TRANSFER

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TROUBLESHOOTING

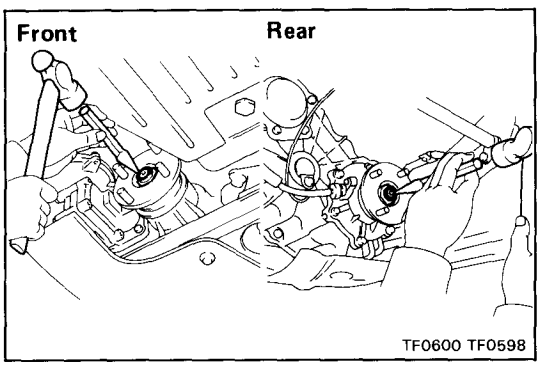
Problem	Possible cause	Remedy	Page
Hard to shift or will not shift	Splines on input shaft dirty or burred	Repair as necessary	TF-4
	Transfer faulty	Disassemble and inspect transfer	TF-4
Transfer jumps out of gear	Transfer faulty	Disassemble and inspect transfer	TF-4

ON-VEHICLE REPAIR

ON-VEHICLE REPLACEMENT OF FRONT AND REAR OIL SEALS

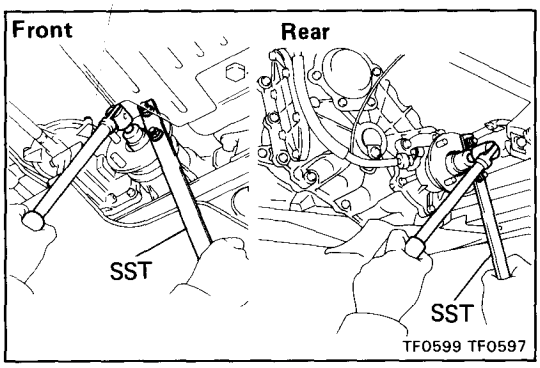
1. DRAIN GEAR OIL FROM TRANSFER

2. REMOVE FRONT AND REAR PROPELLER SHAFTS (See page PR-2)



3. REMOVE COMPANION FLANGE

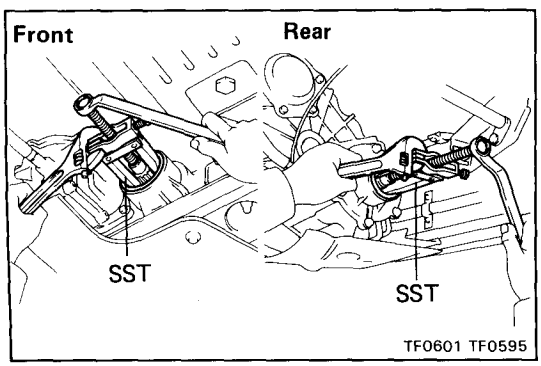
(a) Using a hammer and chisel, loosen the staked part of the nut.



(b) Using SST and two nuts to hold the companion flange, remove the companion flange lock nut.

SST 09330-00021

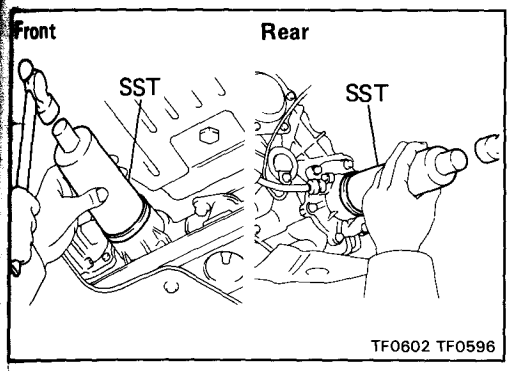
(c) Remove the plate washer and companion flange.



4. REPLACE OIL SEAL

(a) Using SST, remove the output shaft oil seal.

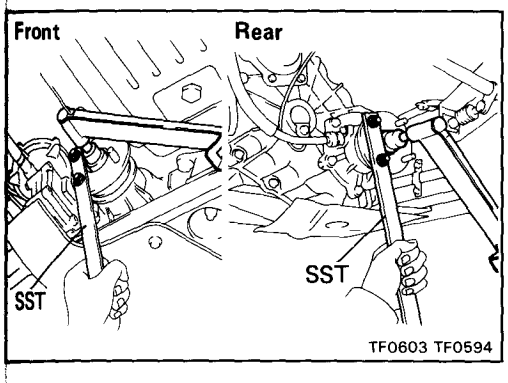
SST 09308-10010



(b) Using SST and hammer, tap in a new oil seal.

SST 09316-60010 (09316-00060)

(c) Apply MP grease to the oil seal lip.



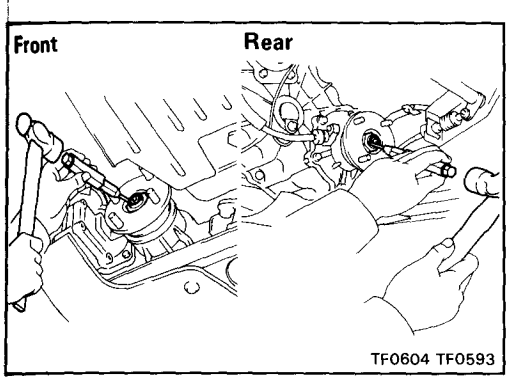
5. INSTALL COMPANION FLANGE

(a) Install the plate washer, companion flange and a new lock nut.

(b) Using SST and two nuts to hold the companion flange, torque the nut.

SST 09330-00021

Torque: 1,300 kg-cm (94 ft-lb, 127 N·m)



(c) Using a punch and hammer, stake the lock nut.

6. INSTALL FRONT AND REAR PROPELLER SHAFTS
(See page PR-2)

Torque: 900 kg-cm (65 ft-lb, 88 N·m)

7. FILL TRANSFER WITH OIL

Oil grade: API GL-4 or GL-5

Viscosity: SAE 90

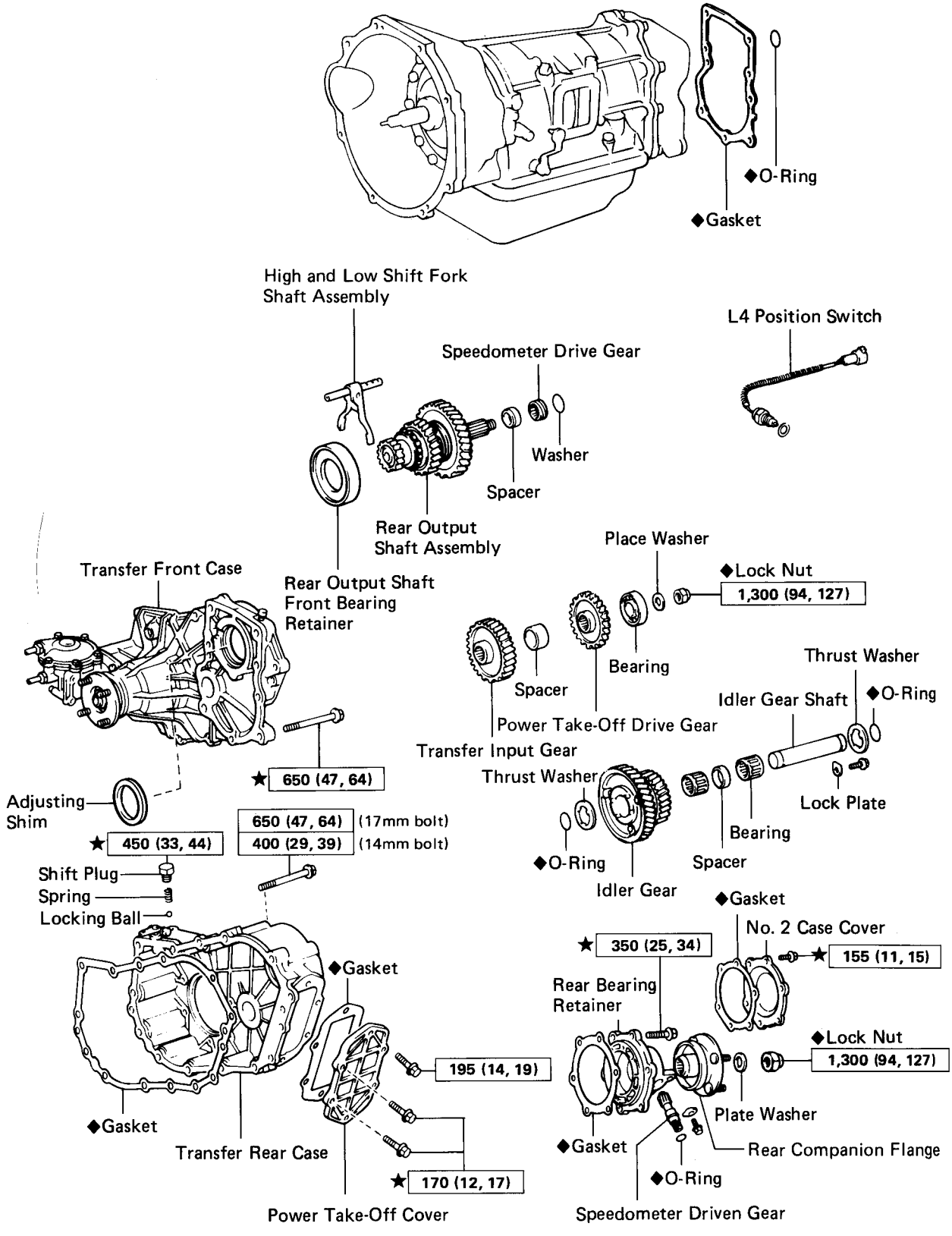
Capacity: 2.1 liters (2.2 US qts, 1.8 Imp. qts)

REMOVAL AND INSTALLATION OF TRANSFER

(See page MT-5)

DISASSEMBLY OF TRANSFER

COMPONENTS



kg-cm (ft-lb, N·m) : Specified torque

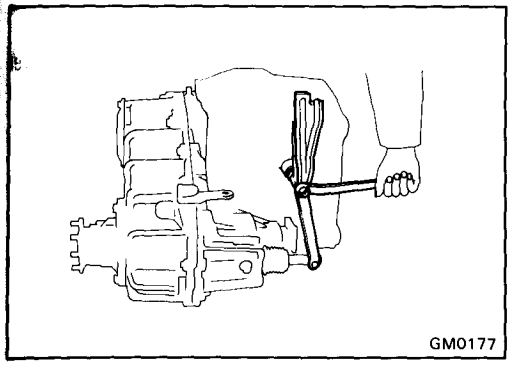
◆ Non-reusable part

★ Precoated part

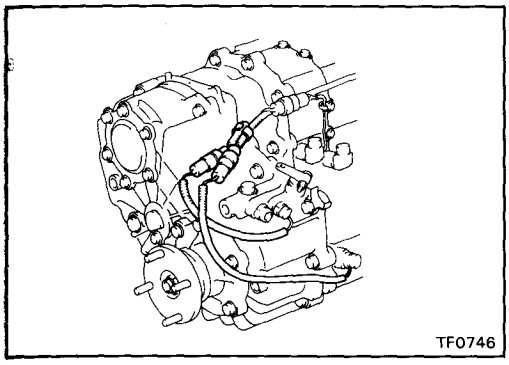
TF0830

DISASSEMBLY OF TRANSFER

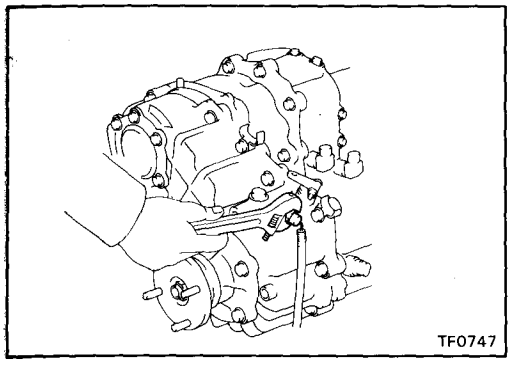
(See page TF-4)


GM0177

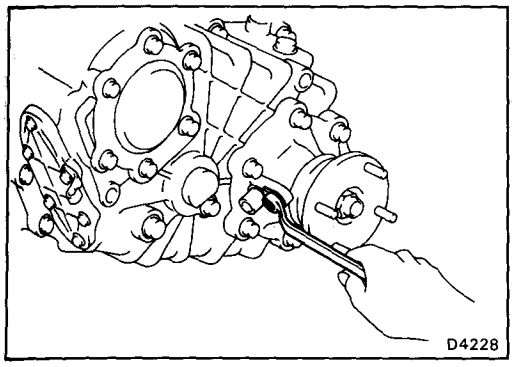
1. **(DIRECT SHIFT TYPE)**
   REMOVE TRANSFER FRONT DRIVE SHIFT LEVER
   (a) Remove the drive shift lever from transfer.
   (b) Remove the dust boot.


TF0746

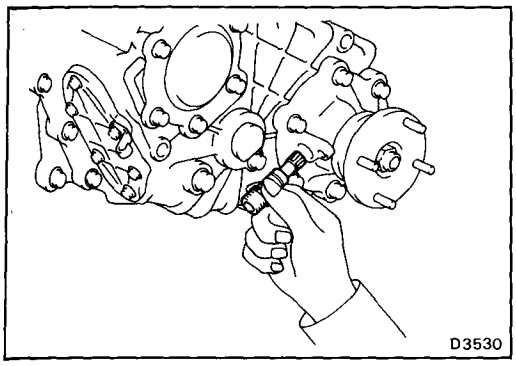
(VACUUM SHIFT TYPE)
REMOVE TRANSFER L4 POSITION SWITCH
(a) Disconnect the two connectors.


TF0747

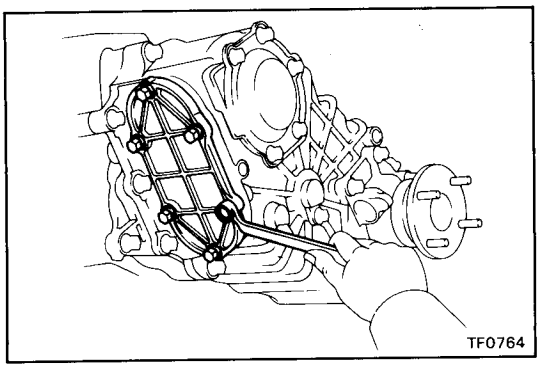
(b) Remove the transfer L4 position switch.


D4228

2. **REMOVE SPEEDOMETER DRIVEN GEAR**
   (a) Remove the bolt and lock plate.

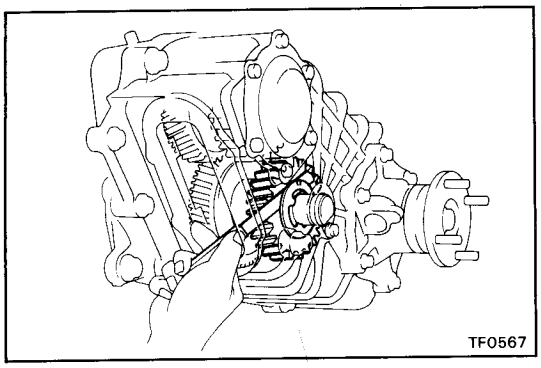

D3530

(b) Remove the speedometer driven gear.
(c) Remove the O-ring from the speedometer driven gear.



3. REMOVE POWER TAKE-OFF COVER

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

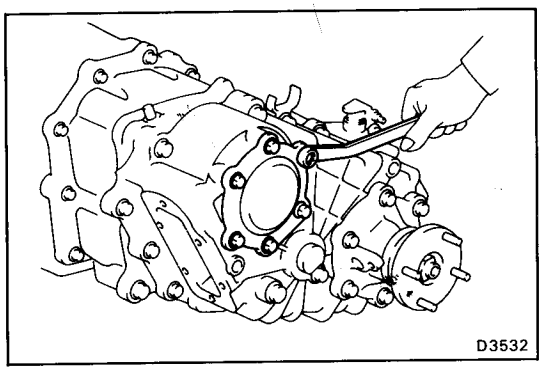


4. INSPECT IDLER GEAR THRUST CLEARANCE

Using a feeler gauge, measure the clearance between the idler gear and thrust washer.

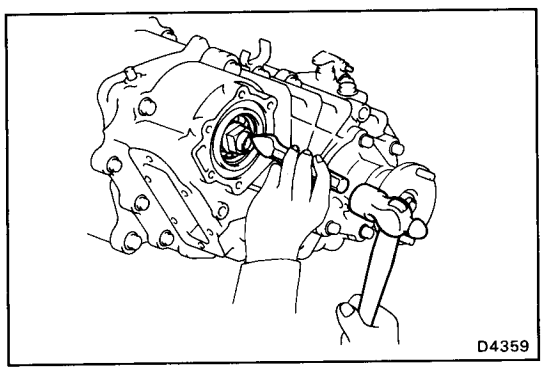
Standard clearance: **0.275 — 0.625 mm (0.0110 — 0.0246 in.)**

Maximum clearance: **0.625 mm (0.0264 in.)**



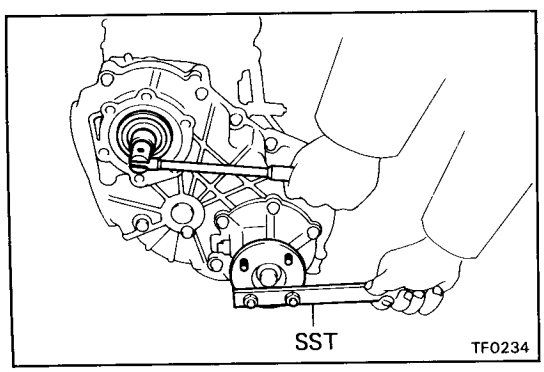
5. REMOVE TRANSFER NO.2 CASE COVER

Remove the six bolts, and remove transfer No.2 case cover and gasket.



6. REMOVE TRANSMISSION OUTPUT SHAFT LOCK NUT

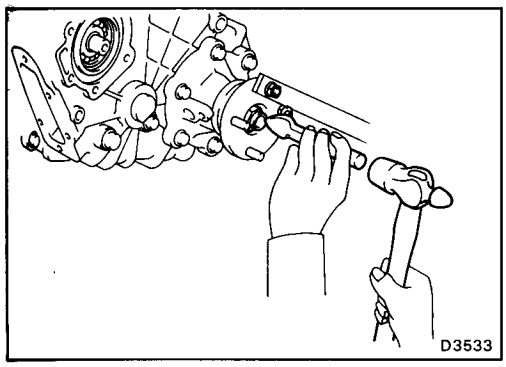
(a) Using a hammer and chisel, loosen the staked part of the nut.



(b) Shift the outer lever of the transfer high and low shift lever to H2 or L4 position.

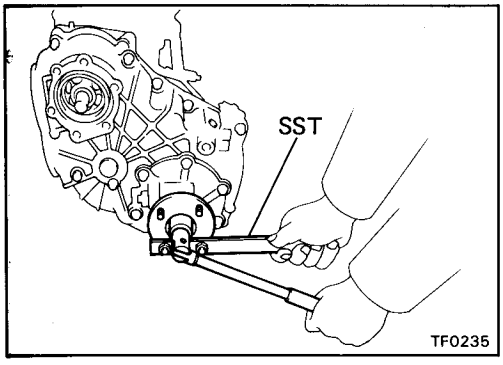
(c) Using SST and two nuts to hold the rear companion flange, remove the transmission output shaft lock nut and plate washer.

SST 09330-00021



7. REMOVE REAR COMPANION FLANGE

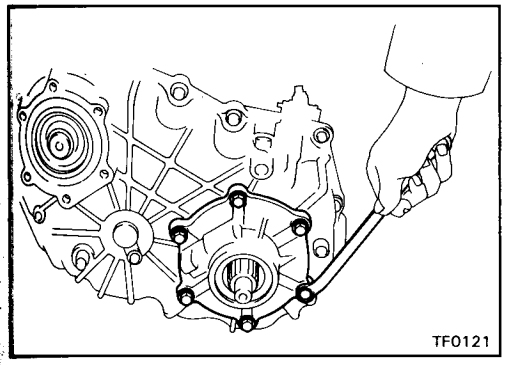
(a) Using a hammer and chisel, loosen the staked part of the nut.



(b) Using SST and two nuts to hold the rear companion flange, remove the companion flange lock nut.

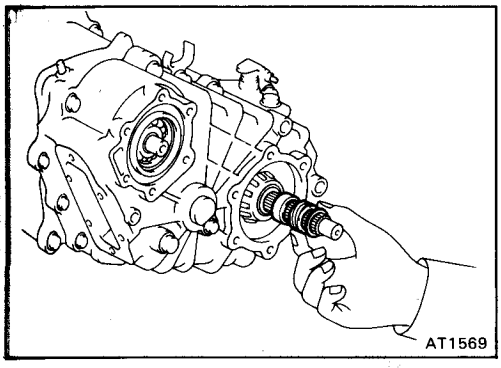
SST 09330-00021

(c) Remove the plate washer and companion flange.

