AUTOMATIC TRANSAXLE ASSY (U151E/U151F)

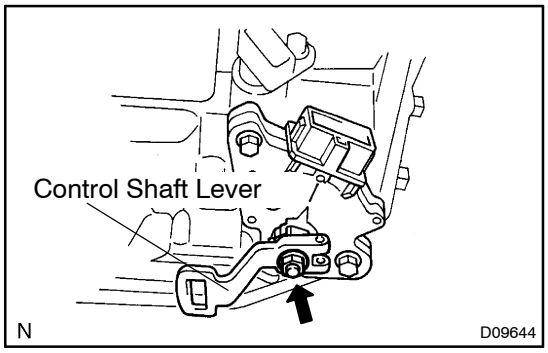
4010K–01

OVERHAUL

1. REMOVE SPEEDOMETER DRIVEN HOLE (ATM) COVER SUB–ASSY

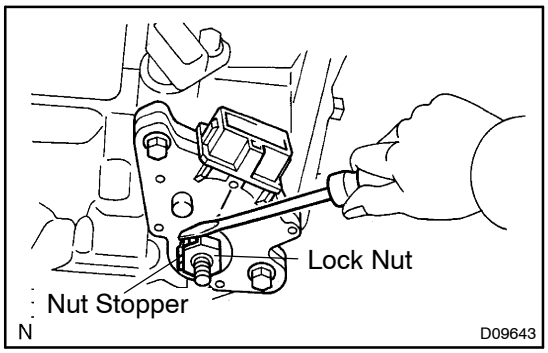
(a) Remove the bolt and speedometer driven hole cover sub–assy from the transaxle assy.

(b) Remove the O–ring from the speedometer driven hole cover.

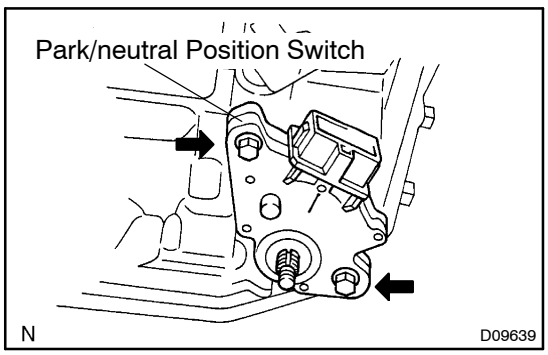


2. REMOVE PARK/NEUTRAL POSITION SWITCH ASSY

(a) Remove the nut, washer and control shaft lever.



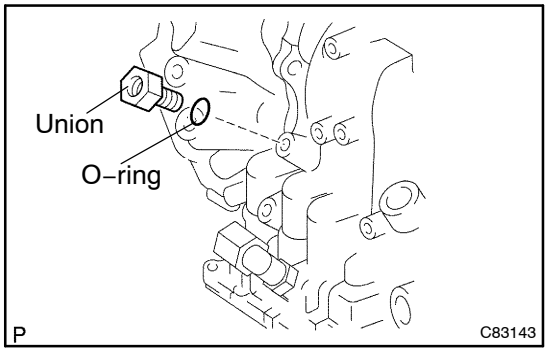
(b) Using a screwdriver, unstake the nut stopper, and remove the lock nut and nut stopper.



(c) Remove the 2 bolts and pull out the park/neutral position switch.

3. REMOVE BREATHER PLUG HOSE

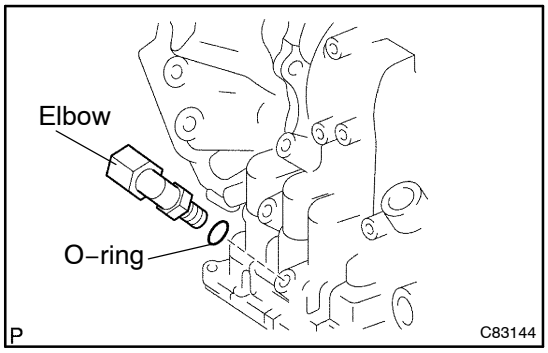
(a) Remove the breather plug hose from the transaxle case.



4. REMOVE OIL COOLER TUBE UNION (INLET OIL COOLER UNION)

(a) Remove the union.

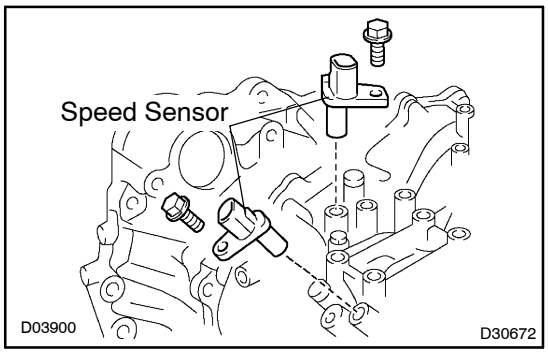
(b) Remove the O–ring from the union.



5. REMOVE OIL COOLER TUBE UNION (OUTLET OIL COOLER UNION)

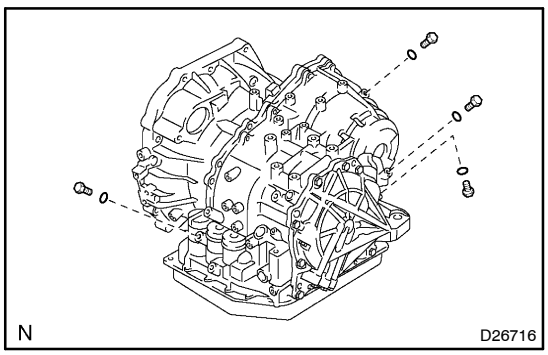
(a) Remove the elbow.

