber:

$1^{\circ}00' \pm 45'$ ($1.00^{\circ} \pm 0.75^{\circ}$)

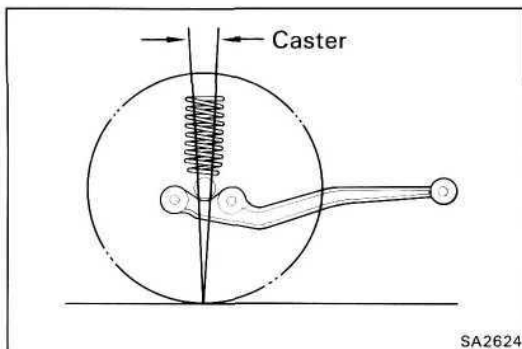
Cross camber:

30' or less (0.50° or less)

Steering axis inclination:

$13^{\circ}00' \pm 45'$ ($13.00^{\circ} \pm 0.75^{\circ}$)

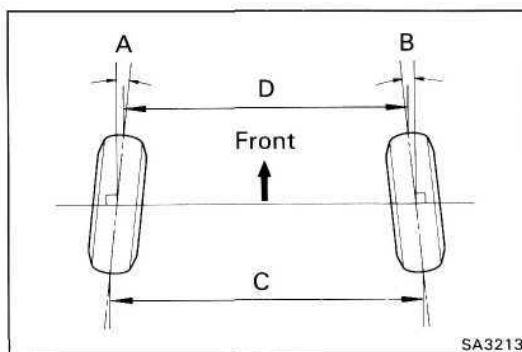
If the steering axis inclination is not as specified after camber have been correctly adjusted, recheck the steering knuckle and front wheel for bending or looseness.



3. INSPECT CASTER

$3^{\circ}00' \pm 1^{\circ}$ ($3.00^{\circ} \pm 1^{\circ}$)

If caster is not as specified, inspect and replace damaged or worn parts.

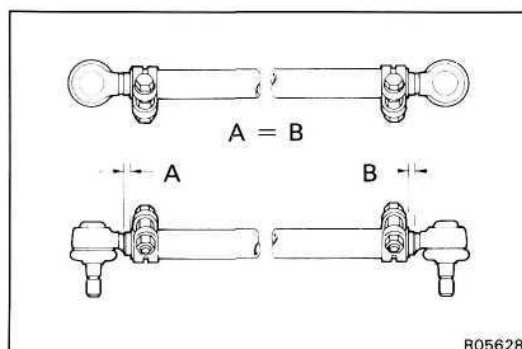


4. INSPECT TOE-IN

Toe-in (total):

Tire type	A + B	C - D
Bias tire	$0^{\circ}24' \pm 0^{\circ}12'$ ($0.4^{\circ} \pm 0.2^{\circ}$)	4 ± 2 mm (0.16 ± 0.08 in.)
Radial tire	$0^{\circ}12' \pm 0^{\circ}12'$ ($0.2^{\circ} \pm 0.2^{\circ}$)	2 ± 2 mm (0.08 ± 0.08 in.)

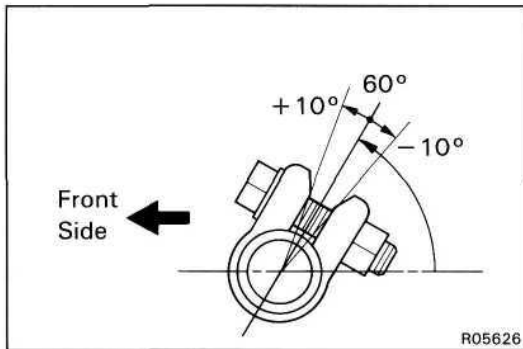
If toe-in is not specification, adjust by tie rod.



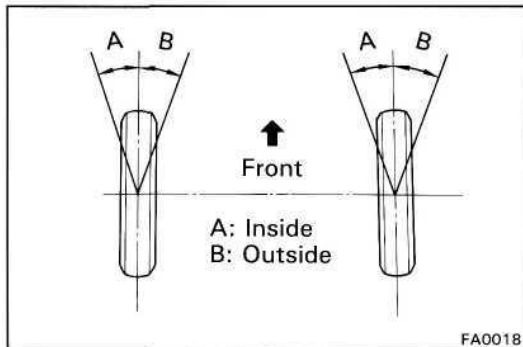
5. ADJUST TOE-IN

- Loosen the clamp bolts and nuts.
- Adjust toe-in to the correct value by turning the tie rod.
- Insure that the lengths of the tie rod ends are the same.
- Torque the tie rod clamp bolts and nuts.

Torque: 37 Nm (375 kgf-cm, 27 ftlbf)



HINT: The clamps opening must be positioned at the rear of the tie rod and face within $60^\circ \pm 10^\circ$ from the vehicle axis.