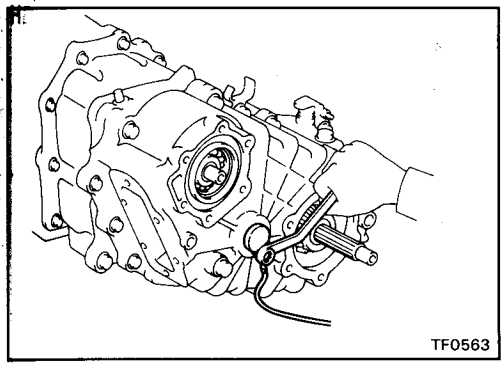


8. REMOVE REAR OUTPUT SHAFT REAR BEARING RETAINER

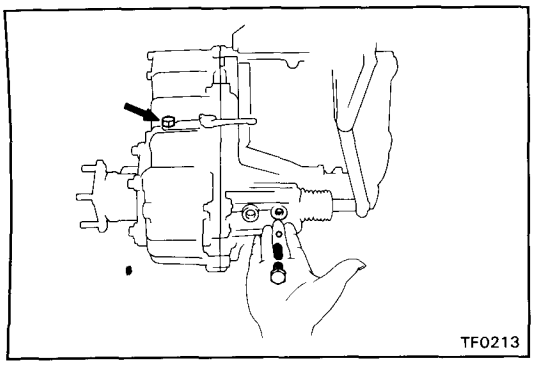
Remove the six bolts, and remove the rear output shaft bearing retainer and gasket.



9. REMOVE WASHER, SPEEDOMETER DRIVE GEAR AND SPACER

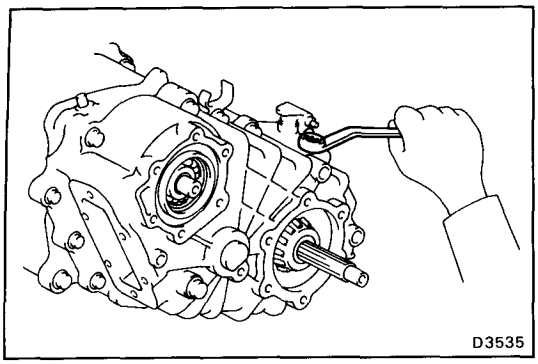


10. REMOVE IDLER GEAR SHAFT LOCK PLATE



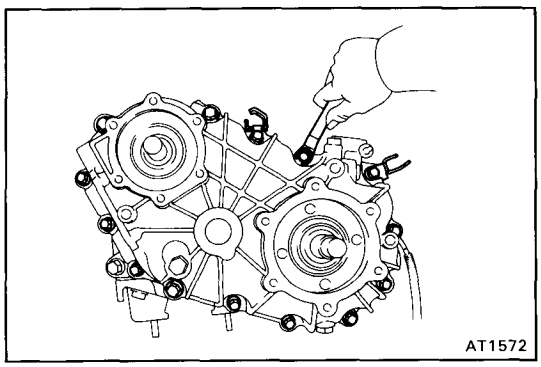
11. REMOVE SHIFT PLUGS, SPRINGS AND LOCKING BALLS
[Direct Shift Type]

Remove the shift plugs and, using a magnetic finger, remove the springs and locking balls.



[Vacuum Shift Type]

Remove the shift plug, and using a magnetic finger, remove the spring and locking ball.

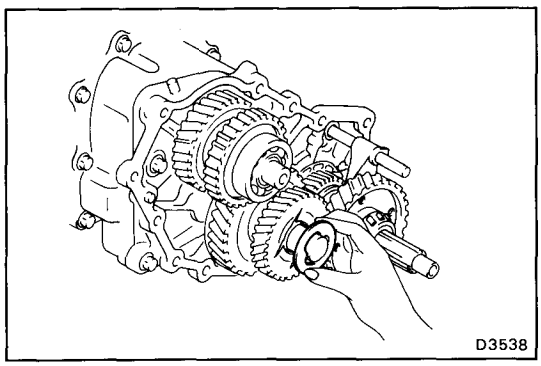


12. REMOVE TRANSFER REAR CASE

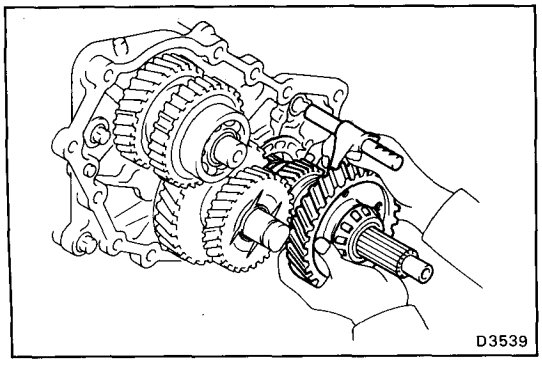
(a) Remove the fourteen bolts.

(b) Using a plastic hammer, remove the transfer rear case.

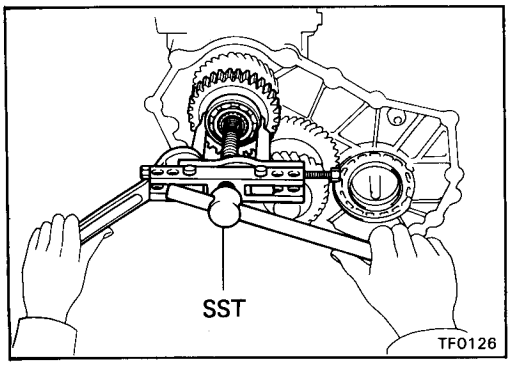
(c) Remove the gasket from the transfer rear case.



(d) Remove the thrust washer from the idler gear shaft.



13. REMOVE REAR OUTPUT SHAFT ASSEMBLY WITH HIGH AND LOW SHIFT FORK SHAFT ASSEMBLY

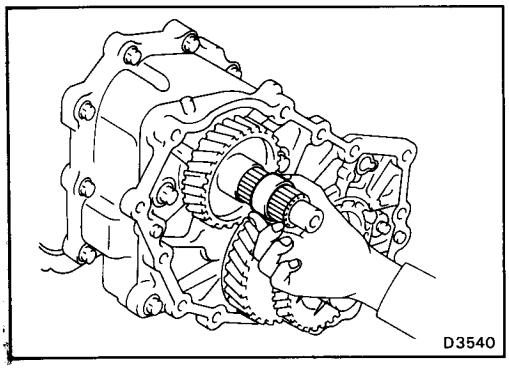


14. REMOVE POWER TAKE-OFF DRIVE GEAR

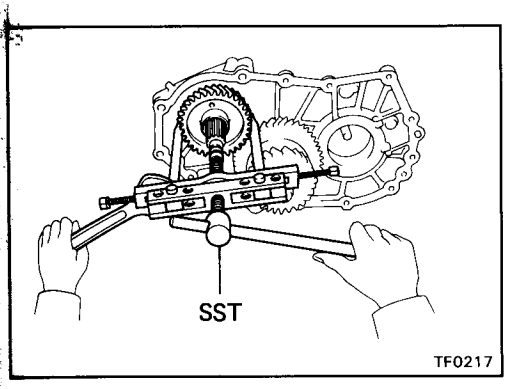
(a) Using SST, remove the transfer input gear bearing.

SST 09950-20017

(b) Remove the power take-off drive gear.



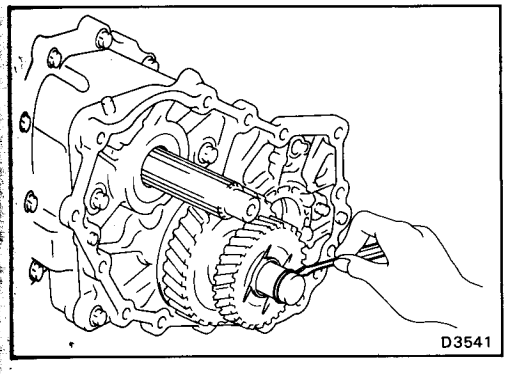
(c) Remove the spacer.



15. REMOVE TRANSFER INPUT GEAR

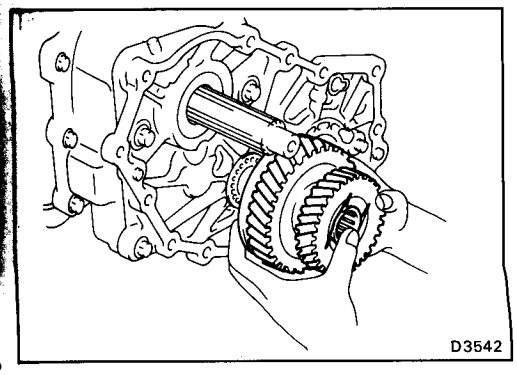
Using SST, remove the transfer input gear.

SST 09950-20017

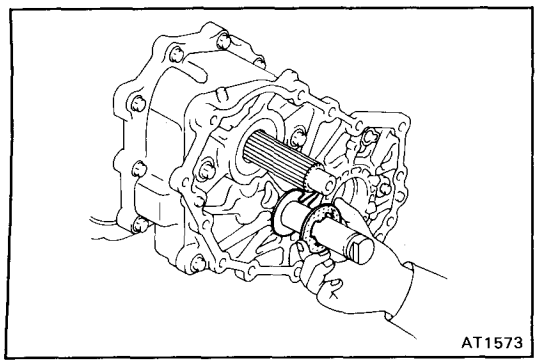


16. REMOVE IDLER GEAR AND IDLER GEAR SHAFT

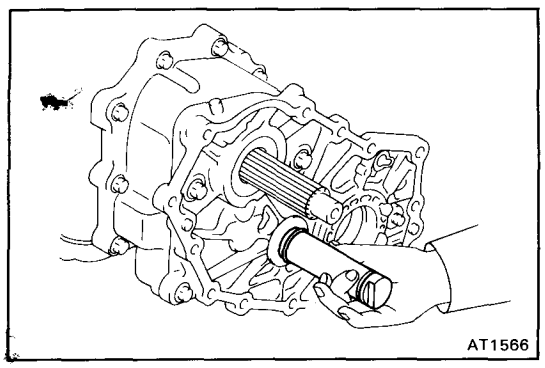
(a) Remove the O-ring from the idler gear shaft.



(b) Remove the idler gear with the two bearings and spacer.

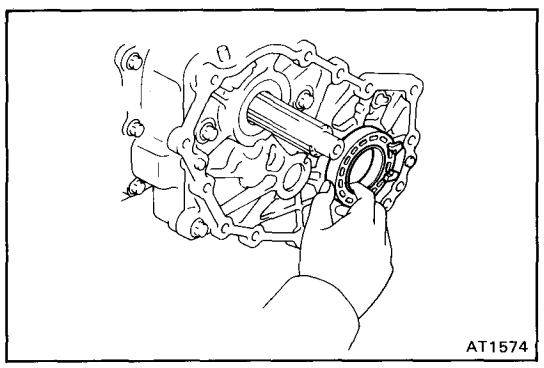

AT1573

(c) Remove the thrust washer from idler gear shaft.

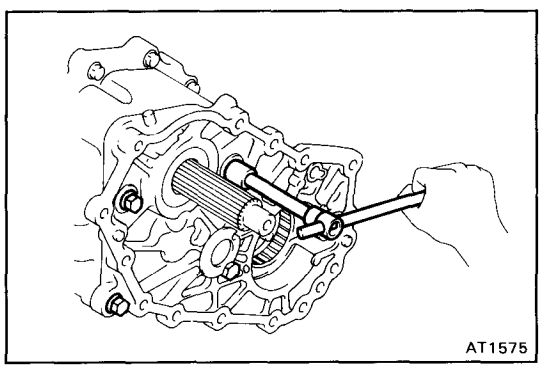

AT1566

(d) Remove the idler gear shaft.

(e) Remove the O-ring from the idler gear shaft.


AT1574

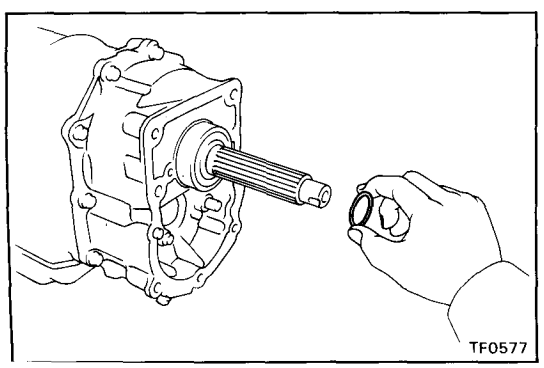
17. REMOVE REAR OUTPUT SHAFT FRONT BEARING RETAINER


AT1575

18. REMOVE TRANSFER FRONT CASE

(a) Remove the four bolts and using a plastic hammer, remove the transfer front case.

(b) Remove the gasket and shim.

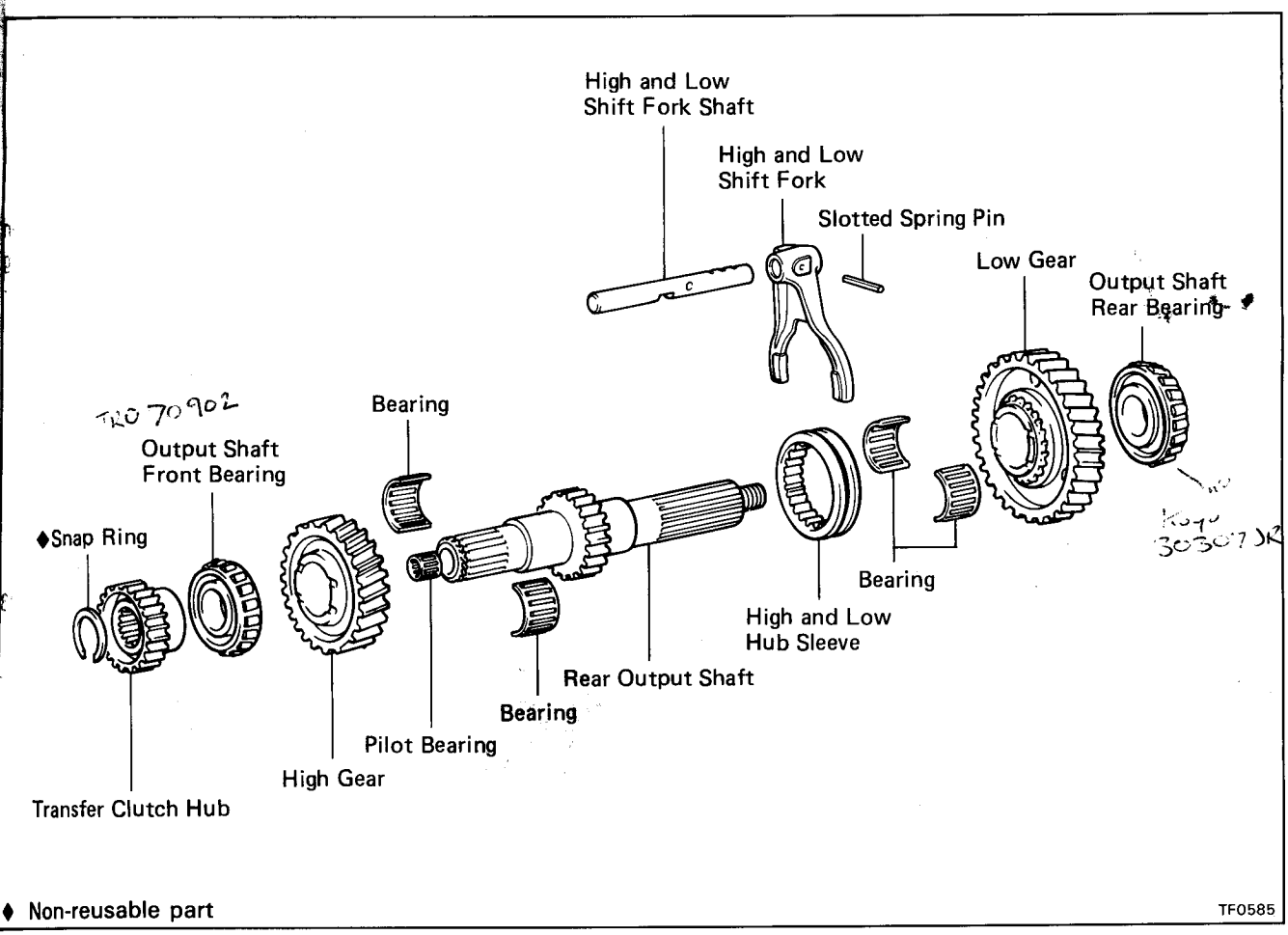

TF0577

19. REMOVE O-RING FROM TRANSMISSION OUTPUT SHAFT

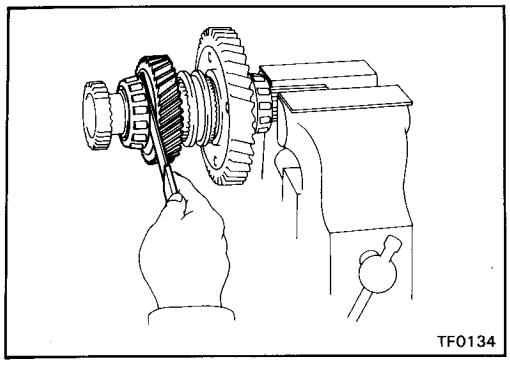
COMPONENT PARTS

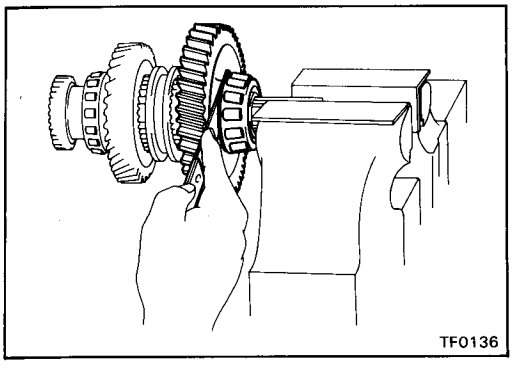
Rear Output Shaft Assembly

COMPONENTS



♦ Non-reusable part





DISASSEMBLY OF REAR OUTPUT SHAFT ASSEMBLY

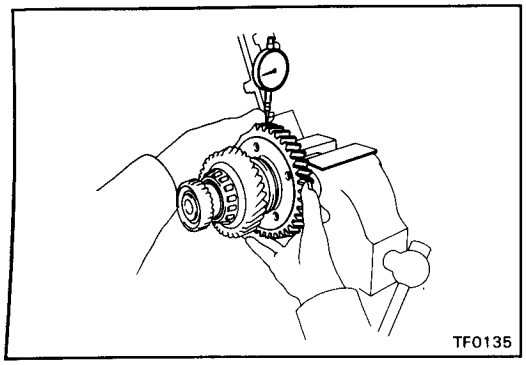
1. INSPECT THRUST CLEARANCES OF HIGH AND LOW GEARS

(a) Using a feeler gauge, measure the thrust clearance between the high gear and bearing.

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

(b) Using a feeler gauge, measure the thrust clearance between the low gear and bearing.

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

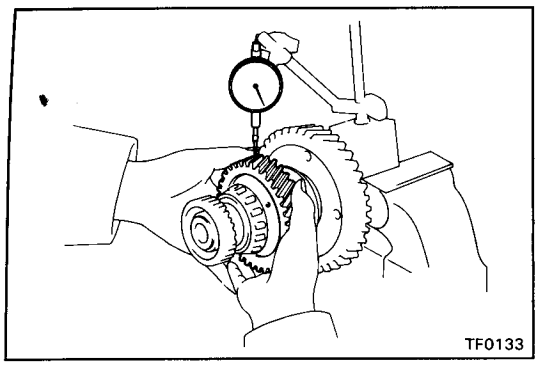

TF0135

2. INSPECT OIL CLEARANCES OF LOW AND HIGH GEARS

(a) Using a dial indicator, measure oil clearance between the low gear and shaft with the needle roller bearing installed.

Standard clearance: **0.019 — 0.068 mm (0.0007 — 0.0027 in.)**

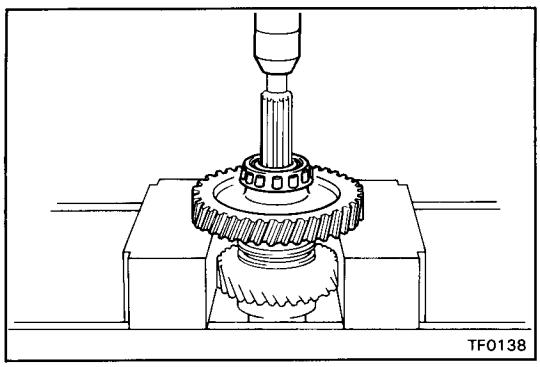
Maximum clearance: **0.068 mm (0.0027 in.)**


TF0133

(b) Using a dial indicator, measure oil clearance between the high gear and shaft with the needle roller bearing installed.