(b) Remove the O–ring from the elbow.



6. REMOVE SPEED SENSOR

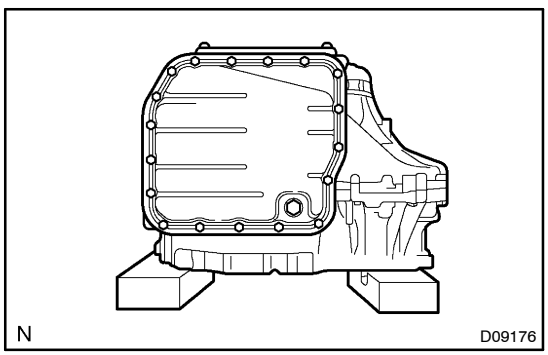
(a) Remove the 2 bolts and the 2 speed sensors from the transaxle assy.



7. REMOVE TRANSAXLE CASE NO.1 PLUG

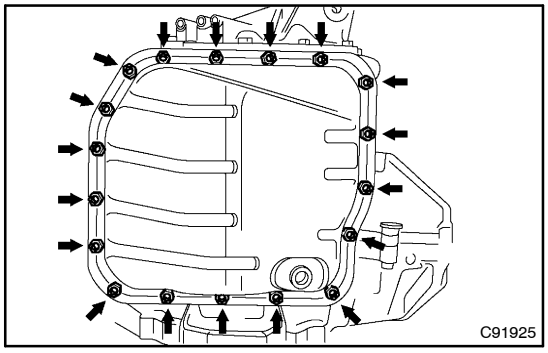
(a) Remove the 4 transaxle case No. 1 plugs from the transaxle case.

(b) Remove the 4 O–rings from the 4 transaxle case No.1 plugs.



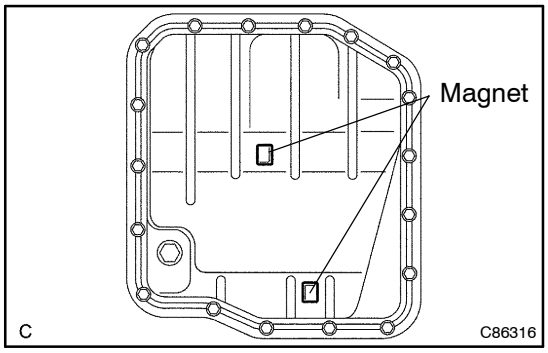
8. FIX AUTOMATIC TRANSAXLE ASSY

(a) Fix the transaxle assy.

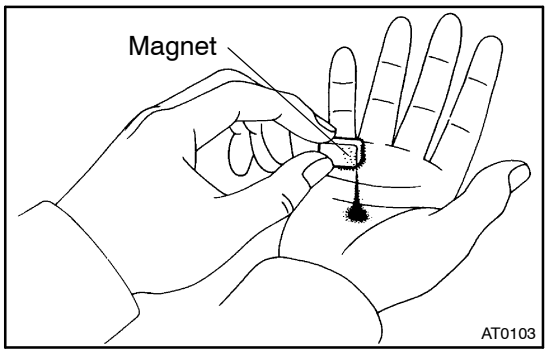


9. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB–ASSY

(a) Remove the 18 bolts, oil pan and gasket.

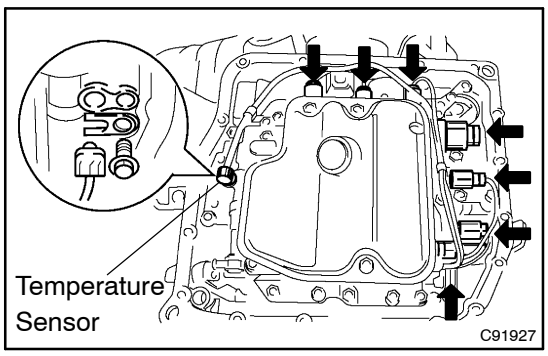


(b) Remove the 2 magnets from the oil pan.



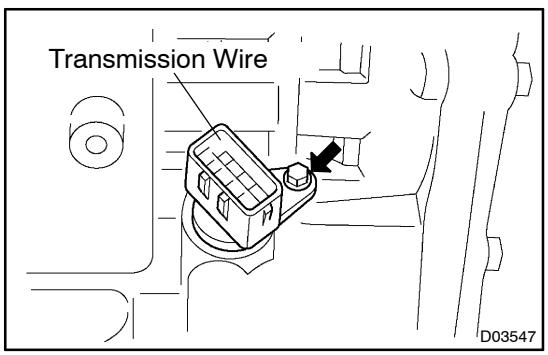
10. INSPECT TRANSMISSION OIL CLEANER MAGNET

(a) Remove the magnets and use them to collect any steel chips. Examine the chips and particles in the pan and on the magnet to determine what type of wear has occurred in the transaxle:
Steel (magnetic).... bearing, gear and plate wear
Brass (non–magnetic).... bushing wear