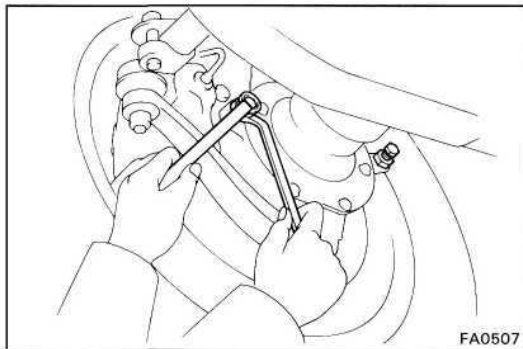


6. INSPECT WHEEL ANGLE

Remove the caps of the knuckle stopper bolts and check the steering angles.

Wheel angle:

Wheel angle (Max.)		
Inside wheel	w/ Power steering	$35^\circ \begin{smallmatrix} +0^\circ \\ -3^\circ \end{smallmatrix}$
	w/o Power steering	$32^\circ \begin{smallmatrix} +0^\circ \\ -3^\circ \end{smallmatrix}$
Outside wheel (reference)	w/ Power steering	31°
	w/ Power steering	29°



HINT: When the steering wheel is fully turned, make sure that the wheel is not touching the body or brake flexible hose.

If maximum steering angles differ from the standard value, adjust the wheel angle with the knuckle stopper bolts.

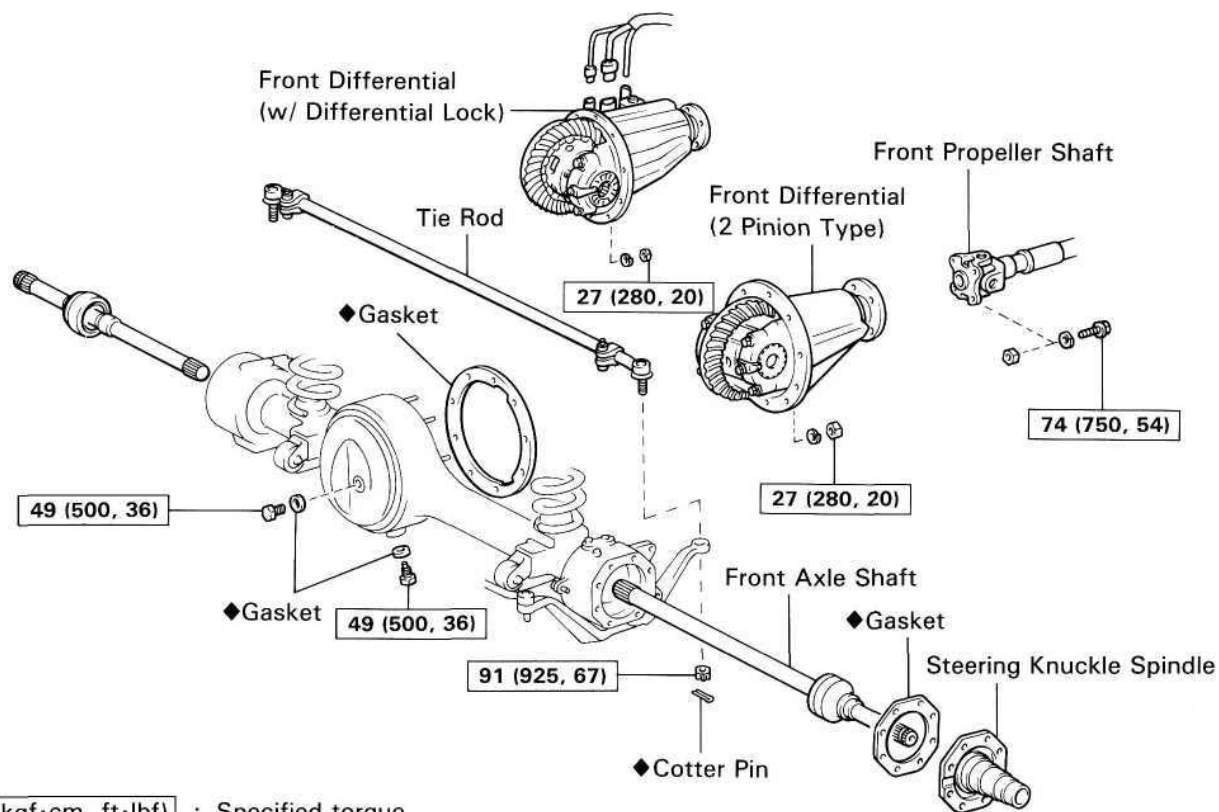
Torque: 44 N·m (450 kgfcm, 33 ft-lbf)

If the wheel angle still cannot be adjusted within limits, inspect and replace damaged or worn steering parts.

FRONT DIFFERENTIAL

ASSEMBLY REMOVAL AND INSTALLATION

COMPONENTS



N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

SA2387