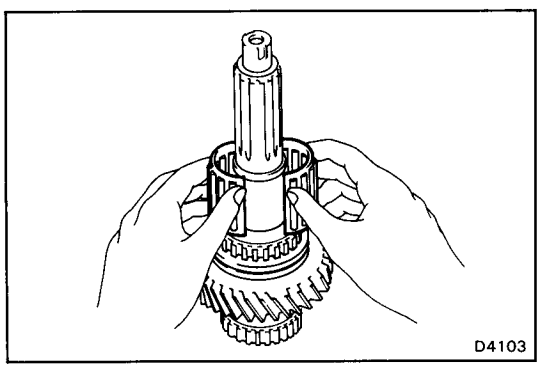
Standard clearance: **0.019 — 0.068 mm (0.0007 — 0.0027 in.)**

Maximum clearance: **0.068 mm (0.0027 in.)**

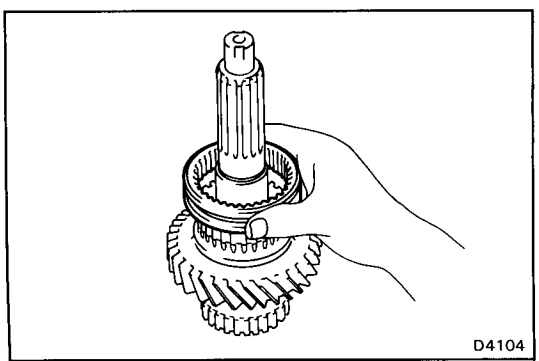

TF0138

3. REMOVE LOW GEAR, AND HIGH AND LOW CLUTCH HUB SLEEVE

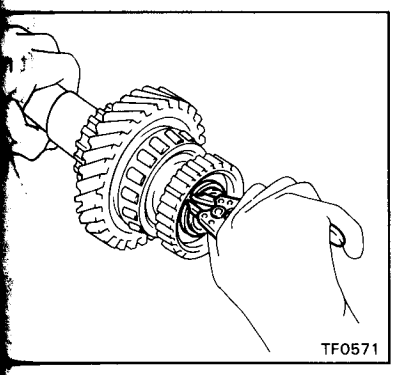
(a) Using a press, press out the output shaft rear bearing and low gear.


D4103

(b) Remove low gear bearings from the rear output shaft.

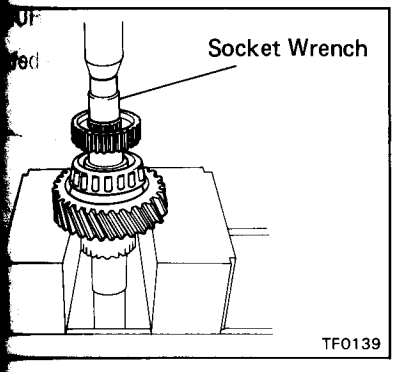

D4104

(c) Remove the high and low hub sleeve.


TF0571

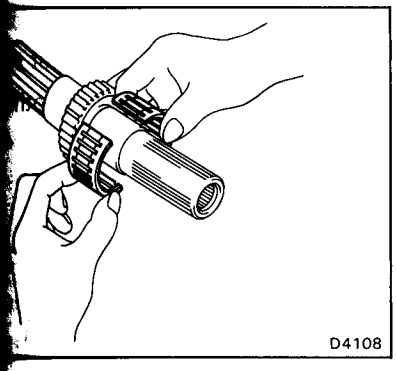
4. REMOVE TRANSFER CLUTCH HUB AND HIGH GEAR

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

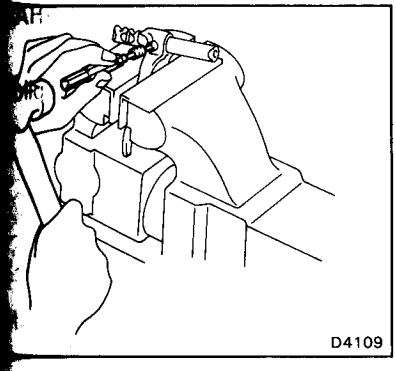


TF0139

(b) Using a press and socket wrench, press out the transfer clutch hub, output shaft front bearing and high gear.


D4108

(c) Remove the high gear bearings from the rear output shaft.

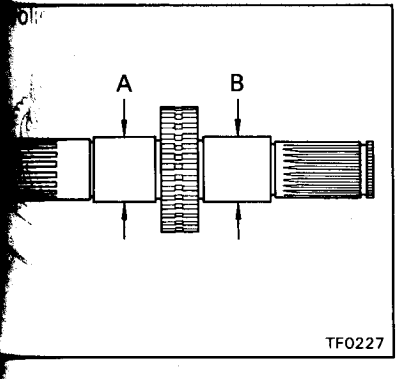

D4109

5. REMOVE HIGH AND LOW SHIFT FORK SHAFT

(a) Mount the high and low shift fork in a soft jaw vise.

(b) Using a pin punch and hammer, tap out the slotted spring pin.

(c) Remove the shift fork shaft from the shift fork.



TF0227

INSPECTION OF REAR OUTPUT SHAFT ASSEMBLY COMPONENTS

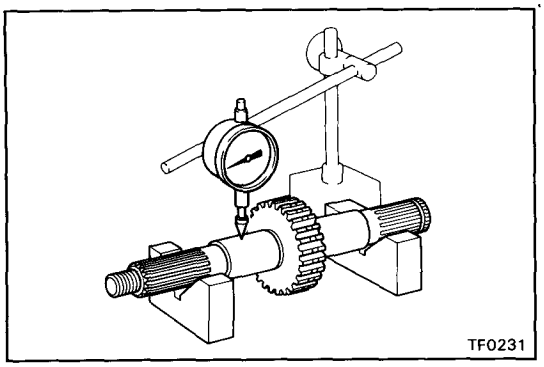
1. INSPECT REAR OUTPUT SHAFT

(a) Check the rear output shaft for wear or damage.

(b) Using a micrometer, measure the outer diameter of the rear output shaft journal surface.

Minimum outer diameter:

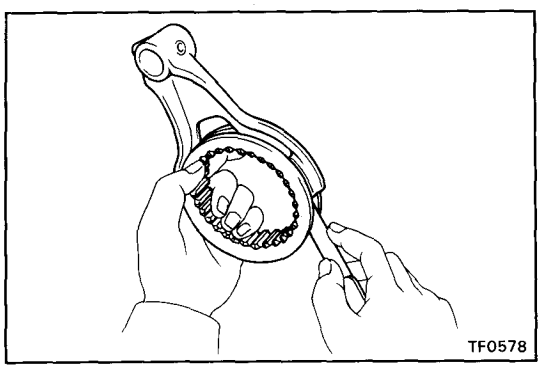
Part A 40.009 mm (1.5752 in.)
B 40.009 mm (1.5752 in.)



(c) Place the rear output shaft on V-blocks.

(d) Using a dial indicator, measure the shaft runout.

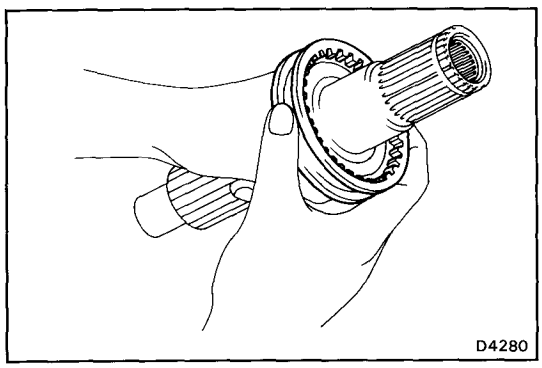
Maximum runout: 0.03 mm (0.0012 in.)



2. INSPECT CLEARANCE OF SHIFT FORK AND HUB SLEEV

Using a feeler gauge, measure the clearance between th hub sleeves and shift fork.

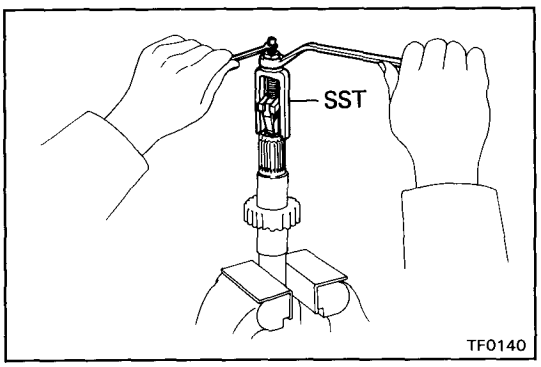
Maximum clearance: 1.0 mm (0.039 in.)



3. INSPECT HIGH AND LOW HUB SLEEVE

(a) Install the hub sleeve to the rear output shaft.

(b) Check that the hub sleeve moves smoothly.

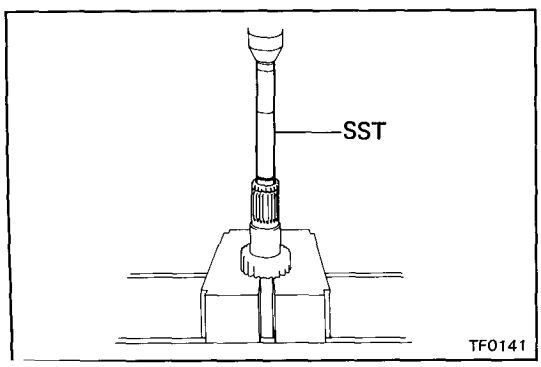


4. IF NECESSARY, REPLACE REAR OUTPUT SHAFT PILO BEARING

(a) Using SST, remove the rear output shaft pilot bearir

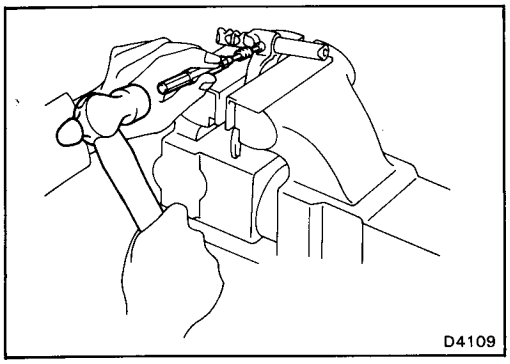
SST 09319-60020

HINT: The bearing will break.



(b) Using SST and a press, press in a new pilot bearii

SST 09608-20012 (09608-03020)



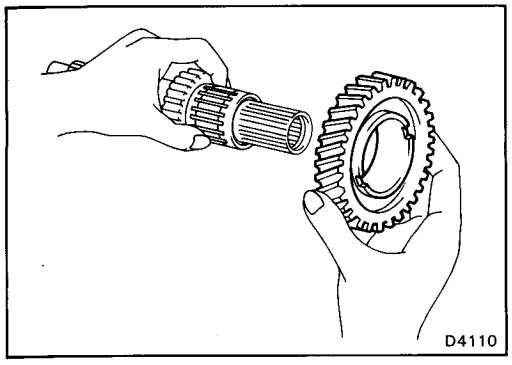
ASSEMBLY OF REAR OUTPUT SHAFT ASSEMBLY

1. INSTALL HIGH AND LOW SHIFT FORK SHAFT

(a) Mount the high and low shift fork in a soft jaw vise.

(b) Install the shift fork shaft into the shift fork.

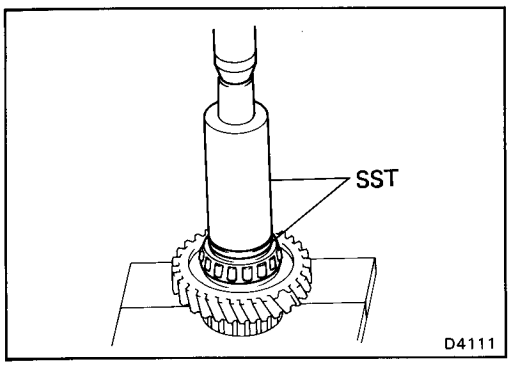
(c) Using a pin punch and hammer, tap in the slotted spring pin.



2. INSTALL HIGH GEAR AND TRANSFER CLUTCH HUB

(a) Apply MP grease to the high gear bearings.

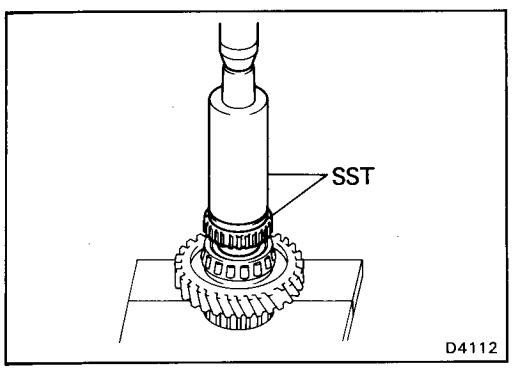
(b) Install high gear bearings and high gear.



(c) Using SST and a press, press in the output shaft front bearing.

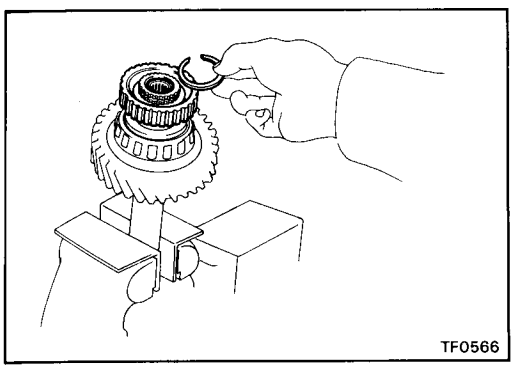
SST 09316-60010 (09316-00010, 09316-00070)

HINT: Replace both the bearing and the outer race as a set.



(d) Using SST and a press, press in the clutch hub.

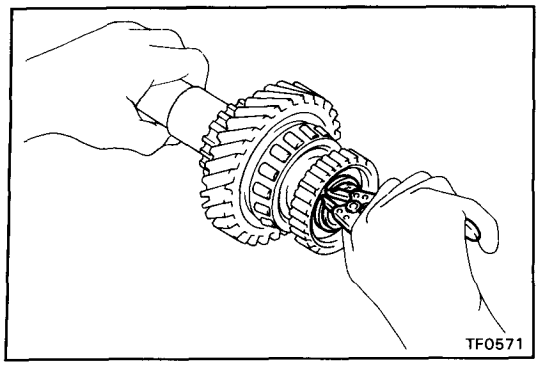
SST 09316-60010 (09316-00010, 09316-00070)



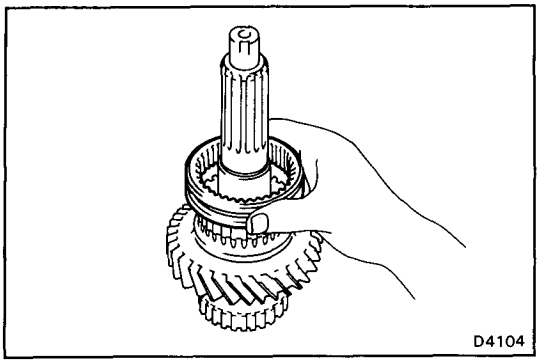
3. INSTALL SNAP RING

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

Mark	Thickness mm (in.)
11	2.30 — 2.35 (0.0906 — 0.0925)
17	2.60 — 2.65 (0.1024 — 0.1043)

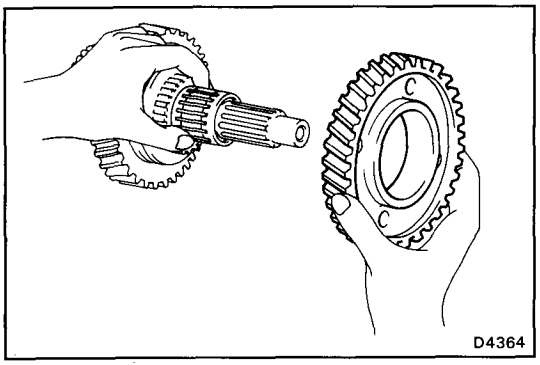


(b) Using snap ring pliers, install a new snap ring.



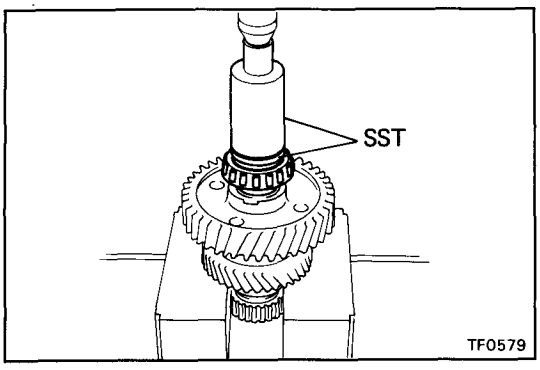
4. INSTALL LOW GEAR TO REAR OUTPUT SHAFT

(a) Install the high and low hub sleeve.



(b) Apply MP grease to the low gear bearings.

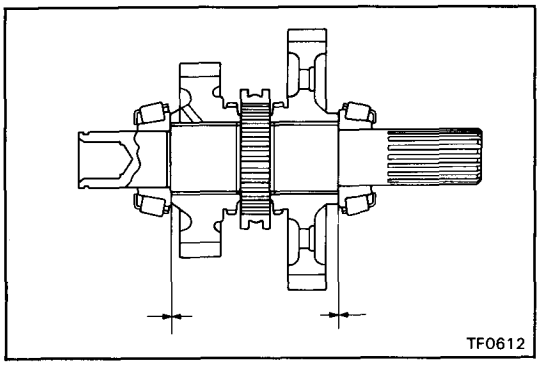
(c) Install low gear bearings and low gear.



(d) Using SST and a press, press in the output shaft rear bearing.

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

HINT: Replace both the bearing and the outer race as a set.



5. INSPECT THRUST CLEARANCES OF HIGH AND LOW GEARS

(a) Using a feeler gauge, measure the thrust clearance between the high gear and bearing.

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

Maximum clearance: 0.25 mm (0.0098 in.)

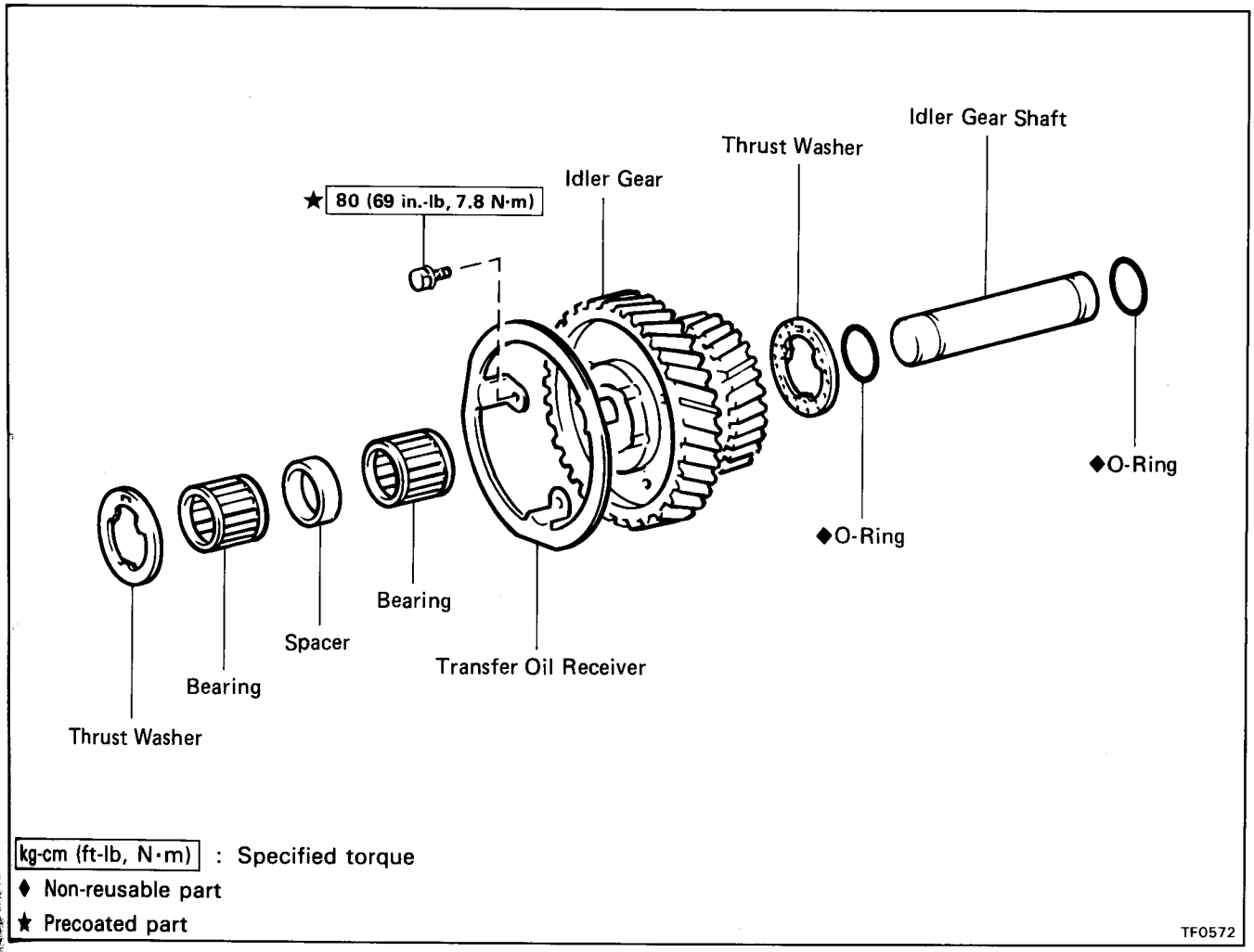
(b) Using a feeler gauge, measure the thrust clearance between the low gear and bearing.

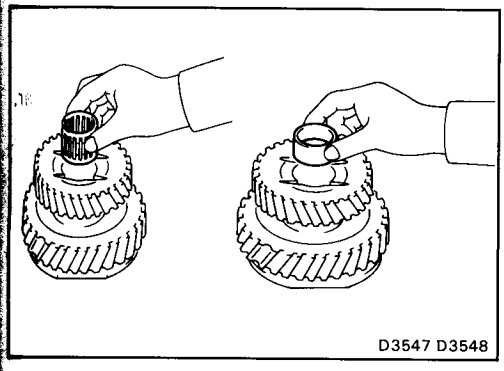
Standard clearance: 0.10 — 0.25 mm (0.0039 — 0.0098 in.)

Maximum clearance: 0.25 mm (0.0098 in.)