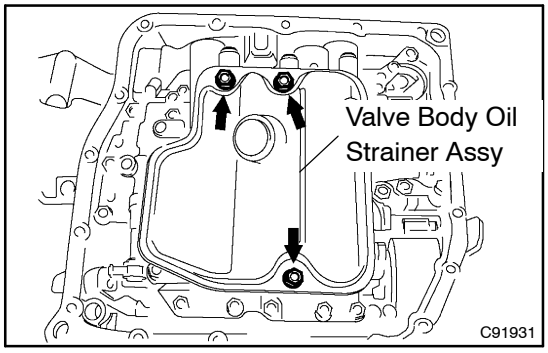
11. DISCONNECT TRANSMISSION WIRE

(a) Remove the 7 connectors from the shift solenoid valves.
(b) Remove the bolt, lock plate and ATF temperature sensor.



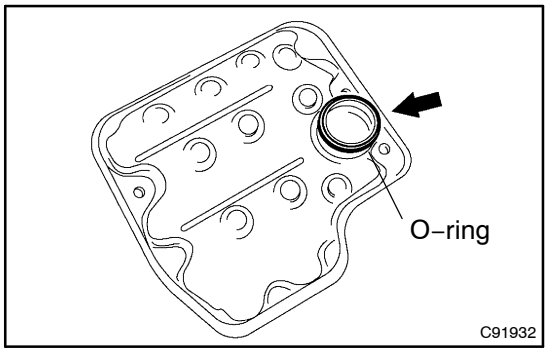
12. REMOVE TRANSMISSION WIRE

(a) Remove the bolt and transmission wire from the transaxle case.

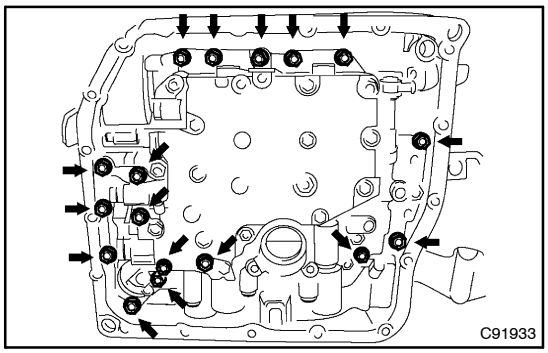


13. REMOVE VALVE BODY OIL STRAINER ASSY

(a) Remove the 3 bolts and oil strainer.

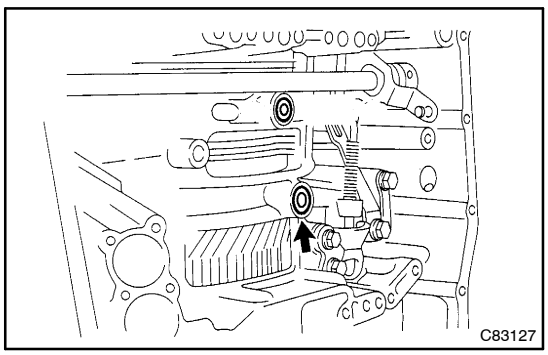


(b) Remove the O–ring from the oil strainer.



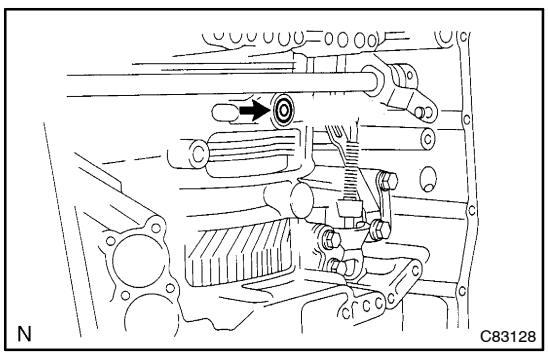
14. REMOVE TRANSMISSION VALVE BODY ASSY

(a) Support the valve body assy and remove the 17 bolts and valve body assy.



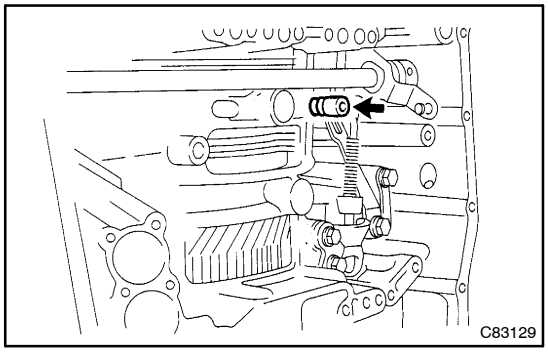
15. REMOVE GOVERNOR APPLY GASKET NO.1

(a) Remove the governor apply gasket No.1 from the transaxle case.



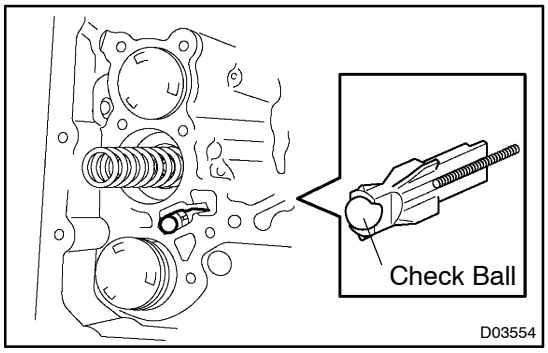
16. REMOVE TRANSAXLE CASE 2ND BRAKE GASKET

(a) Remove the transaxle case 2nd brake gasket from the transaxle case.



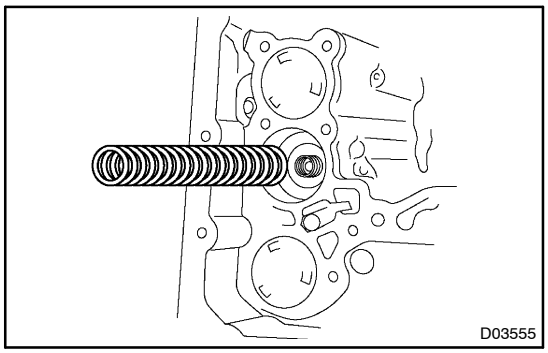
17. REMOVE BRAKE DRUM GASKET

(a) Remove the brake drum gasket from the transaxle case.



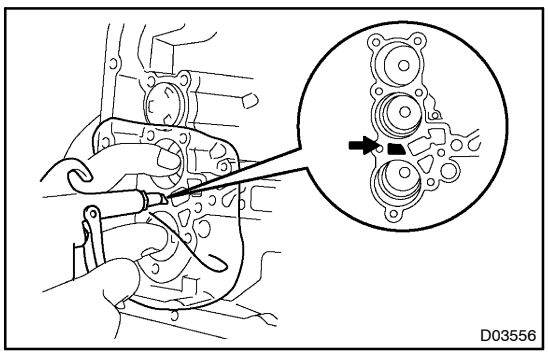
18. REMOVE CHECK BALL BODY

(a) Remove the check ball body and spring from the transaxle case.



19. REMOVE C–3 ACCUMULATOR PISTON

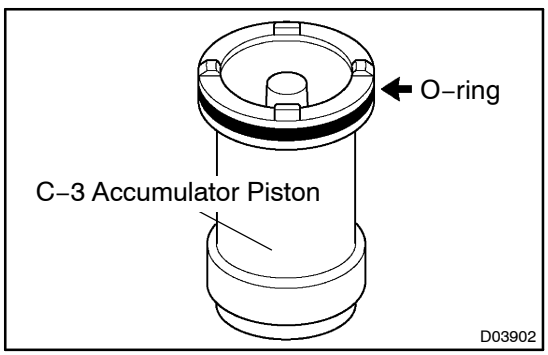
(a) Remove the spring from the C–3 accumulator piston.



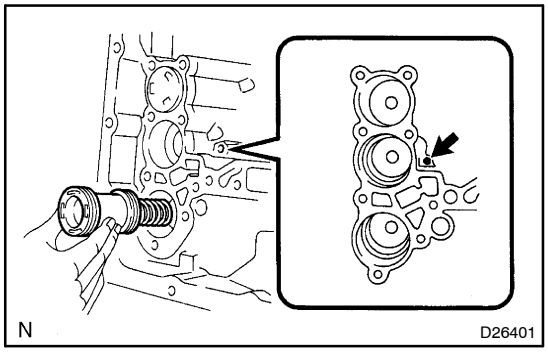
(b) Apply compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi) to the oil hole and remove the C–3 accumulator piston.

NOTICE:

- **Blowing off the air may cause the piston to jump–out. When removing the piston, hold it by your hand using a waste cloth.**
- **Take care not to splash ATF when air–blowing.**



(c) Remove the O–ring from the C–3 accumulator piston.



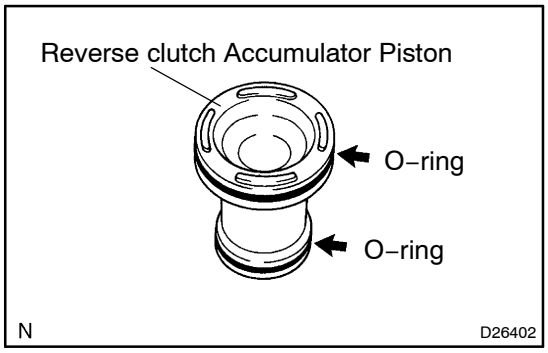
20. REMOVE REVERSE CLUTCH ACCUMULATOR PISTON

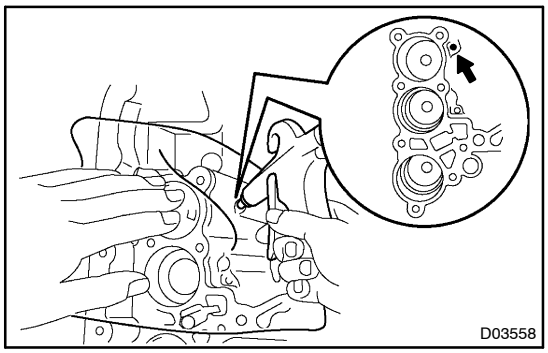
(a) Apply compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi) to the oil hole and remove the reverse accumulator piston and spring.

NOTICE:

- **Blowing off the air may cause the piston to jump–out. When removing the piston, hold it by your hand using a waste cloth.**
- **Take care not to splash ATF when air–blowing.**

(b) Remove the 2 O–rings from the reverse clutch accumulator piston.