Idler Gear

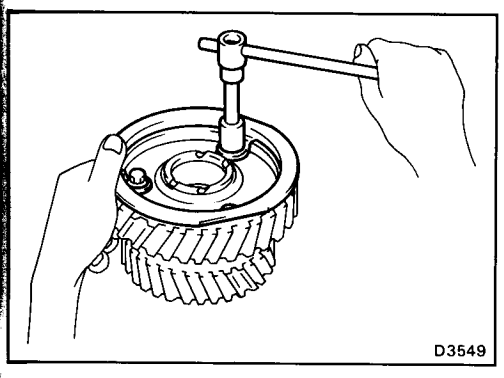
COMPONENTS





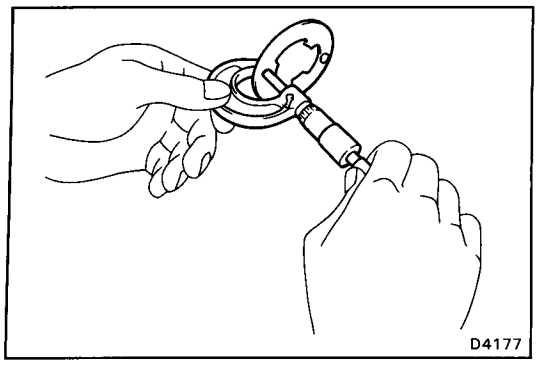
DISASSEMBLY OF IDLER GEAR

1. REMOVE TWO BEARINGS AND SPACER



2. REMOVE TRANSFER OIL RECEIVER

Remove the three bolts and transfer oil receiver from the idler gear.


D4177

INSPECTION OF IDLER GEAR COMPONENT

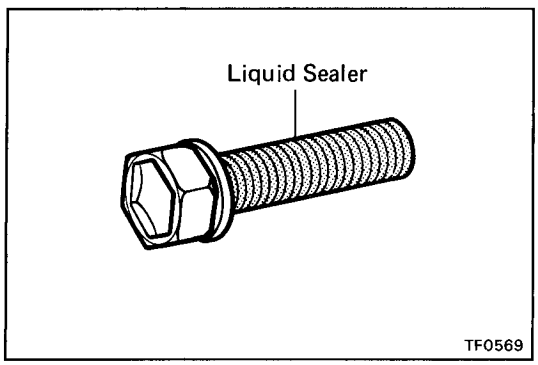
INSPECT THRUST WASHER

Using a micrometer, measure the thrust washer thickness.

Standard thickness: **1.95 – 2.05 mm (0.077 – 0.081 in.)**

Minimum thickness: **1.65 mm (0.065 in.)**

If the thickness is less than minimum, replace the thrust washer.



TF0569

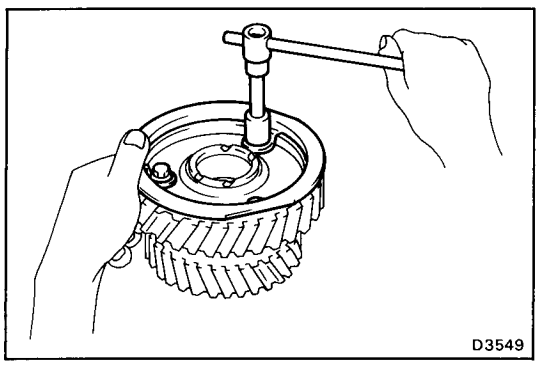
ASSEMBLY OF IDLER GEAR

1. INSTALL TRANSFER OIL RECEIVER

(a) Clean the threads of the bolts and case with cleaner.

(b) Apply liquid sealer to the bolt threads.

Sealant: **Part No.08833-00070, THREE BOND 1324 or equivalent**


D3549

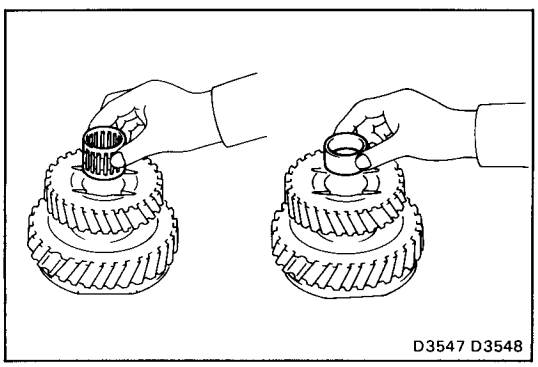
(c) Install the transfer oil receiver with the three bolts.

Torque: **80 kg-cm (69 ft-lb, 7.8 N·m)**

2. INSTALL TWO BEARINGS AND SPACER

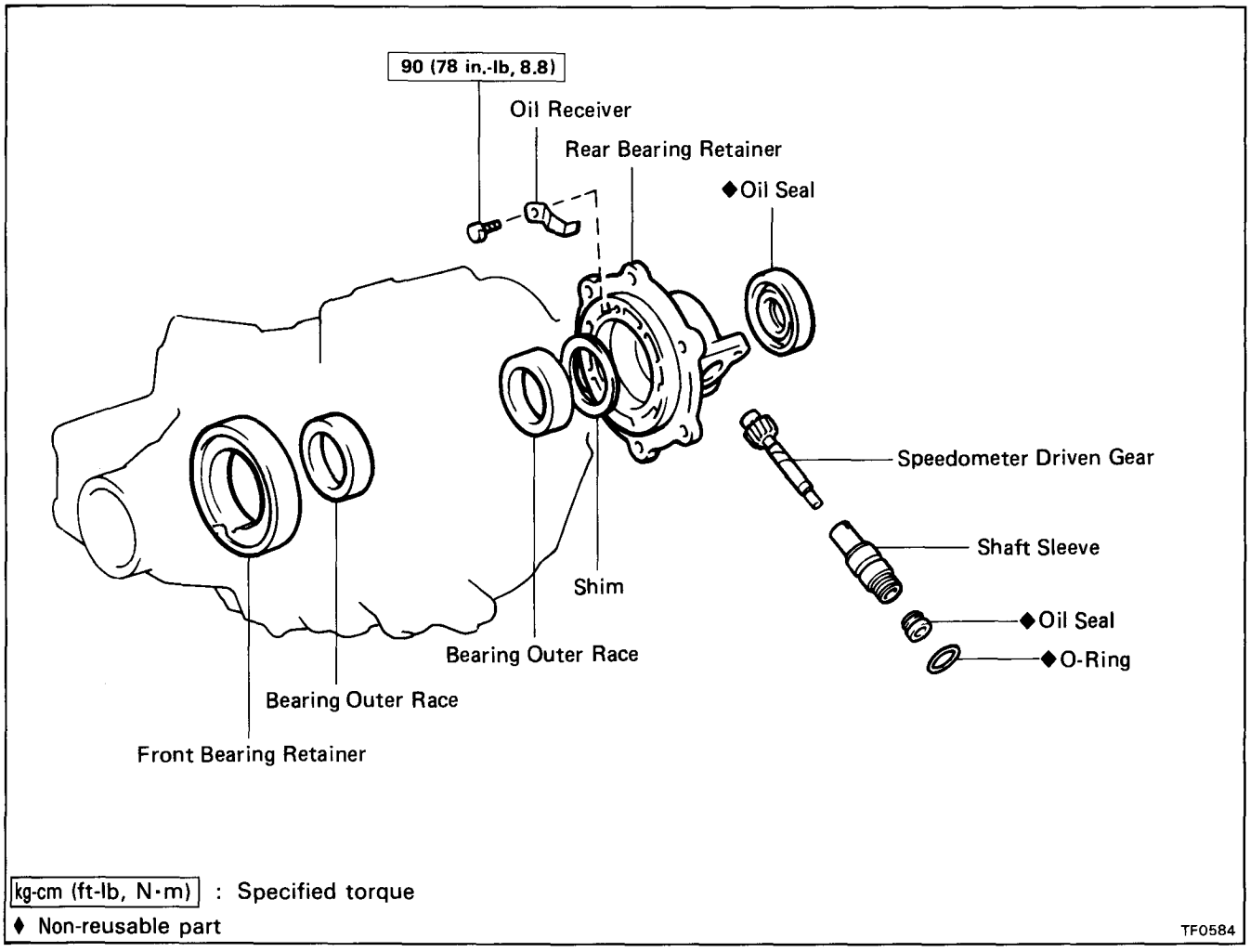
(a) Apply MP grease to the two bearings.

(b) Install the two bearings and spacer to the idler gear.


D3547 D3548

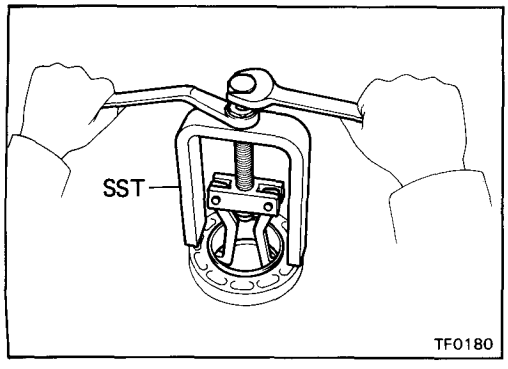
Rear Output Shaft Bearing Retainers

COMPONENTS

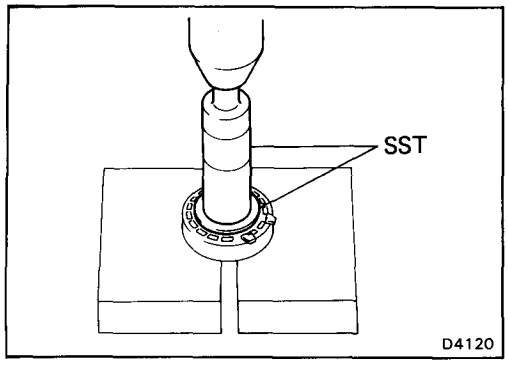


kg-cm (ft-lb, N·m) : Specified torque
◆ Non-reusable part

TF0584



TF0180



D4120

INSPECTION AND REPAIR OF REAR OUTPUT SHAFT BEARING RETAINERS

1. **IF NECESSARY, REPLACE REAR OUTPUT SHAFT FRONT BEARING OUTER RACE**

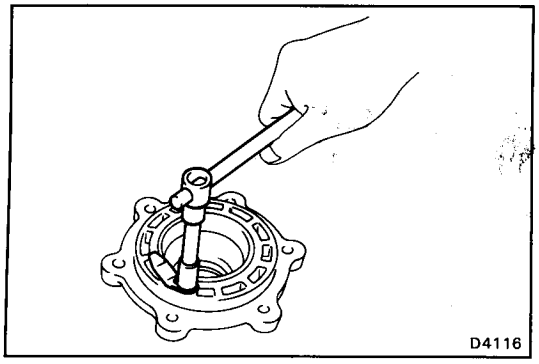
   (a) Using SST, remove the outer race of the front bearing retainer.

   SST 09514-35011

   (b) Using SST and a press, press a new outer race into the front bearing retainer.

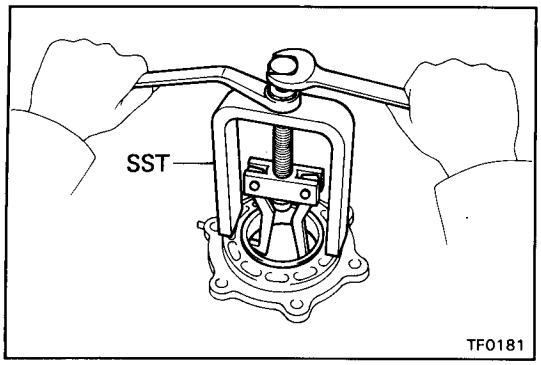
   SST 09316-60010 (09316-00010, 09316-00040)

   HINT: Replace both the outer race and the bearing as a set.



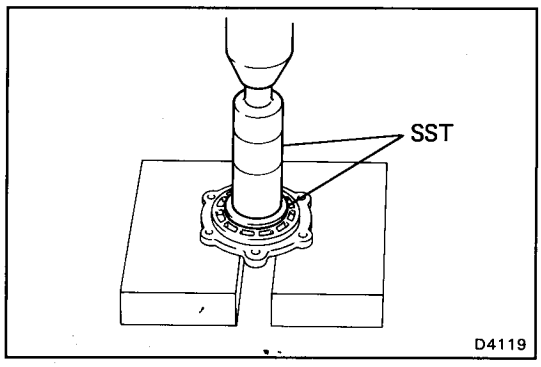
2. IF NECESSARY, REPLACE REAR OUTPUT SHAFT REA BEARING OUTER RACE

(a) Remove the bolt and oil receiver from the rear bea ing retainer.



(b) Using SST, remove the bearing outer race and shi from the rear bearing retainer.

SST 09514-35011



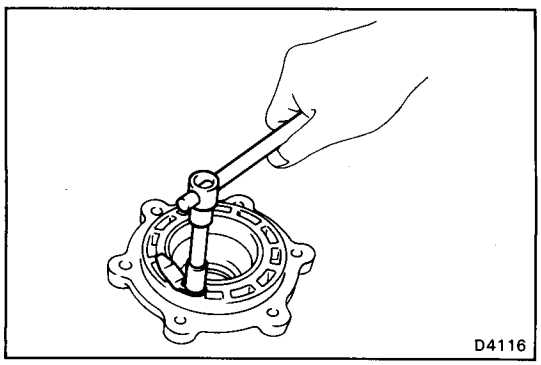
(c) Install the shim into the rear bearing retainer.

HINT: Reinstall the removed shim.

(d) Using SST, press a new rear outer race into the rea bearing retainer.

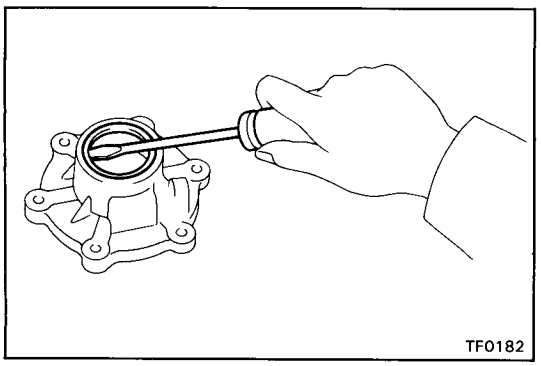
SST 09316-60010 (09316-00010, 09316-00030)

HINT: Replace both the outer race and the bearing as set



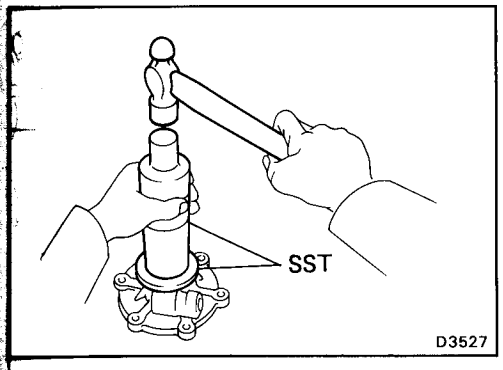
(e) Install the oil receiver to the rear bearing retainer wit the bolt.

Torque: 90 kg-cm (78 in.-lb, 8.8 N·m)



3. IF NECESSARY, REPLACE REAR OUTPUT SHAFT OIL SEA

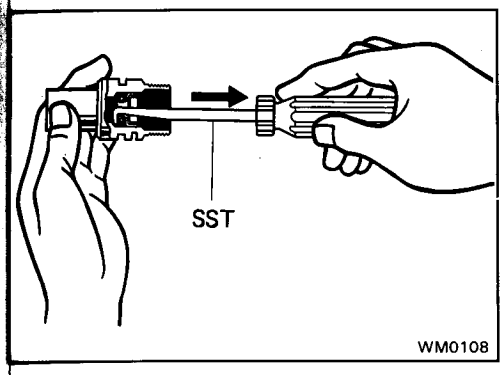
(a) Using a screwdriver, remove the oil seal.



(b) Using SST and a hammer, tap in a new oil seal.

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

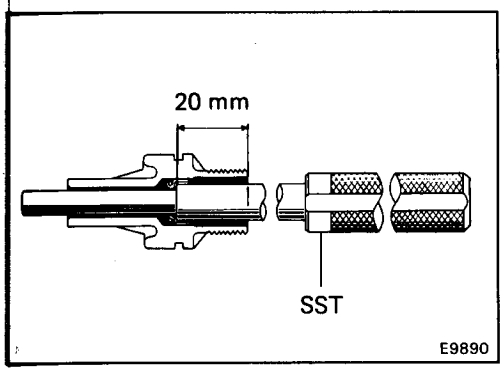
(c) Apply MP grease to oil seal lip.



4. IF NECESSARY, REPLACE SPEEDOMETER DRIVEN GEAR OIL SEAL

(a) Using SST, pull out the oil seal.

SST 09921-00010



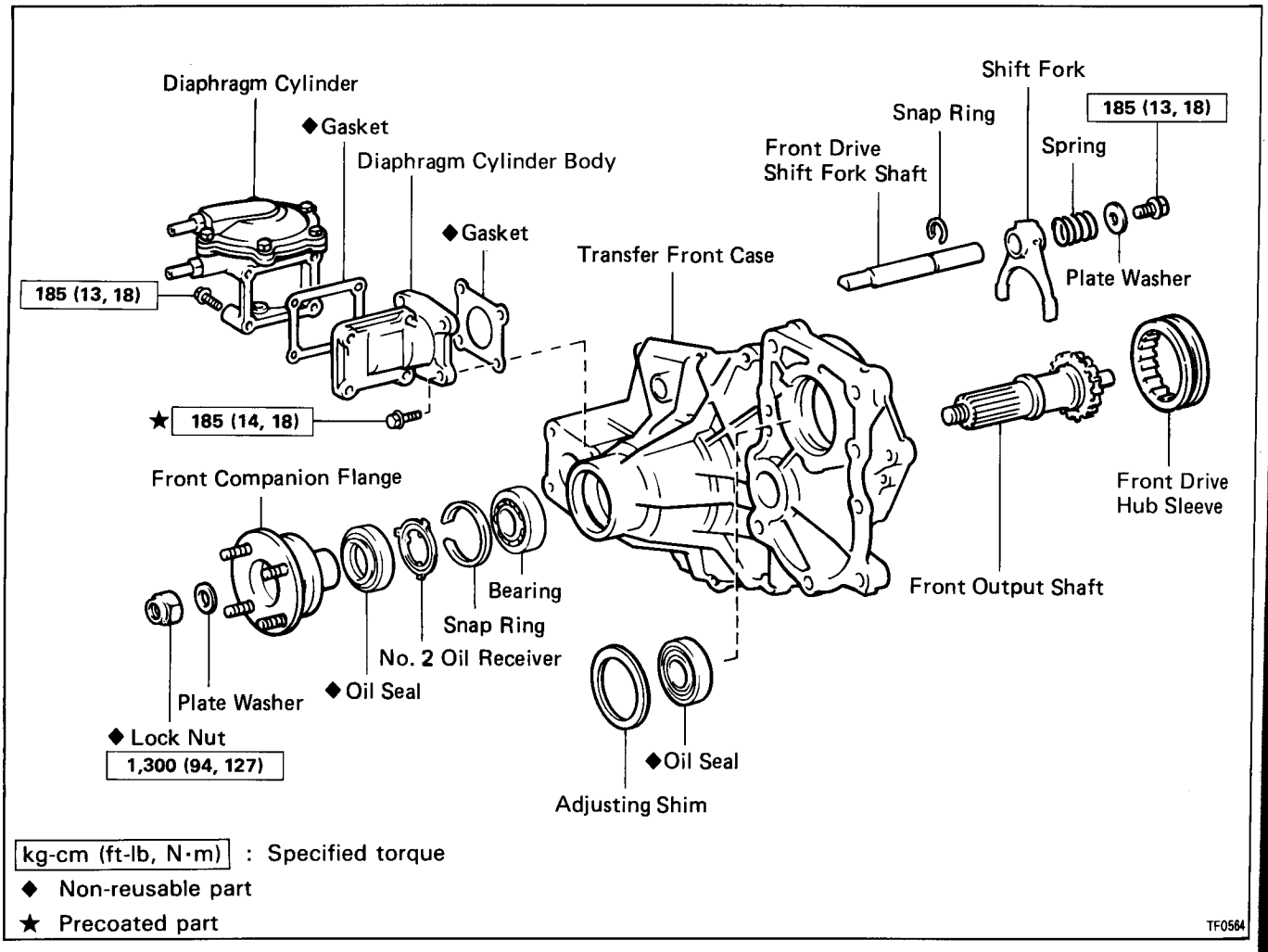
(b) Using SST, tap a new oil seal into the sleeve.

SST 09201-60011

Oil seal depth: 20 mm (0.79 in.)