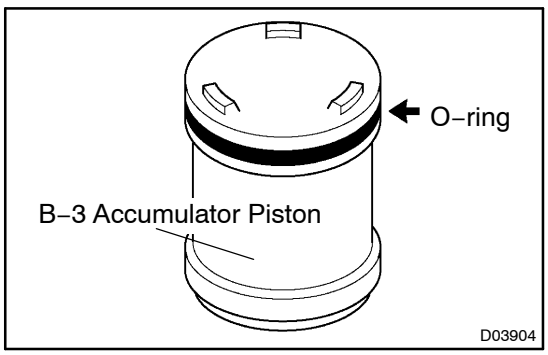
21. REMOVE B–3 ACCUMULATOR PISTON

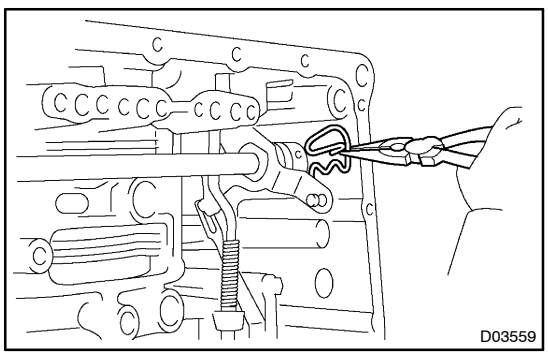
(a) Apply compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi) to the oil hole and remove the B–3 accumulator piston and 2 springs.

NOTICE:

- **Blowing off the air may cause the piston to jump–out. When removing the piston, hold it by your hand using a waste cloth.**
- **Take care not to splash ATF when air–blowing.**

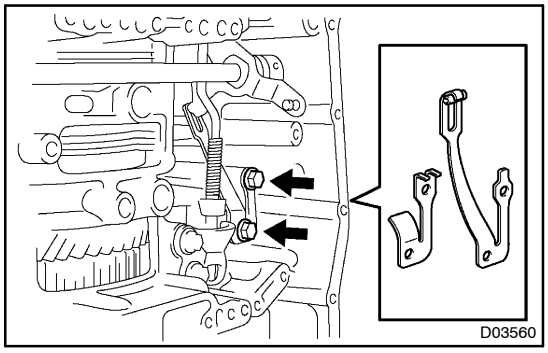
(b) Remove the O–ring from the B–3 accumulator piston.





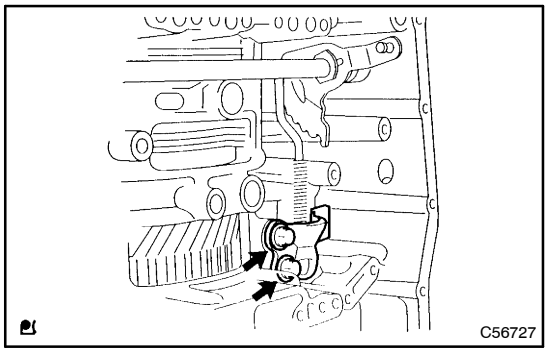
22. REMOVE MANUAL VALVE LEVER SHAFT RETAINER SPRING

(a) Using a needle–nose pliers, remove the manual valve lever shaft retainer spring.



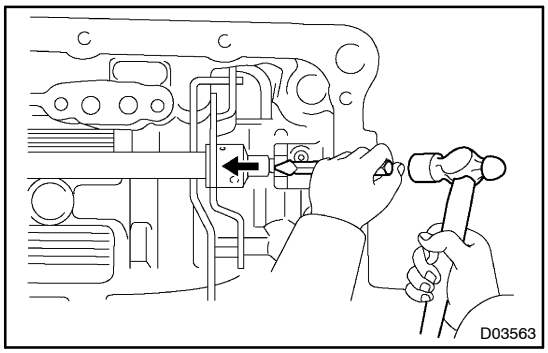
23. REMOVE MANUAL DETENT SPRING SUB–ASSY

(a) Remove the 2 bolts, the manual detent spring sub–assy and cover.



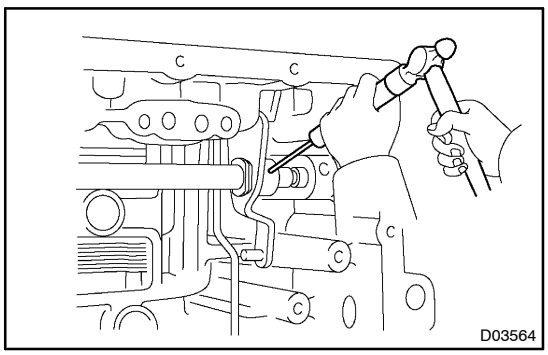
24. REMOVE PARKING LOCK PAWL BRACKET

(a) Remove the 2 bolts and parking lock pawl bracket.



25. REMOVE MANUAL VALVE LEVER SUB–ASSY

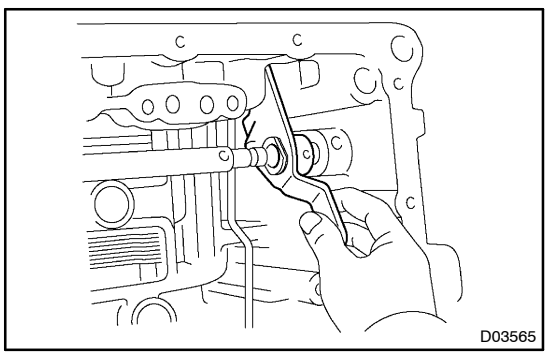
(a) Using a chisel and hammer, cut off and remove the spacer.



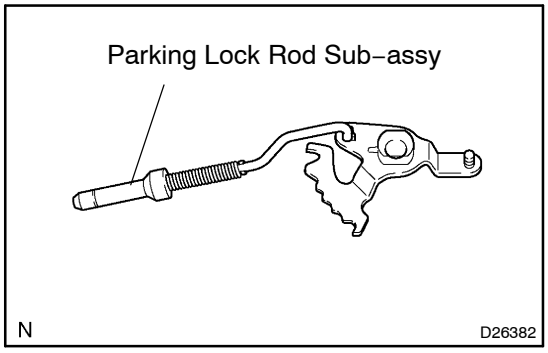
(b) Using a pin punch (ϕ35 mm) and hammer, drive out the pin.

HINT:

Slowly drive out the pin so that it will not fall into the transaxle case.

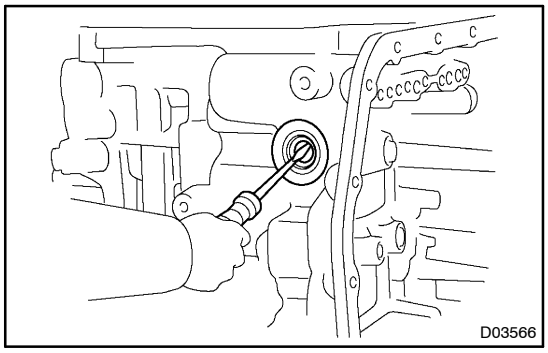


(c) Remove the manual valve lever shaft and manual valve lever.



26. REMOVE PARKING LOCK ROD SUB–ASSY

(a) Remove the parking lock rod from the manual valve lever.

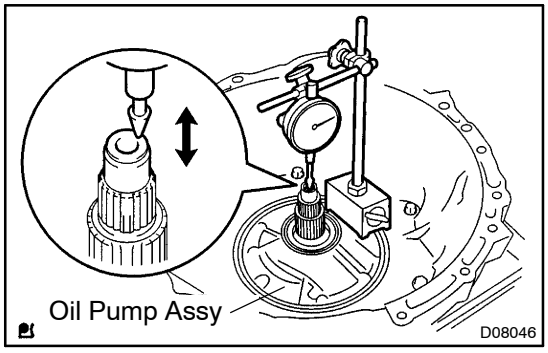


27. REMOVE MANUAL VALVE LEVER SHAFT OIL SEAL

(a) Using a screwdriver, remove the oil seal from the transaxle case.

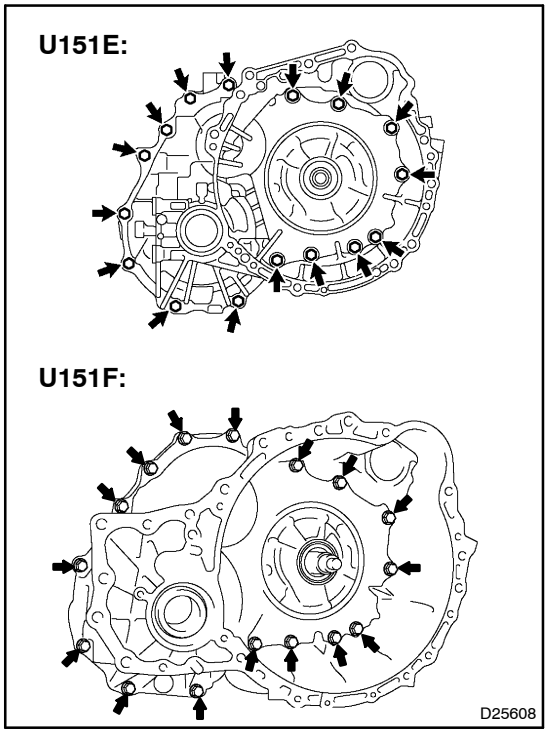
28. FIX AUTOMATIC TRANSAXLE ASSY

(a) Fix the transaxle case with the oil pump side facing up.



29. INSPECT INPUT SHAFT ENDPLAY

(a) Using a dial indicator, measure the input shaft endplay.
Endplay: 0.262 – 1.244 mm (0.01 – 0.049 in.)



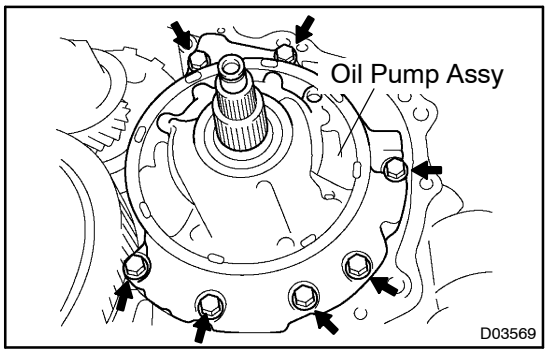
30. REMOVE TRANSAXLE HOUSING

(a) Remove the 16 bolts.

(b) Tap on the circumference of the transaxle housing with a plastic hammer to remove the transaxle housing from the transaxle case.