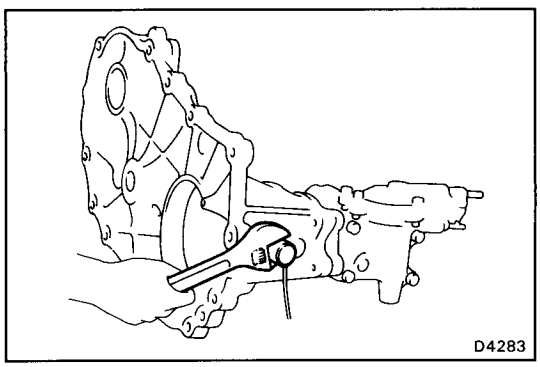
Transfer Front Case

COMPONENTS



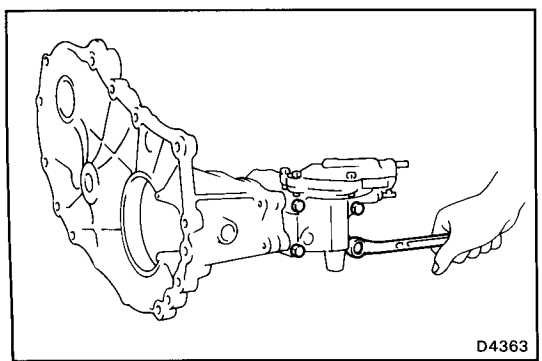
kg-cm (ft-lb, N·m) : Specified torque
◆ Non-reusable part
★ Precoated part

TF0564



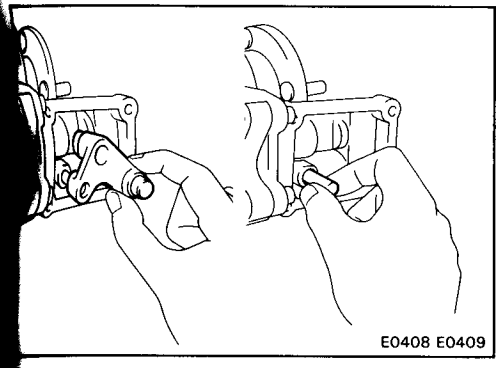
DISASSEMBLY OF TRANSFER FRONT CASE

1. REMOVE 4WD INDICATOR SWITCH

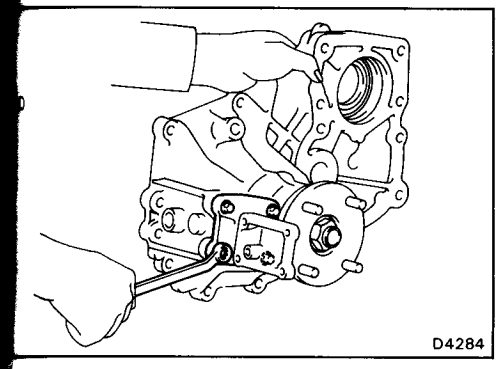


2. [VACUUM SHIFT TYPE] REMOVE DIAPHRAGM CYLINDER ASSEMBLY

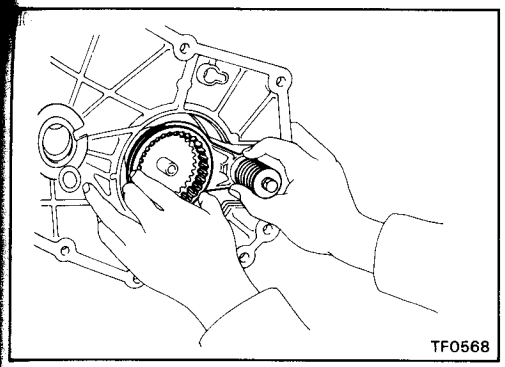
(a) Remove the four bolts, diaphragm cylinder and gasket.


E0408 E0409

(b) Remove the shift link lever and straight pin.

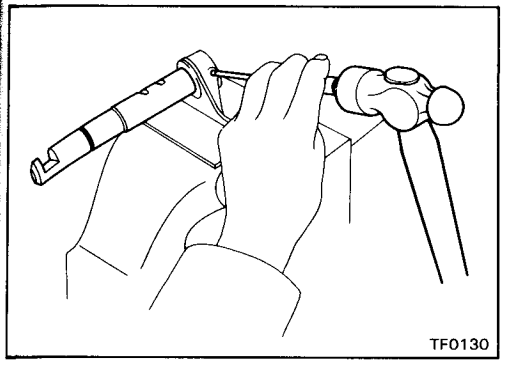

D4284

(c) Remove the four bolts, diaphragm cylinder body and gasket.


TF0568

3. REMOVE FRONT DRIVE HUB SLEEVE

Remove the hub sleeve with front drive shift fork shaft assembly.


TF0130

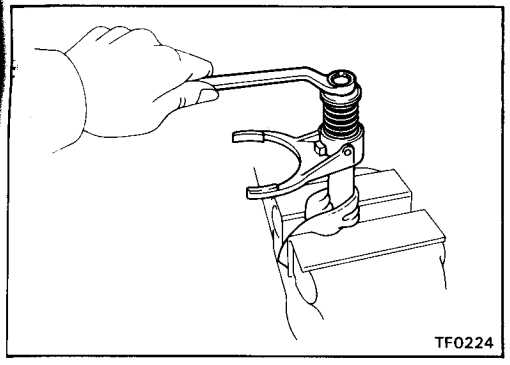
4. REMOVE FRONT DRIVE SHIFT FORK SHAFT

[Direct Shift Type]

(a) Mount the front drive shift fork shaft in a soft jaw vise.

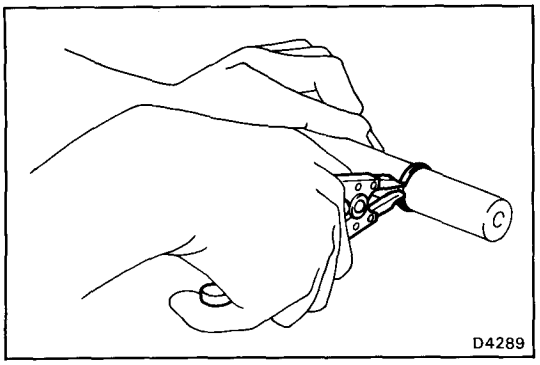
(b) Using a pin punch and hammer, drive out the slotted spring pin.

(c) Remove the shift fork from the shift fork shaft.

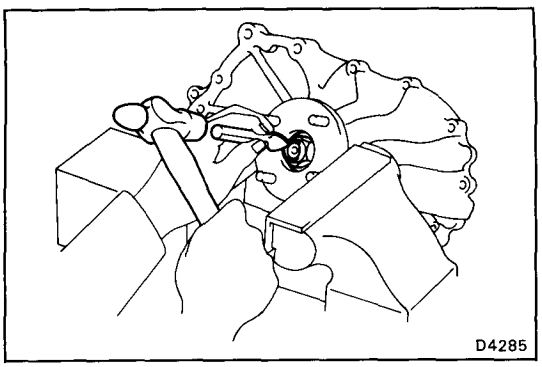

TF0224

[Vacuum Shift Type]

(a) Remove the bolt, plate washer, spring and shift fork from the shift fork shaft.



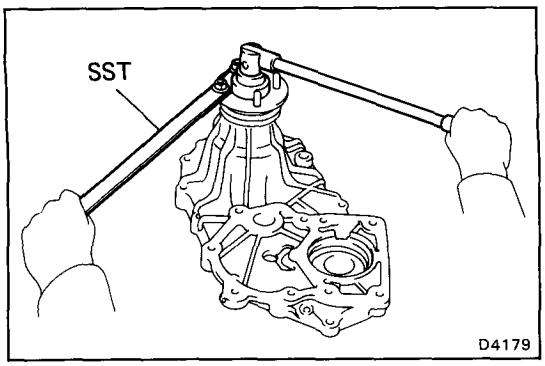
(b) Using snap ring pliers, remove the snap ring.



5. REMOVE FRONT COMPANION FLANGE

(a) Mount the companion flange in a vise.

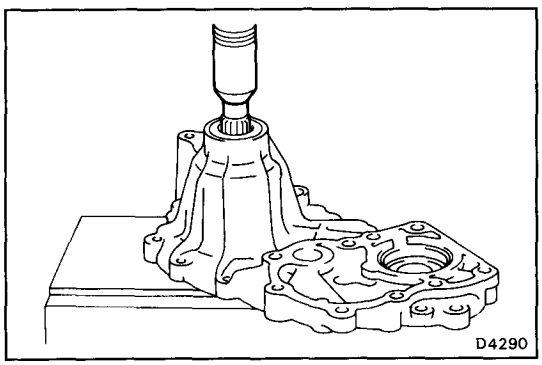
(b) Using a hammer and chisel, loosen the staked part of the nut.



(c) Using SST and two nuts to hold the front companion flange, remove the companion flange lock nut.

SST 09330-00021

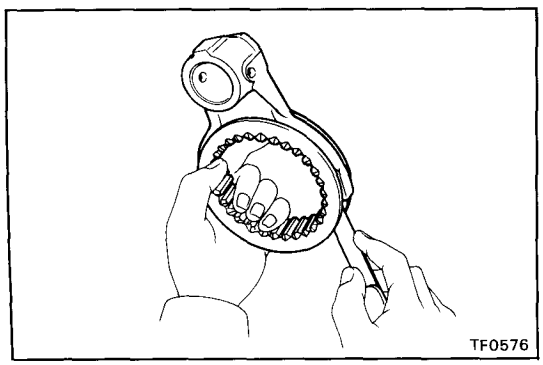
(d) Remove the plate washer and companion flange.



6. REMOVE FRONT OUTPUT SHAFT

Using a press, press out the front output shaft.

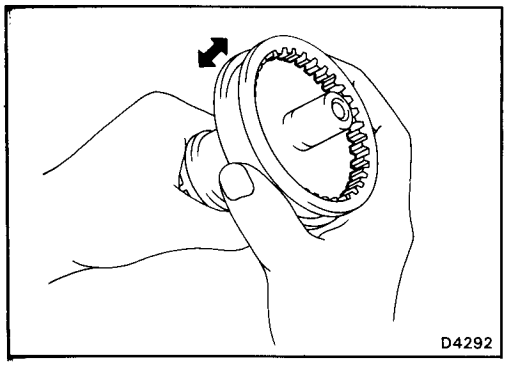
INSPECTION OF TRANSFER FRONT CASE



1. INSPECT CLEARANCE OF SHIFT FORK AND HUB SLEEVE

Using a feeler gauge, measure the clearance between the hub sleeve and shift fork.

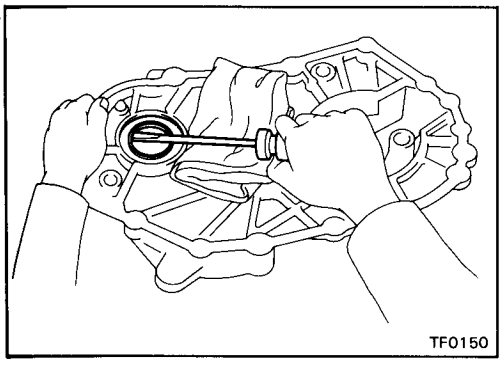
Maximum clearance: 1.0 mm (0.039 in.)



2. INSPECT FRONT DRIVE CLUTCH HUB SLEEVE

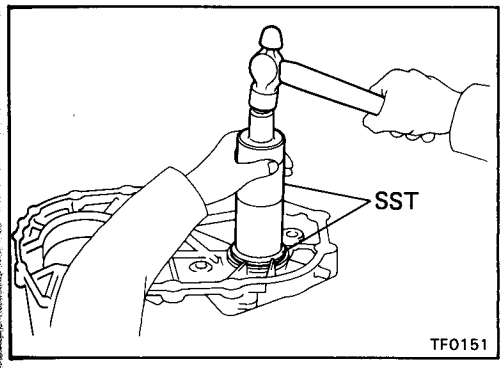
(a) Install the clutch hub sleeve to the front output shaft.

(b) Check that the hub sleeve moves smoothly.



3. IF NECESSARY, REPLACE TRANSMISSION REAR OIL SEAL

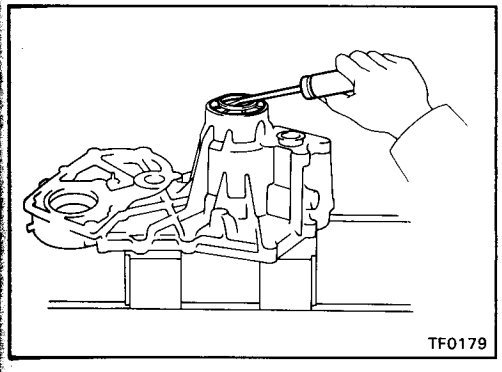
(a) Using a screwdriver, remove the oil seal.



(b) Using SST and a hammer, tap in a new oil seal.

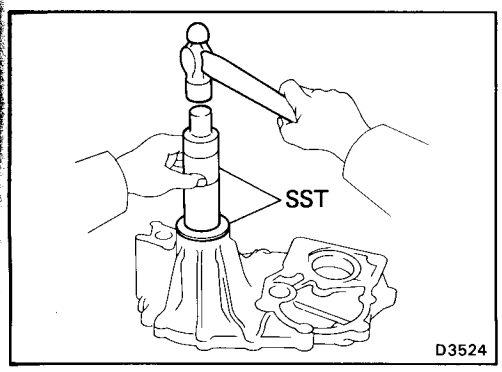
SST 09316-60010 (09316-00010, 09316-00030)

(c) Apply MP grease to the oil seal lip.



4. IF NECESSARY, REPLACE FRONT OUTPUT SHAFT OIL SEAL

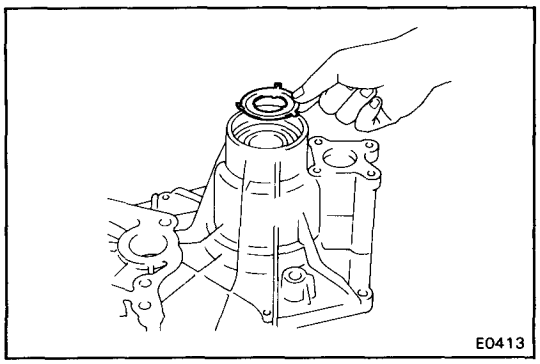
(a) Using a screwdriver, remove the oil seal.



(b) Using SST and a hammer, tap in a new oil seal.

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

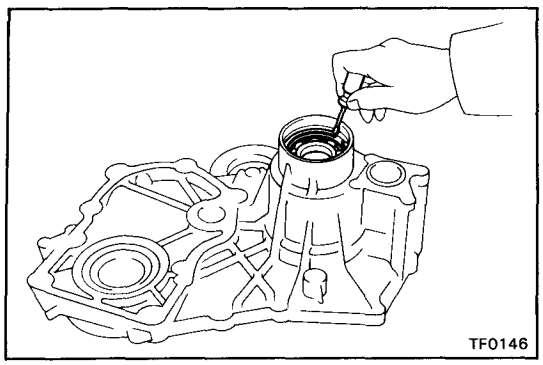
(c) Apply MP grease to the oil seal lip.


E0413

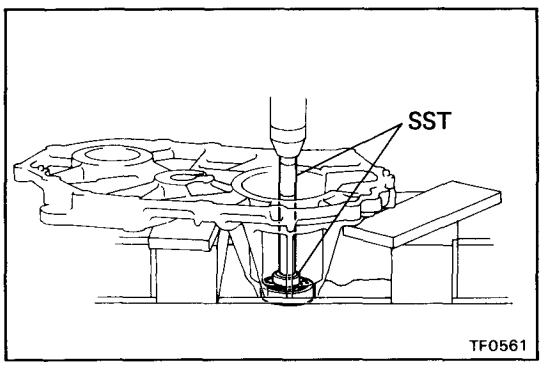
5. IF NECESSARY, REPLACE FRONT OUTPUT SHAFT BEARING

(a) Remove the front output shaft oil seal.

(b) Remove the No.2 oil receiver.

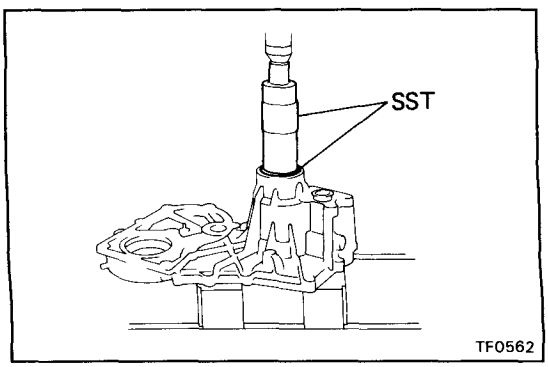

TF0146

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



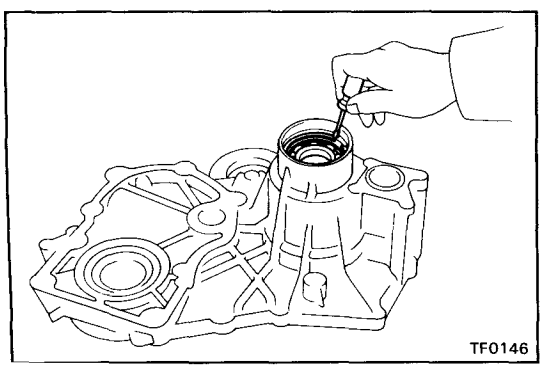
TF0561

(d) Using SST and a press, press out the bearing.
SST 09608-20012 (09608-00040, 09608-03020)

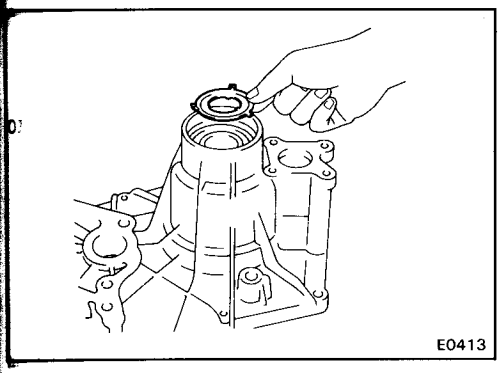


TF0562

(e) Using SST and a press, press in a new bearing.
SST 09316-60010 (09316-00010, 09316-00020)

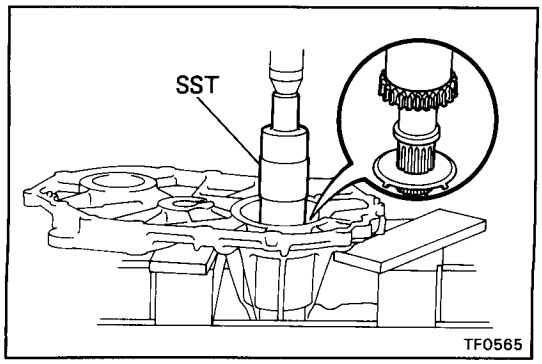

TF0146

(f) Install the snap ring.



(g) Install the No.2 oil receiver.

(h) Install a new front output shaft oil seal.

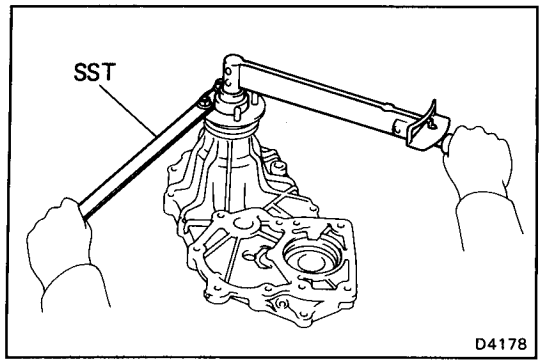


ASSEMBLY OF TRANSFER FRONT CASE

1. INSTALL FRONT OUTPUT SHAFT

Using SST and a press, press in the front output shaft t the transfer front case.

SST 09316-60010 (09316-00010)



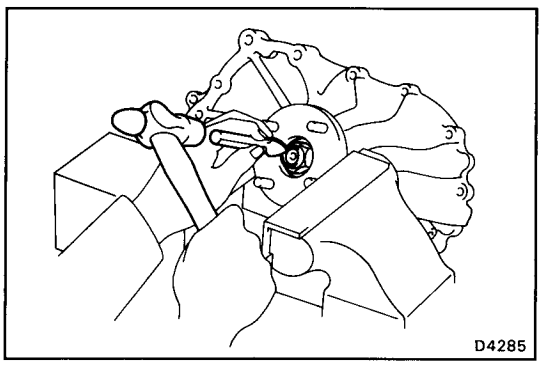
2. INSTALL FRONT COMPANION FLANGE

(a) Install the companion flange and plate washer.

(b) Using SST and two nuts to hold the companion flange install a new companion flange lock nut.

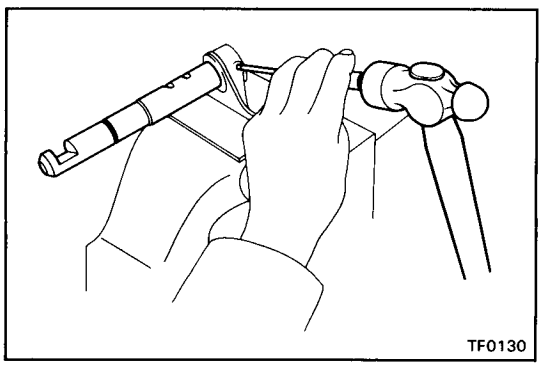
SST 09330-00021

Torque: 1,300 kg-cm (94 ft-lb, 127 N·m)



(c) Mount the companion flange in a vise.

(d) Using a hammer and chisel, stake the companion flange lock nut.



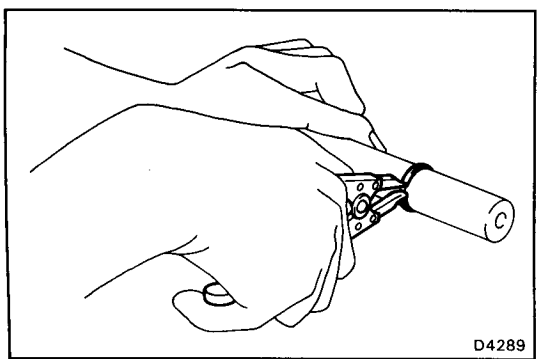
3. INSTALL FRONT DRIVE SHIFT FORK SHAFT

[Direct Shift Type]

(a) Mount the front drive shift fork in a soft jaw vise.