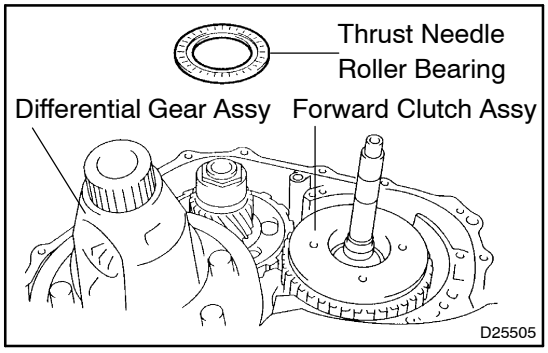
NOTICE:

Differential may be accidentally removed when the transaxle housing is removed.



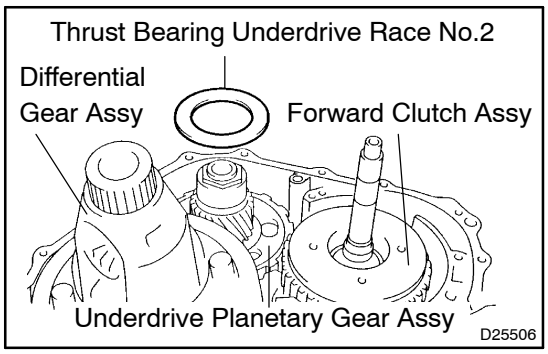
31. REMOVE OIL PUMP ASSY

(a) Remove the 7 bolts and oil pump from the transaxle case.



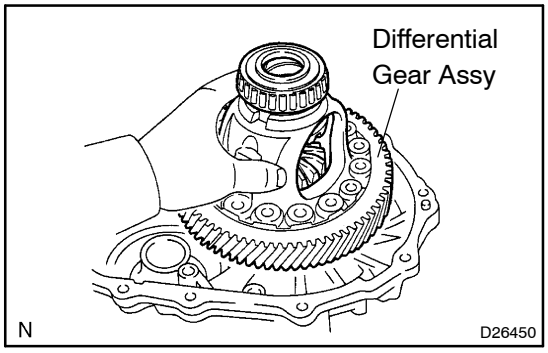
32. REMOVE THRUST NEEDLE ROLLER BEARING

(a) Remove the thrust needle roller bearing from the underdrive planetary gear assy.



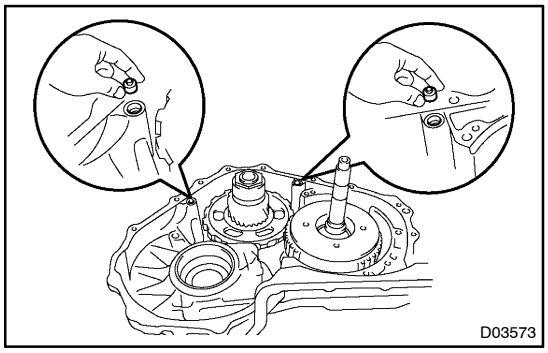
33. REMOVE THRUST BEARING UNDERDRIVE RACE NO.2

(a) Remove the thrust bearing underdrive race No. 2 from the underdrive planetary gear assy.



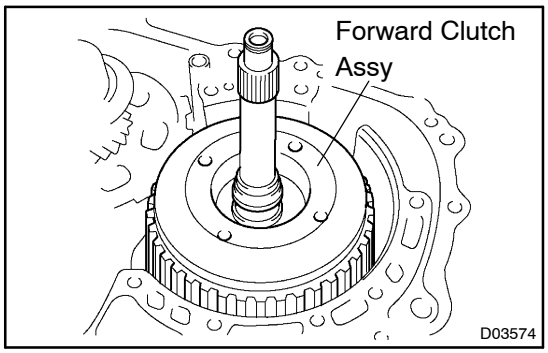
34. REMOVE DIFFERENTIAL GEAR ASSEMBLY

(a) Remove the differential gear assy from the transaxle case.



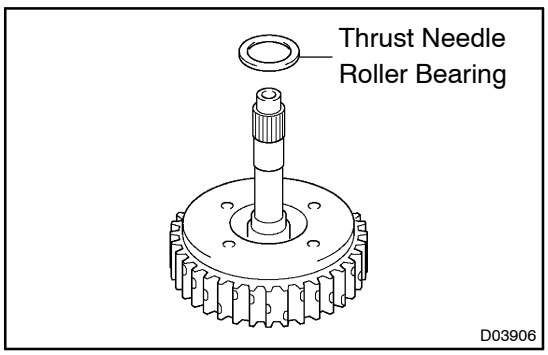
35. REMOVE OVERDRIVE BRAKE GASKET

(a) Remove the 2 overdrive brake gaskets from the transaxle case.

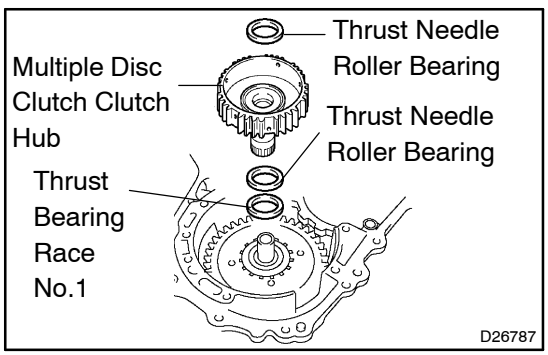


36. REMOVE FORWARD CLUTCH ASSY

(a) Remove the forward clutch assy from the transaxle case.