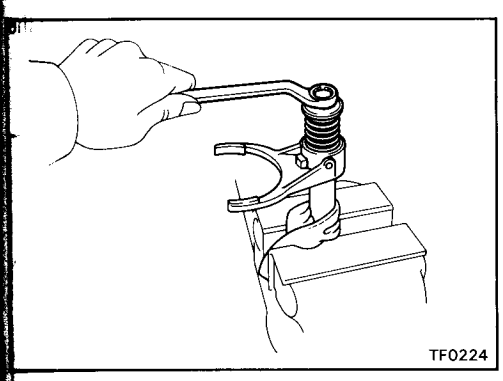
(b) Install the front drive shift fork shaft into shift fork.

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



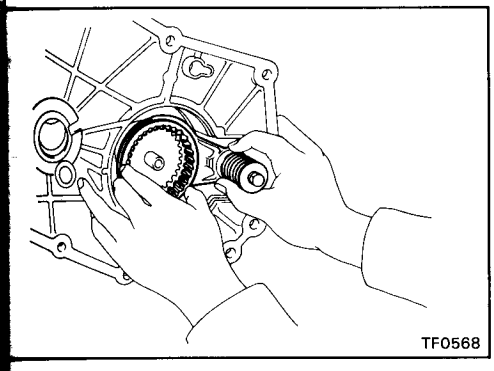
[Vacuum Shift Type]

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


TF0224

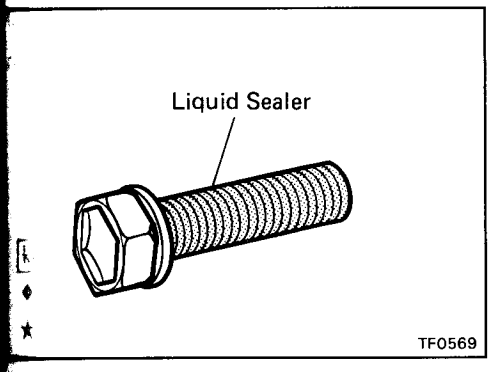
(b) Install the shift fork, spring and plate washer to the shift fork shaft with the bolt.

Torque: 185 kg-cm (13 ft-lb, 18 N·m)


TF0568

4. INSTALL FRONT DRIVE HUB SLEEVE

Install the hub sleeve with front drive shift fork shaft assembly.



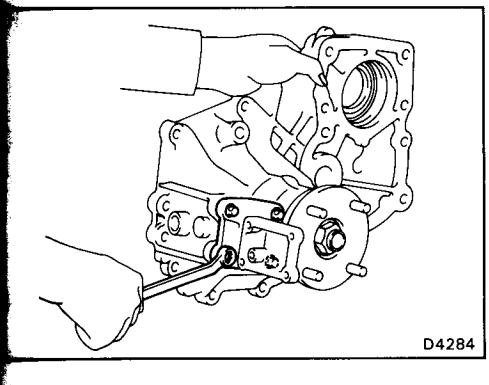
TF0569

5. (VACCUM SHIFT TYPE)
INSTALL DIAPHRAGM CYLINDER ASSEMBLY

(a) Clean the threads of the bolts and case with cleaner.

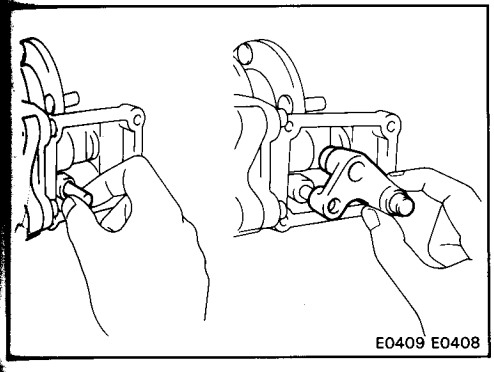
(b) Apply liquid sealer to the bolts threads.

Sealant: Part No.08833-00070, THREE BOND 1324 or equivalent


D4284

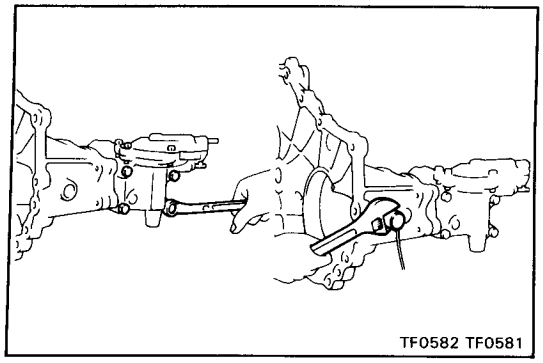
(c) Install a new gasket and the diaphragm cylinder body to the transfer front case with the four bolts.

Torque: 185 kg-cm (13 ft-lb, 18 N·m)


E0409 E0408

(d) Apply MP grease to the shoe and straight pin.

(e) Install the shift link lever and straight pin.


TF0582 TF0581

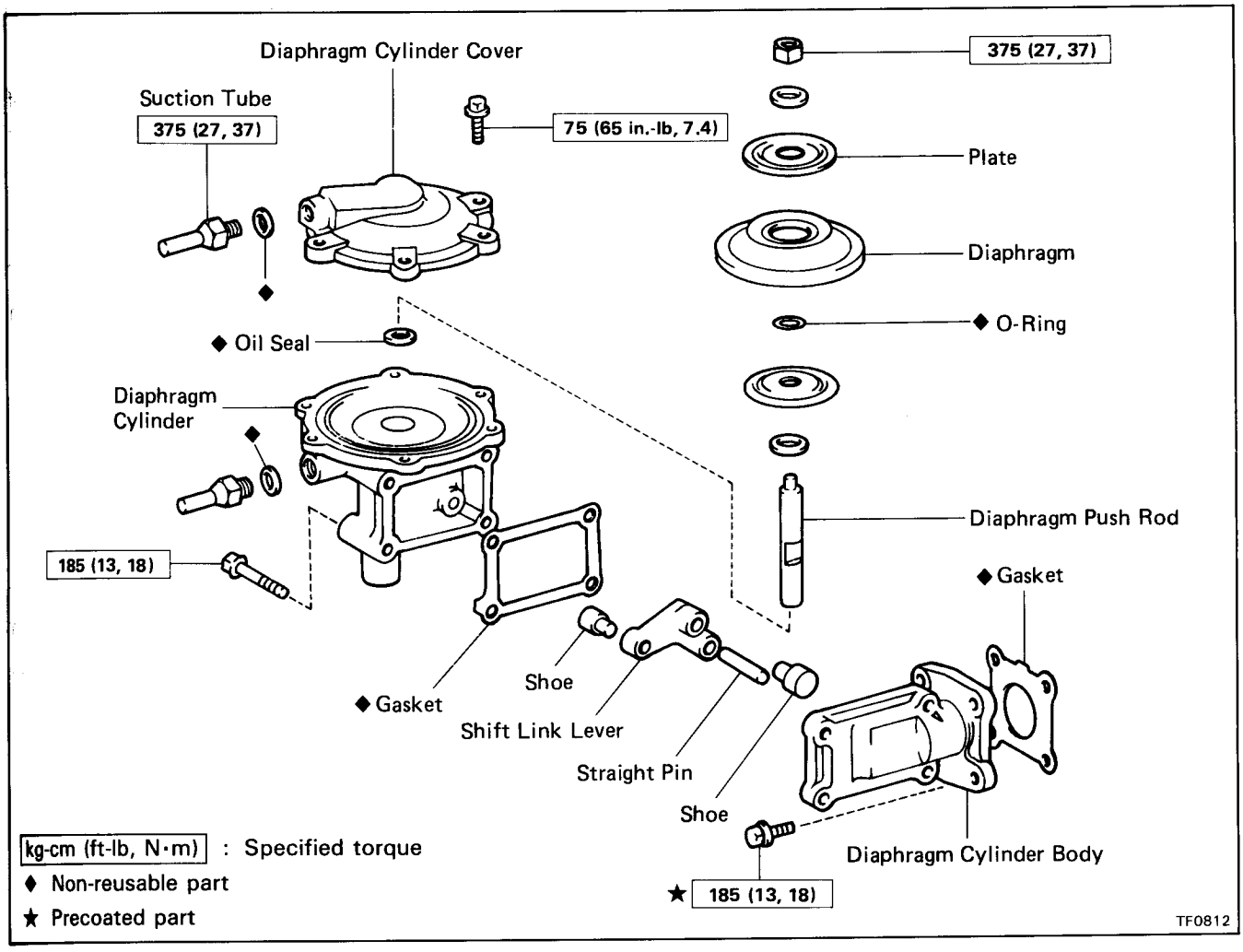
(f) Install a new gasket and the diaphragm cylinder to the diaphragm cylinder body with the four bolts.

Torque: 185 kg-cm (13 ft-lb, 18 N·m)

6. INSTALL 4WD INDICATOR SWITCH

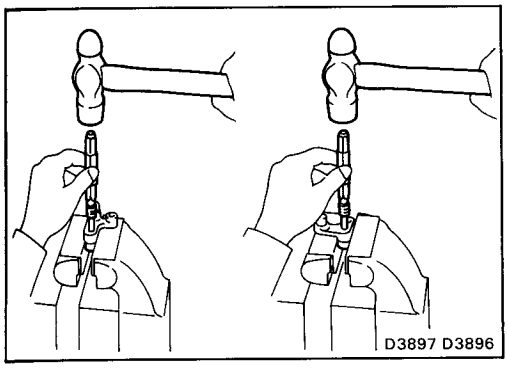
Diaphragm Cylinder

COMPONENTS



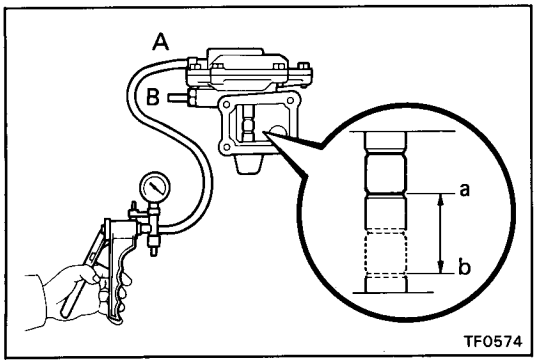
DISASSEMBLY OF DIAPHRAGM CYLINDER

1. **REMOVE DIAPHRAGM CYLINDER ASSEMBLY (See page TF-22)**



2. **REMOVE SHOE FROM SHIFT LINK LEVER**

Using a pin punch and hammer, drive out the two shoes from the shift link lever.



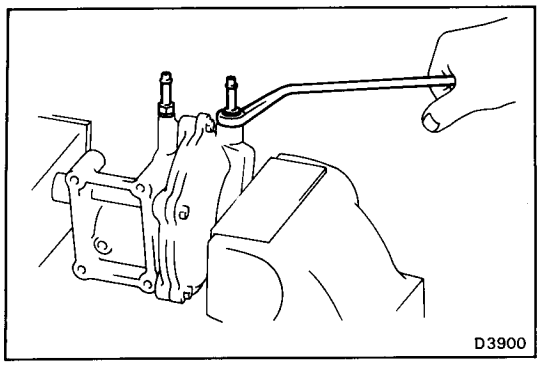
3. INSPECT DIAPHRAGM CYLINDER ASSEMBLY

(a) With at least 400 mmHg (15.75 in.Hg, 53.3 kPa) of vacuum in the port A or B, check that the shaft moves.

(b) Check the stroke between a and b.

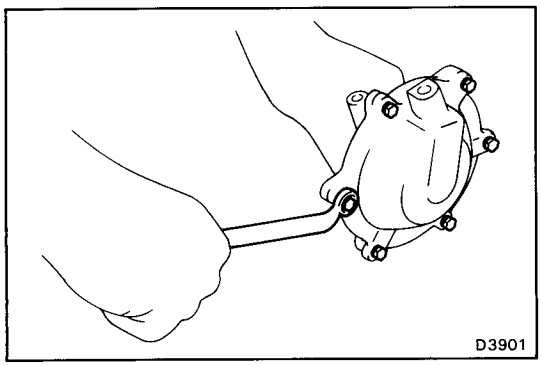
Standard stroke: 21 mm (0.82 in.)

(c) With at least 400 mmHg (15.75 in.Hg, 53.3 kPa) of vacuum in the diaphragm, check that the gauge needle is stable.



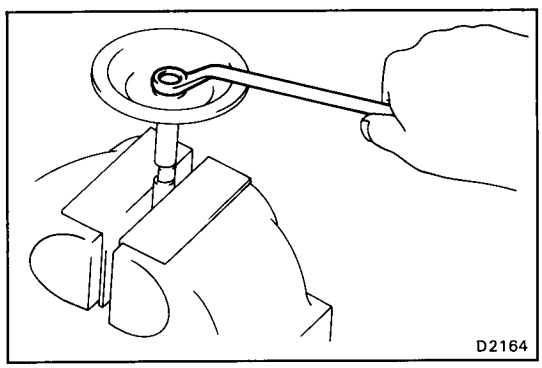
4. REMOVE SUCTION TUBES

Remove the suction tubes and gaskets from the diaphragm cylinder and cover.



5. REMOVE DIAPHRAGM CYLINDER COVER AND PUSH ROD

Remove the six bolts, diaphragm cylinder cover and push rod.



6. REMOVE FOLLOWING PARTS FROM DIAPHRAGM PUSH ROD

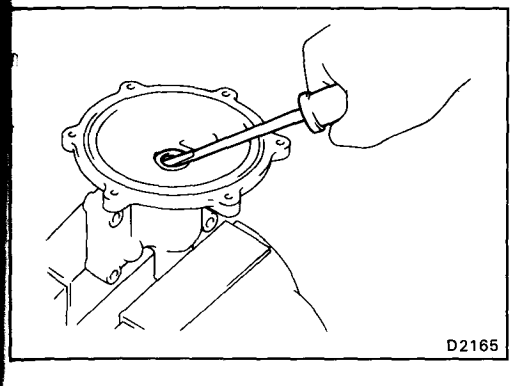
(a) Nut

(b) Two washers

(c) Two plates

(d) Diaphragm

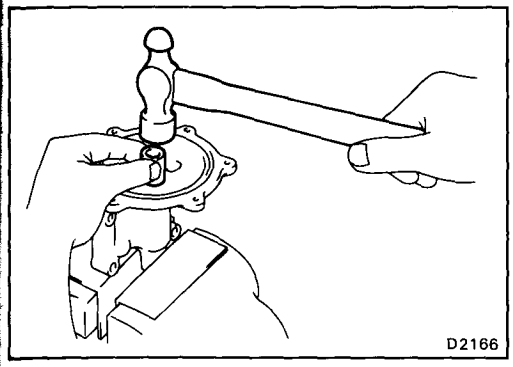
(e) O-ring



INSPECTION AND REPAIR OF DIAPHRAGM CYLINDER

IF NECESSARY, REPLACE OIL SEAL

(a) Using a screwdriver, remove the oil seal.



(b) Using a socket wrench, tap in a new oil seal.

(c) Apply MP grease to the oil seal lip.

ASSEMBLY OF DIAPHRAGM CYLINDER

1. INSTALL FOLLOWING PARTS TO DIAPHRAGM PUSH ROD

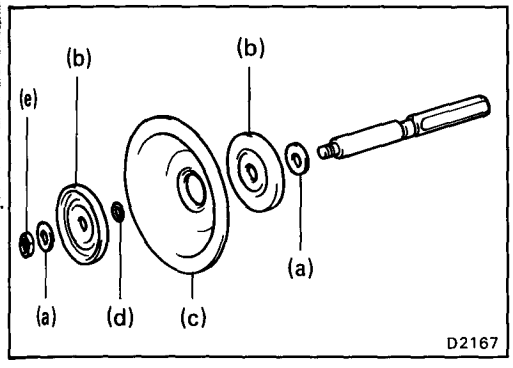
(a) Two washers

(b) Two plates

(c) Diaphragm

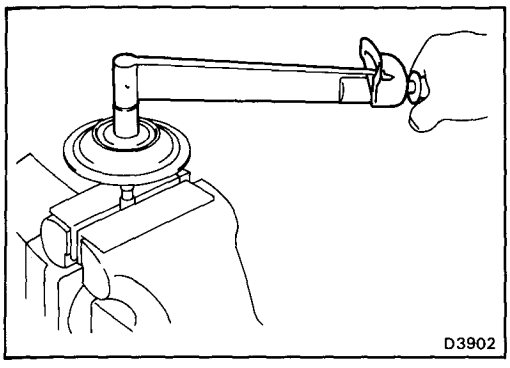
(d) O-ring

(e) Nut



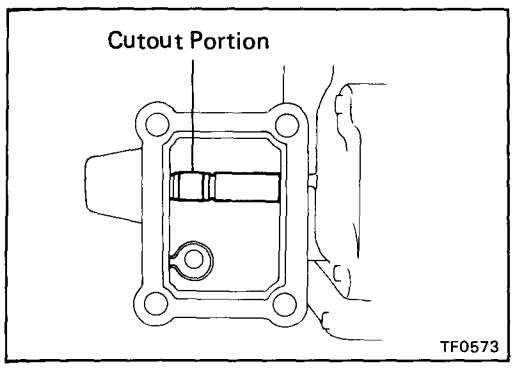
2. TORQUE DIAPHRAGM PUSH ROD NUT

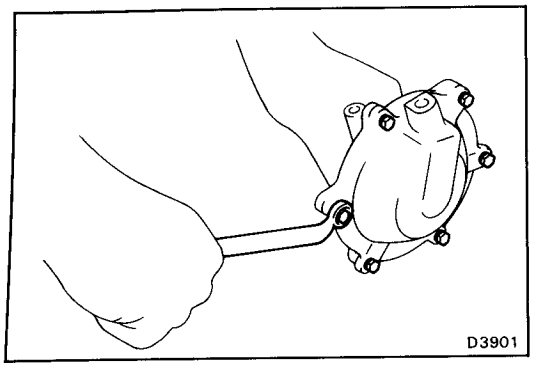
Torque: 375 kg-cm (27 ft-lb, 37 N·m)



3. INSTALL DIAPHRAGM PUSH ROD INTO DIAPHRAGM CYLINDER

Install the cutout portion of the push rod into the open part of the diaphragm cylinder.

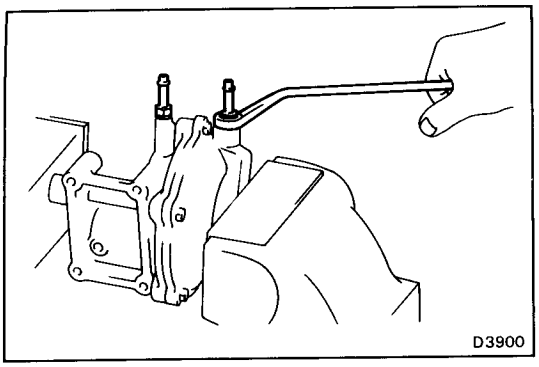




4. INSTALL DIAPHRAGM CYLINDER COVER

Install the diaphragm cylinder cover to the diaphragm cylinder with the six bolts.

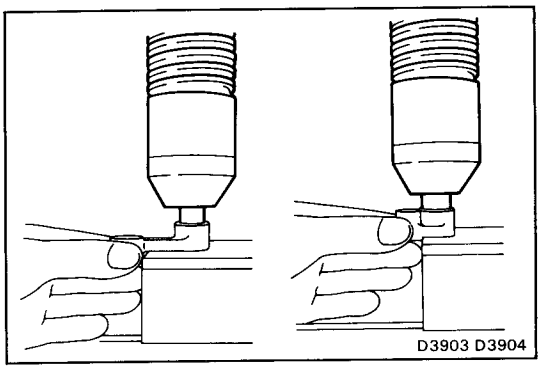
Torque: 75 kg-cm (65 in.-lb, 7.4 N·m)



5. INSTALL SUCTION TUBES

Install the suction tubes with new gaskets.

Torque: 375 kg-cm (27 ft-lb, 37 N·m)



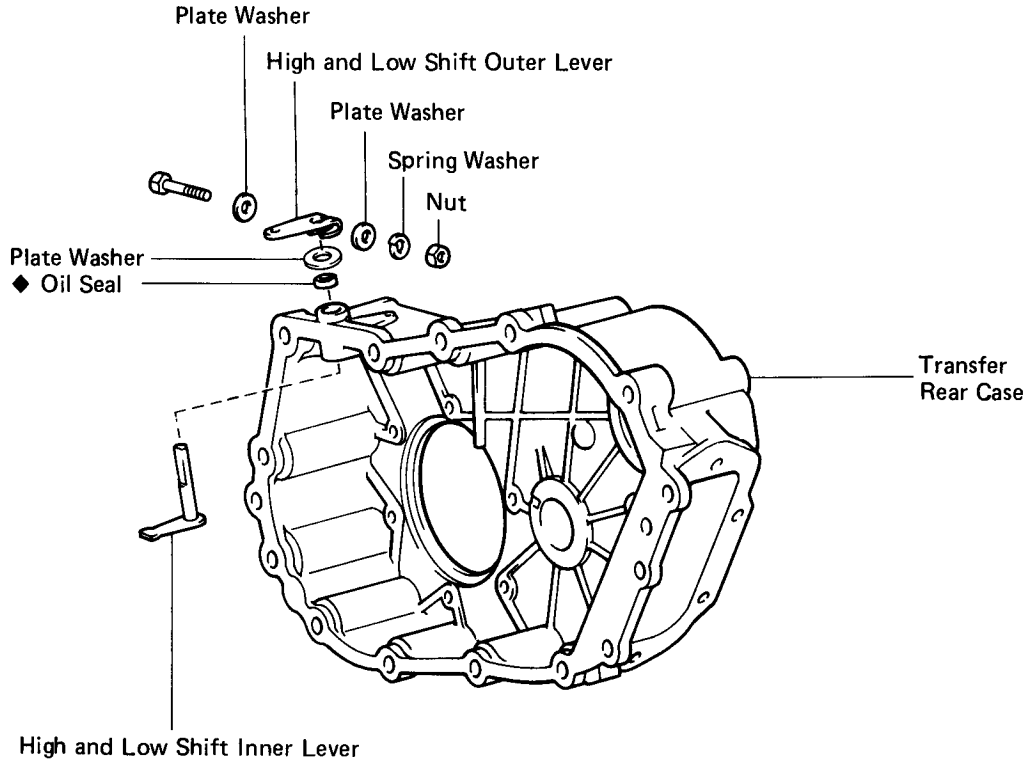
6. INSTALL SHOE TO SHIFT LINK LEVER

Using a press, press in the two shoes to the shift link lever.

7. INSTALL DIAPHRAGM CYLINDER ASSEMBLY
(See page TF-30)

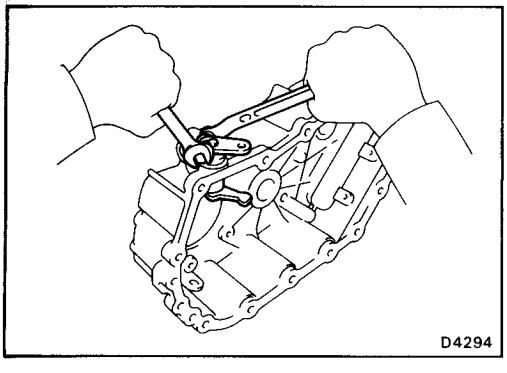
Transfer Rear Case

COMPONENTS



◆ Non-reusable part

TF0813



D4294

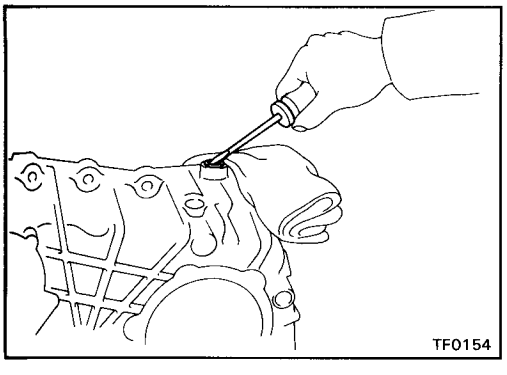
DISASSEMBLY OF TRANSFER REAR CASE

REMOVE OUTER AND INNER LEVERS OF TRANSFER HIGH AND LOW SHIFT

(a) Remove the nut, spring washer, two plate washers and bolt.

(b) Remove the shift outer lever and washer.

(c) Remove the shift inner lever.

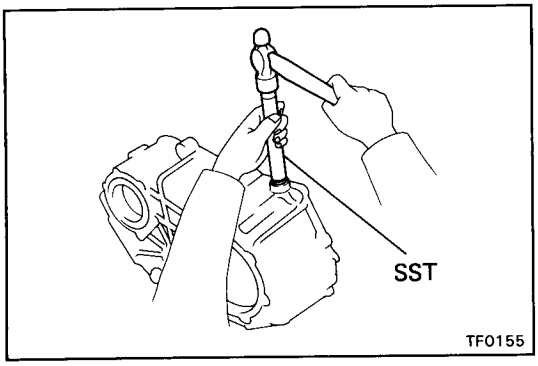


TF0154

INSPECTION AND REPAIR OF TRANSFER REAR CASE

IF NECESSARY, REPLACE HIGH AND LOW SHIFT LEVER SHAFT OIL SEAL

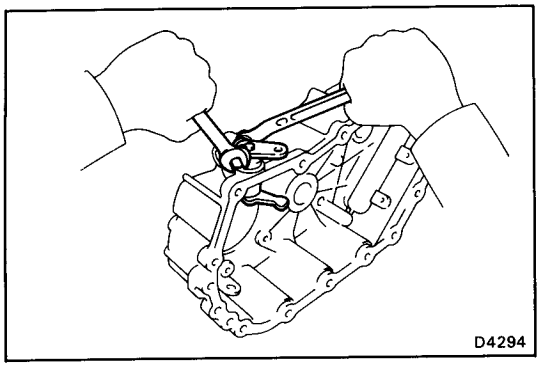
(a) Using a screwdriver, remove the oil seal.



(b) Using SST and a hammer, tap in a new oil seal.

SST 09608-20012 (09608-03020)

(c) Apply MP grease to the oil seal lip.



ASSEMBLY OF TRANSFER REAR CASE

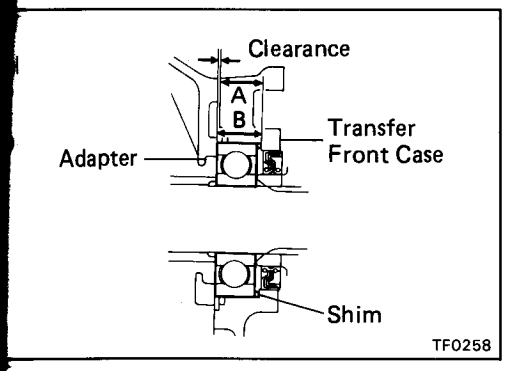
INSTALL OUTER AND INNER LEVERS OF TRANSFER HIGH AND LOW SHIFT

(a) Install the shift inner lever.

(b) Install the washer and shift outer lever.

(c) Install the bolt, two plate washers, spring washer and nut.

HINT: Be carefull not to damage the oil seal lip.



ASSEMBLY OF TRANSFER

(See page TF-4)

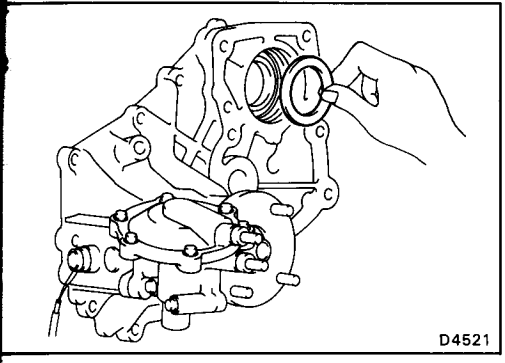
1. INSTALL ADJUSTING SHIM TO TRANSFER FRONT CASE

(a) Measure the difference of A and B and select a shim of a thickness for the gap between the transfer adaptor and front case to be within the standard clearance.

Standard clearance: 0.4 — 0.5 mm (0.016 — 0.020 in.)

Adjust shim thickness mm (in.)
2.28 — 2.32 (0.0898 — 0.0913)
2.38 — 2.42 (0.0937 — 0.0953)
2.48 — 2.52 (0.0976 — 0.0992)

(b) Install the adjusting shim to the transfer front case.

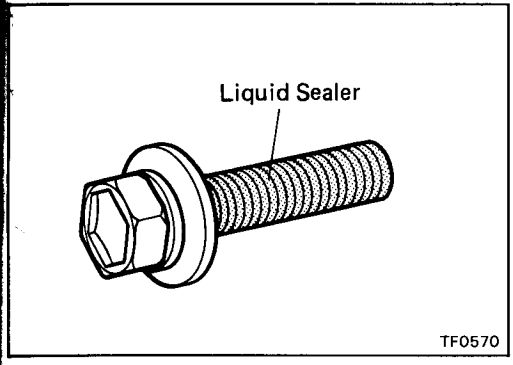


2. INSTALL TRANSFER FRONT CASE

(a) Clean the threads of the bolts and case with cleaning solvent.

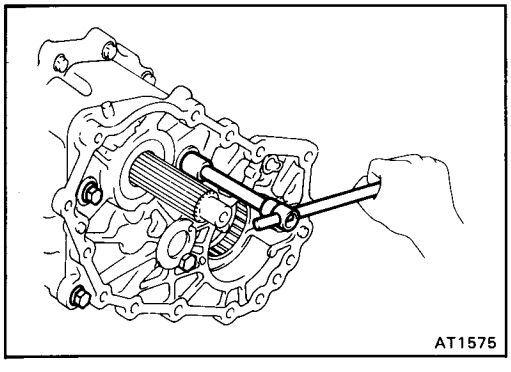
(b) Apply liquid sealer to the bolt threads.

Sealant: Part No.08833-00070, THREE BOND 1324 or equivalent



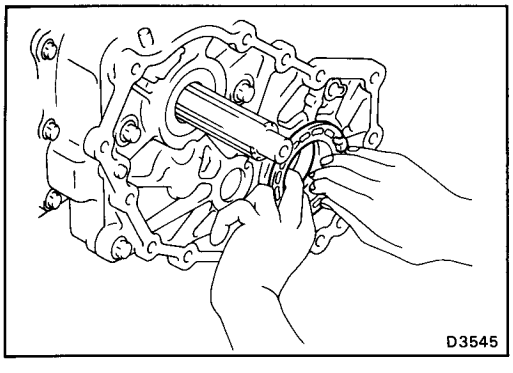
(c) Install a new gasket and transfer front case with the four bolts.

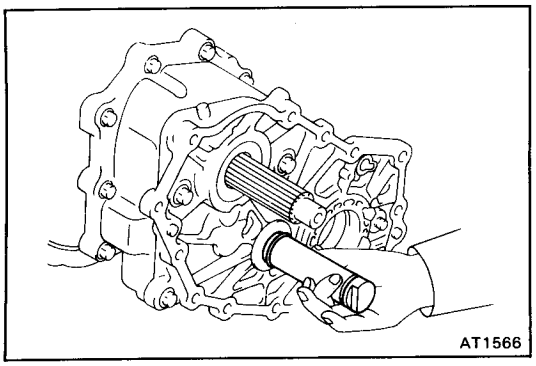
Torque: 650 kg-cm (47 ft-lb, 64 N·m)



3. INSTALL REAR OUTPUT SHAFT FRONT BEARING RETAINER

Install the rear output shaft front bearing retainer.

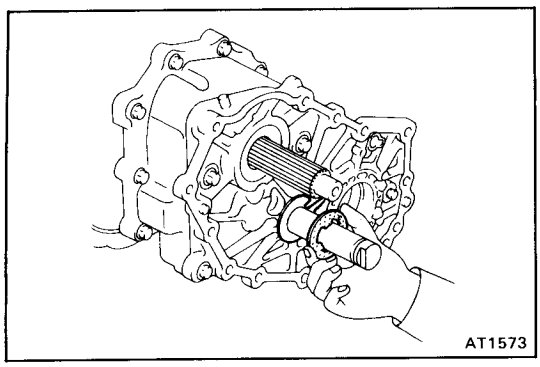




4. INSTALL IDLER GEAR SHAFT AND IDLER GEAR

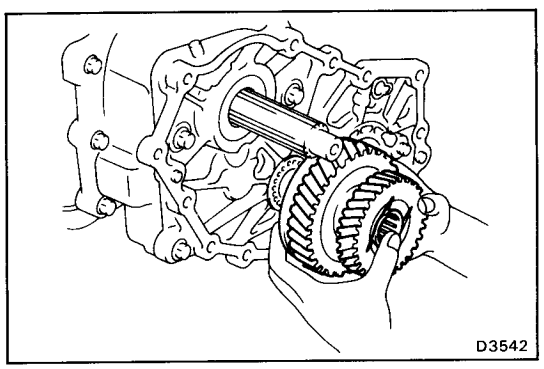
(a) Apply gear oil to a new O-ring and install it to the idler gear shaft front side groove.

(b) Install the idler gear shaft to the transfer front case.



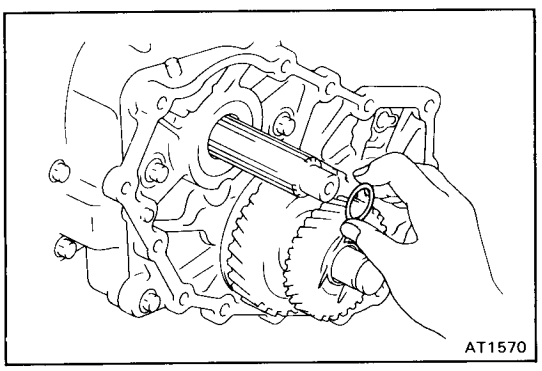
(c) Install the idler gear thrust washer.

HINT: Be sure that the protruding part of the washer fits in the case groove.



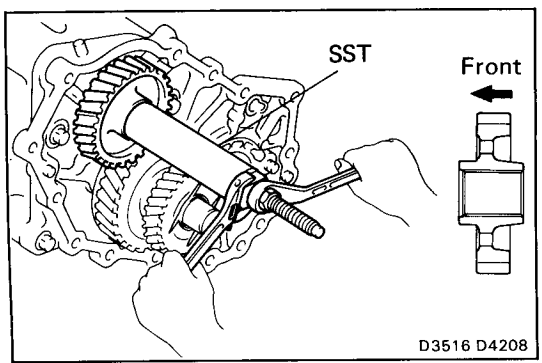
(d) Install the assembled idler gear, bearings and spacer to the idler gear shaft.

(e) Apply gear oil to a new O-ring and install it to the idler gear shaft rear side groove.



5. INSTALL O-RING TO TRANSMISSION OUTPUT SHAFT

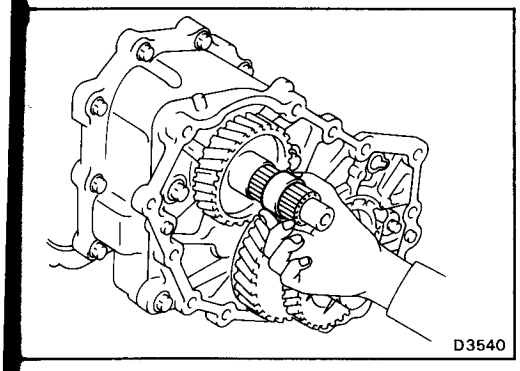
Apply MP grease to a new O-ring and install it to the transmission output shaft.



6. INSTALL TRANSFER INPUT GEAR

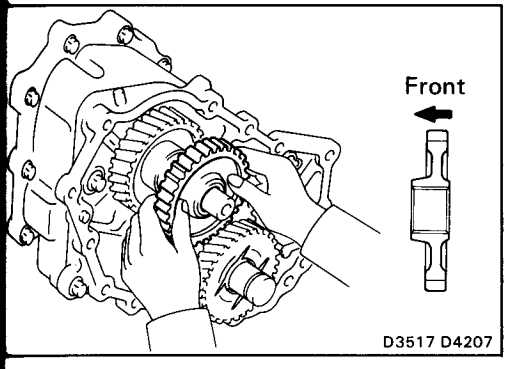
Using SST, install the transfer input gear.

SST 09309-36033


D3540

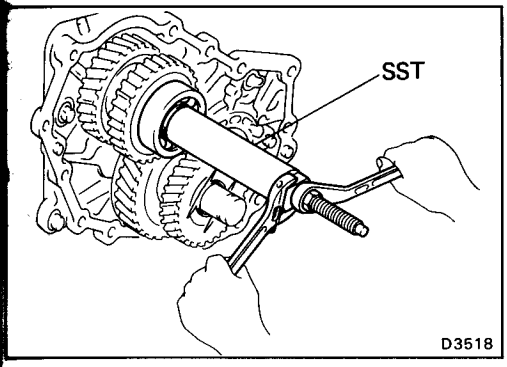
7. INSTALL POWER TAKE-OFF DRIVE GEAR

(a) Install the spacer to the transmission output shaft.



D3517 D4207

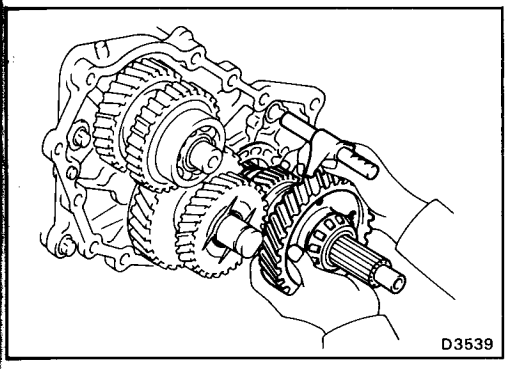
(b) Install the power take-off drive gear to the transmission output shaft.



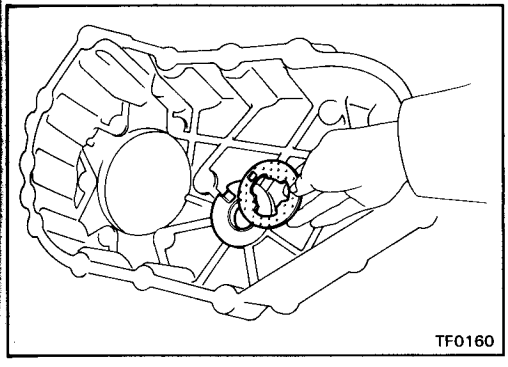
D3518

(c) Using SST, install the transfer input gear bearing.

SST 09309-36033


D3539

8. INSTALL REAR OUTPUT SHAFT ASSEMBLY WITH HIGH AND LOW SHIFT FORK SHAFT ASSEMBLY

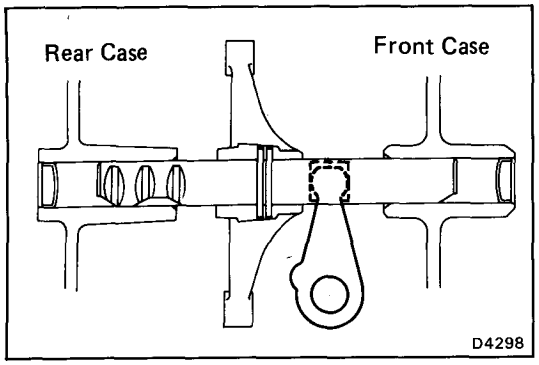

TF0160

9. INSTALL TRANSFER REAR CASE

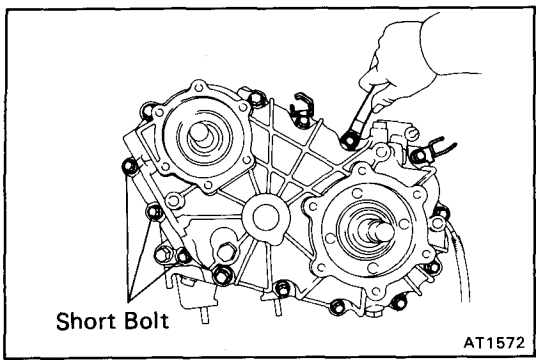
(a) Using MP grease, stick the thrust washer to the transfer rear case.

HINT: Be sure that the protruding part of the washer fits in the case groove.

(b) Place a new gasket on the front case.

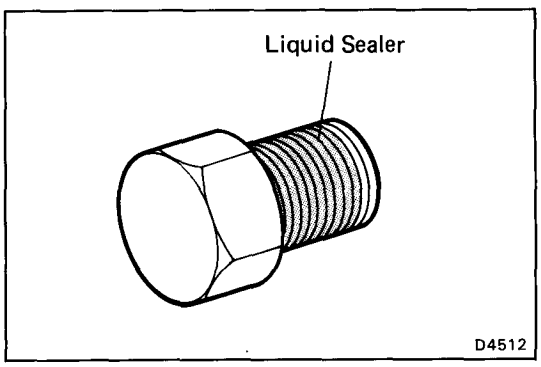


(c) While aligning the cutout of the shift fork shaft and shift inner lever, install the transfer rear case.



(d) Install and torque the fourteen bolts.

Torque:
17 mm head bolt 650 kg-cm (47 ft-lb, 64 N·m)
14 mm head bolt 400 kg-cm (29 ft-lb, 39 N·m)

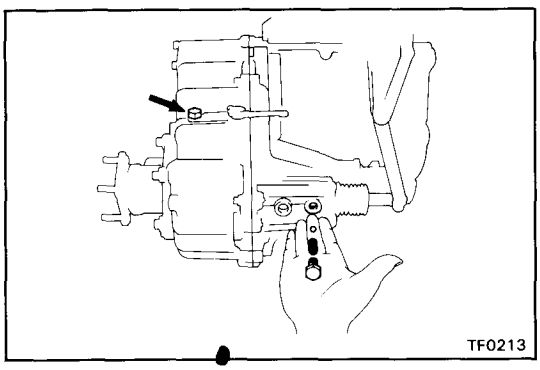


10. INSTALL LOCKING BALLS, SPRINGS AND SHIFT PLUGS

(a) Clean the threads of the plug and case with cleaning solvent.

(b) Apply liquid sealer to the plug threads.

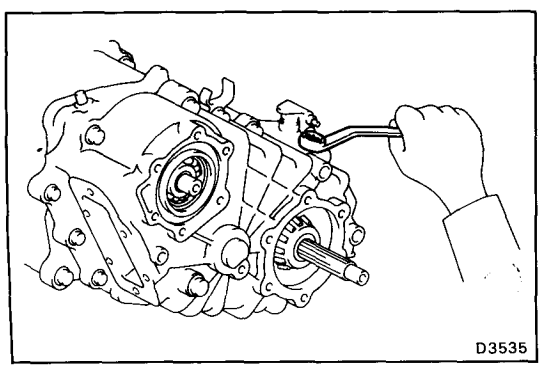
Sealant: Part No.08833-00070, THREE BOND 1324 or equivalent



[Direct Shift Type]

Install the locking balls and springs, and torque the plugs

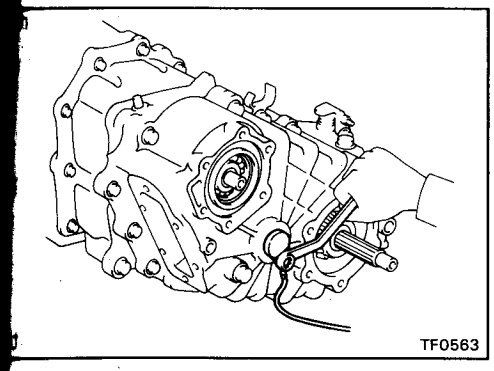
Torque: 450 kg-cm (33 ft-lb, 44 N·m)



[Vacuum Shift Type]

Install the locking ball and spring, and torque the plug

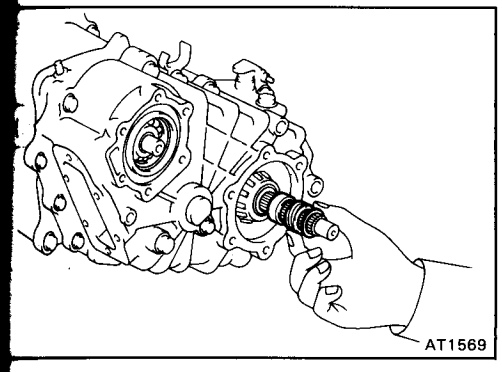
Torque: 450 kg-cm (33 ft-lb, 44 N·m)


TF0563

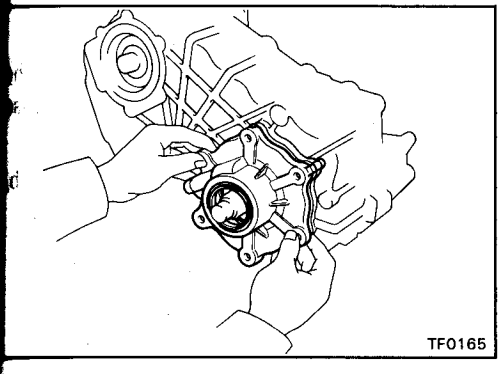
11. INSTALL IDLER GEAR SHAFT LOCK PLATE

Install the lock plate and bolt. Torque the bolt.

Torque: 210 kg-cm (15 ft-lb, 21 N·m)


AT1569

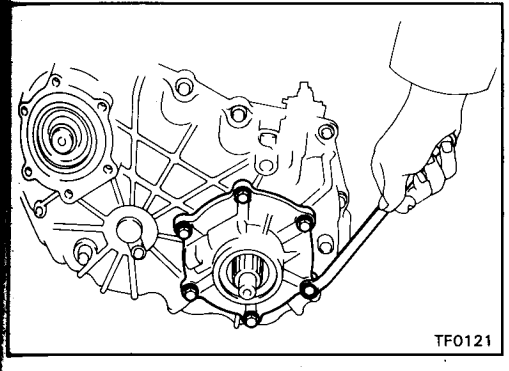
12. INSTALL SPACER, SPEEDOMETER DRIVE GEAR AND WASHER


TF0165

13. ADJUST REAR OUTPUT SHAFT BEARINGS PRELOAD

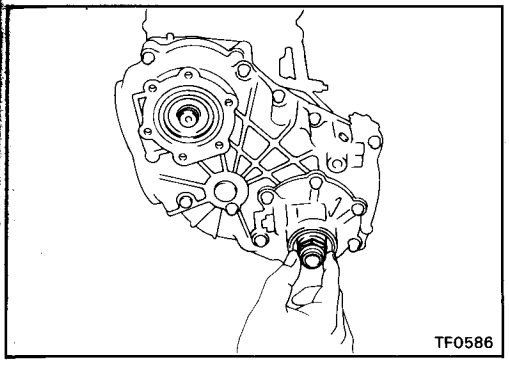
(a) Align the rib with the transfer rear case.

(b) Install the rear bearing retainer.


TF0121

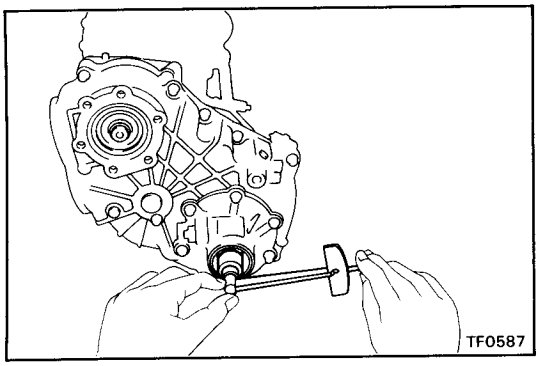
(c) Install and torque the six bolts.

Torque: 350 kg-cm (25 ft-lb, 34 N·m)


TF0586

(d) Temporarily install a new rear companion flange lock nut.

(e) Shift the outer lever of the transfer high and low shift lever to N position.



(f) Using a torque meter, measure the preload of the rear output shaft bearings.

Torque: (at starting)

New bearing	**15 — 24.7 kg-cm (13.0 — 21.4 in.-lb, 1.5 — 2.4 N·m)**
Reused bearing	**7 — 12 kg-cm (6.1 — 10.4 in.-lb, 0.7 — 1.2 N·m)**

If the preload is not within specification, remove the outer race of the rear output shaft rear bearing with SST.

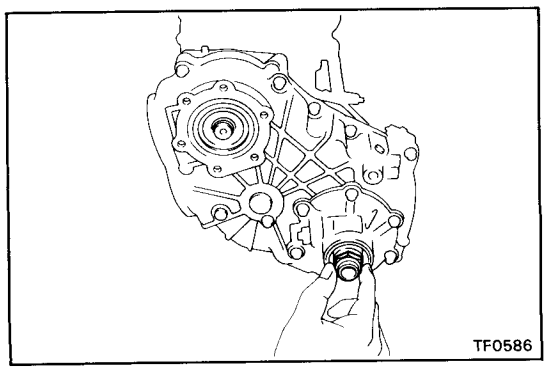
SST 09514-35011

Reselect an adjusting shim.

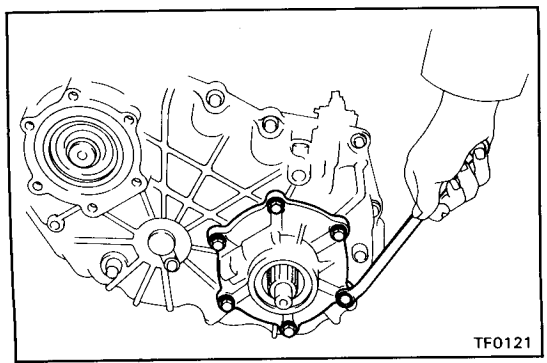
Mark	Thickness mm(in.)	Mark	Thickness mm(in.)
0	0.15 (0.0059)	10	1.00 (0.0394)
4	0.40 (0.0157)	11	1.10 (0.0433)
5	0.50 (0.0197)	12	1.20 (0.0472)
6	0.60 (0.0236)	13	1.30 (0.0512)
7	0.70 (0.0276)	14	1.40 (0.0551)
8	0.80 (0.0315)	15	1.50 (0.0591)
9	0.90 (0.0354)		

HINT:

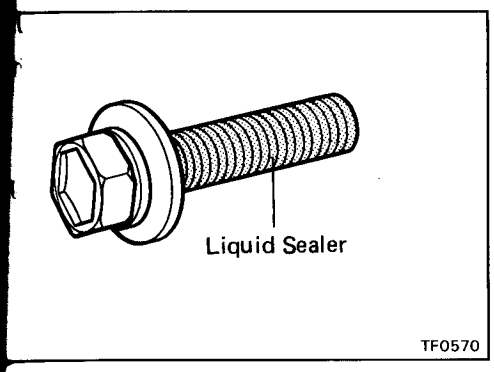
- If the preload is more than specification decrease the thickness of the shim, if less than specification, increase the thickness of shim.
- The preload will change about 10.0 kg-cm (8.7 in.-lb, 1.0 N·m) with each shim thickness.



(g) Remove the rear companion flange lock nut.



14. REMOVE REAR BEARING RETAINER

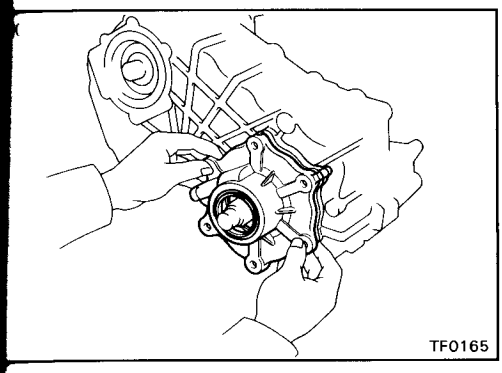


15. INSTALL REAR BEARING RETAINER

(a) Clean the threads of the bolts and case with cleaner.

(b) Apply liquid sealer to the bolts threads.

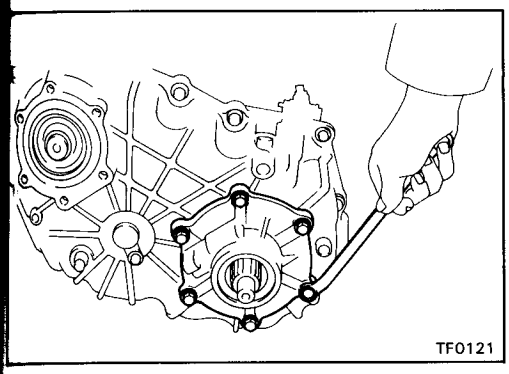
Sealant: Part No.08833-00070, THREE BOND 1324 or equivalent



(c) Place a new gasket on the rear case.

(d) Align the rib with the transfer rear case.

(e) Install the rear bearing retainer.



(f) Install and torque the six bolts.

Torque: 350 kg-cm (25 ft-lb, 34 N·m)

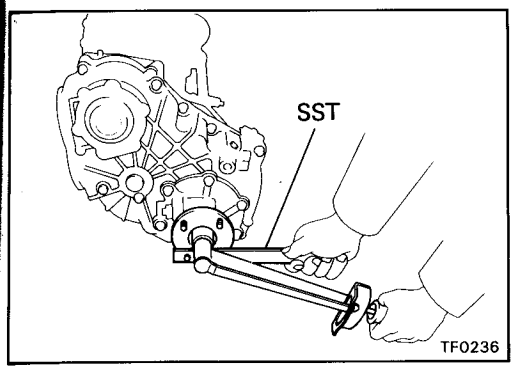
16. INSTALL REAR COMPANION FLANGE

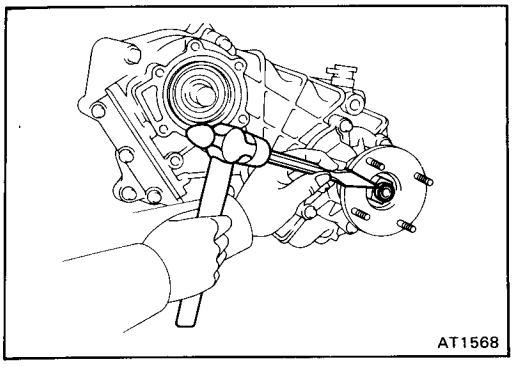
(a) Install the companion flange and plate washer.

(b) Using SST and two nuts to hold the companion flange, install a new companion flange lock nut.

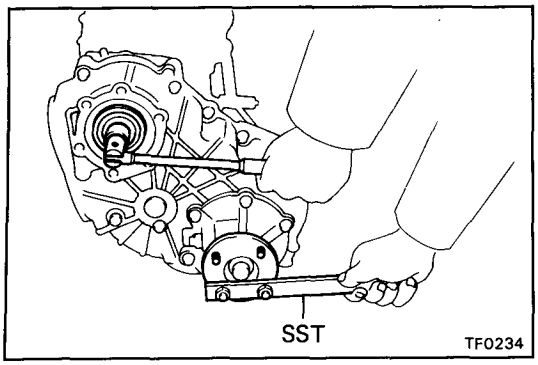
SST 09330-00021

Torque: 1,300 kg-cm (94 ft-lb, 127 N·m)





(c) Using a hammer and chisel, stake the companion flange lock nut.



17. INSTALL TRANSMISSION OUTPUT SHAFT LOCK NUT

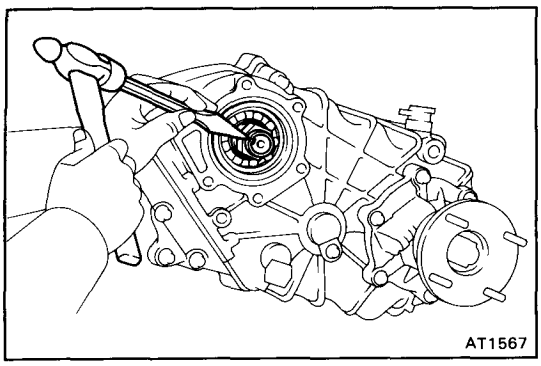
(a) Shift the outer lever of the transfer high and low shift lever to H2 or L4 position.

(b) Install the plate washer.

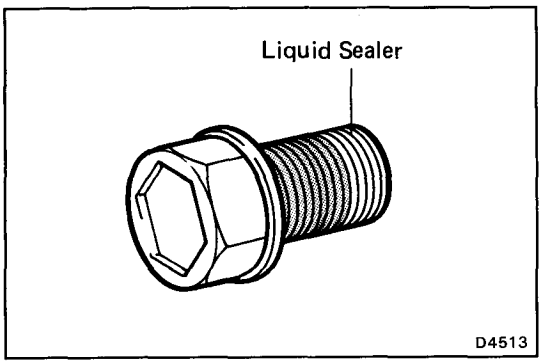
(c) Using SST and two nuts to hold the companion flange, install a new transmission output shaft lock nut.

SST 09330-00021

Torque: 1,300 kg-cm (94 ft-lb, 127 N·m)



(d) Using a hammer and chisel, stake the transmission output shaft lock nut.

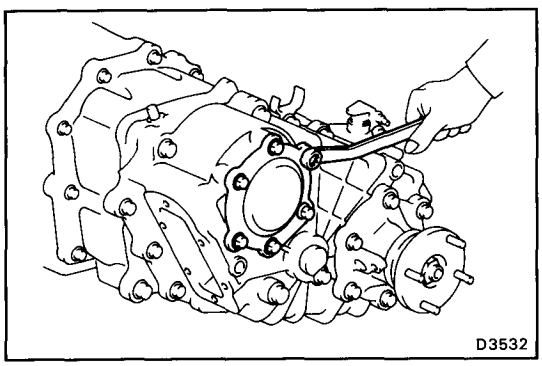


18. INSTALL TRANSFER NO.2 CASE COVER

(a) Clean the threads of the bolts and case with cleaning solvent.

(b) Apply liquid sealer to the bolt threads.

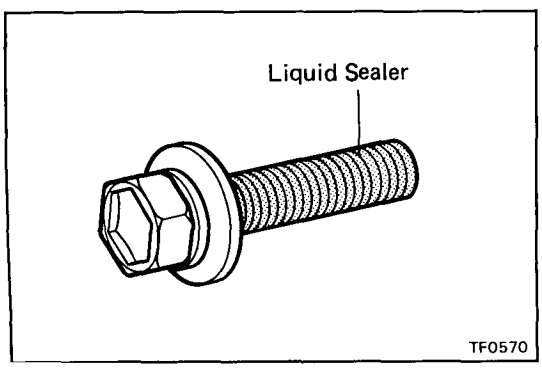
Sealant: Part No.08833-00070, THREE BOND 1324 or equivalent



(c) Install a new gasket and the transfer No.2 case cover with the six bolts.

(d) Torque the bolts.

Torque: 155 kg-cm (11 ft-lb, 15 N·m)

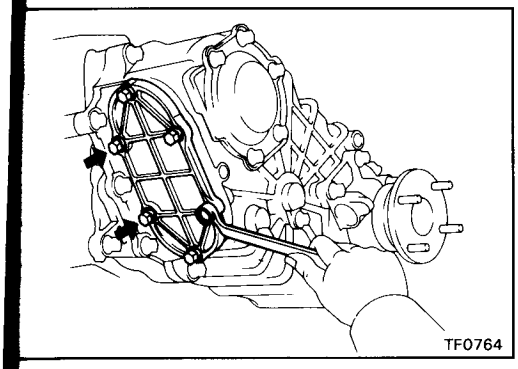


19. INSTALL POWER TAKE-OFF COVER

(a) Clean the threads of the two bolts and case with cleaning solvent.

(b) Apply liquid sealer to the two bolts threads.

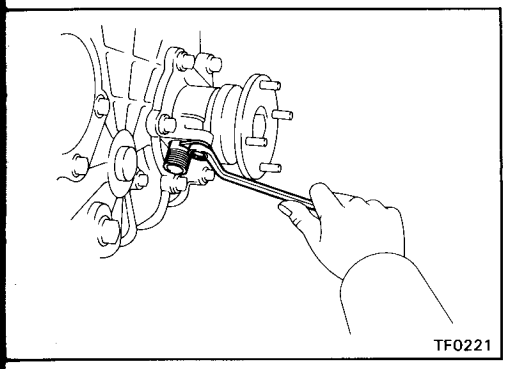
Sealant: Part No.08833-00070, THREE BOND 1324 or equivalent


TF0764

(c) Install a new gasket and the power take-off cover with the two sealer coated bolts indicated by arrows and four bolts as shown.

Torque:

Sealer coated bolts	**170 kg-cm (12 ft-lb, 17 N·m)**
Other bolts	**195 kg-cm (14 ft-lb, 19 N·m)**


TF0221

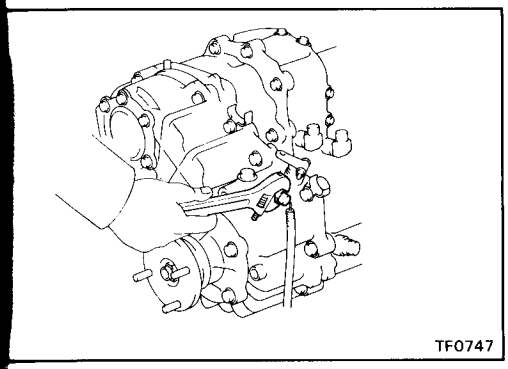
20. INSTALL SPEEDOMETER DRIVEN GEAR

(a) Apply gear oil to a new O-ring.

(b) Install the O-ring to the speedometer driven gear.

(c) Install the speedometer driven gear with lock plate and bolt.

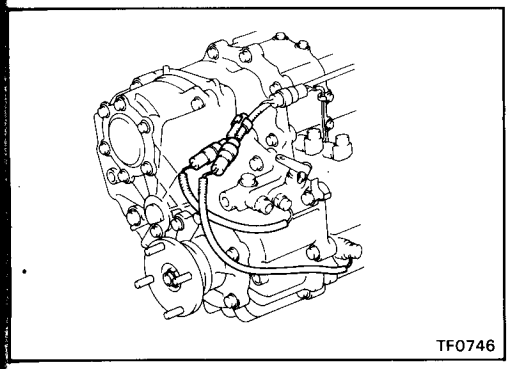
Torque: 130 kg-cm (9 ft-lb, 13 N·m)


TF0747

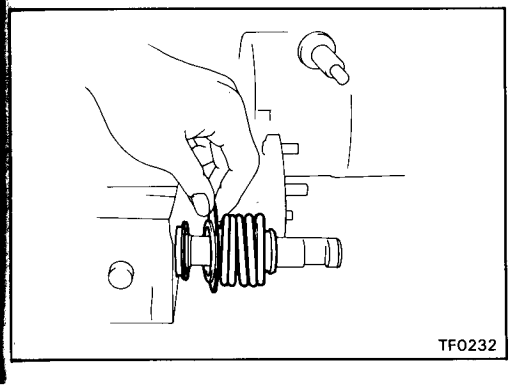
21. INSTALL TRANSFER L4 POSITION SWITCH

(a) Install the transfer L4 position switch.

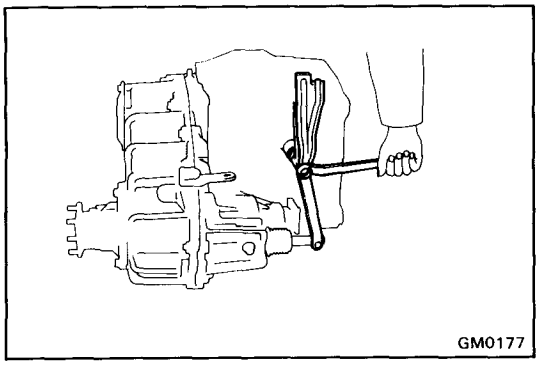
Torque: 250 kg-cm (18 ft-lb, 25 N·m)


TF0746

(b) Connect the two connectors.


TF0232

22. (Direct Shift Type)
INSTALL DUST BOOT



23. (Direct Shift Type)
INSTALL TRANSFER FRONT DRIVE SHIFT LEVER