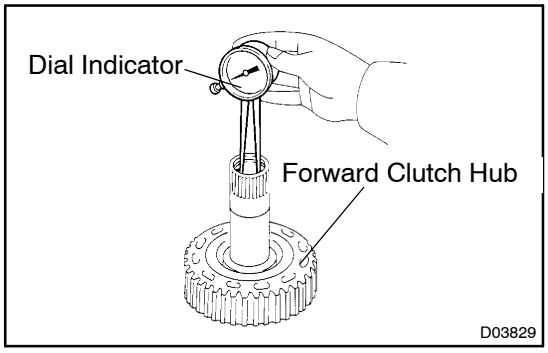


(b) Remove the thrust needle roller bearing from the forward clutch.



37. REMOVE MULTIPLE DISC CLUTCH CLUTCH HUB

(a) Remove the thrust needle roller bearing, multiple disc clutch clutch hub, thrust needle roller bearing and thrust bearing race No.1 from the transaxle case.



38. INSPECT MULTIPLE DISC CLUTCH CLUTCH HUB

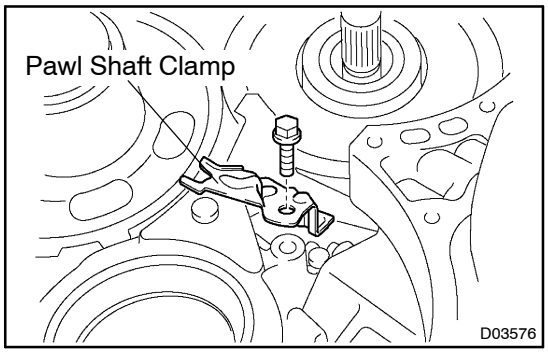
(a) Using a dial indicator, measure the inside diameter of the forward clutch hub bushing

Standard inside diameter:
23.025 – 23.046 mm (0.9065 – 0.9073 in.)
Maximum inside diameter: 23.09 mm (0.9091 in.)

NOTICE:

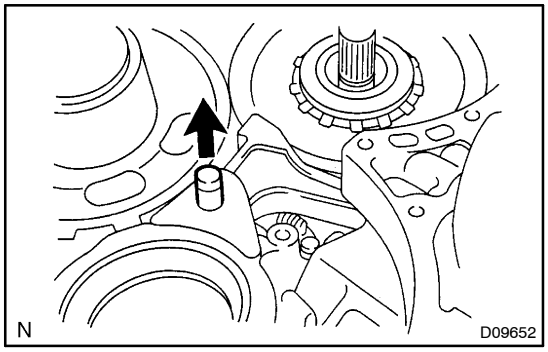
- **When the diameter is over the maximum, replace the multiple disc clutch hub with new one.**
- **Check the contact surface of the bush in the direct clutch shaft. If any scratch or discolor is identified, replace the direct clutch sub–assy with new one.**

If the inside diameter is greater than the maximum, replace the forward clutch hub.

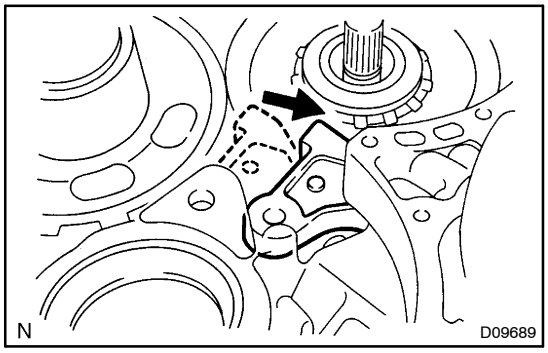


39. REMOVE UNDERDRIVE PLANETARY GEAR ASSY

(a) Remove the bolt and pawl shaft clamp.



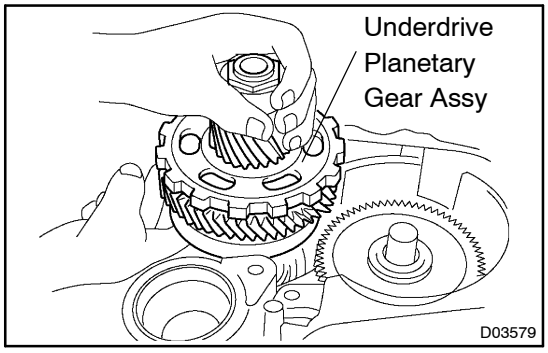
(b) Remove the parking lock pawl shaft.



(c) Push the parking lock pawl.

HINT:

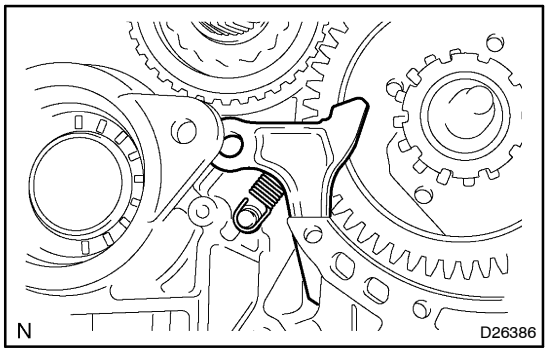
Failure to do so will cause interference when the underdrive planetary gear is removed.



(d) Remove the underdrive planetary gear assy from the transaxle case.

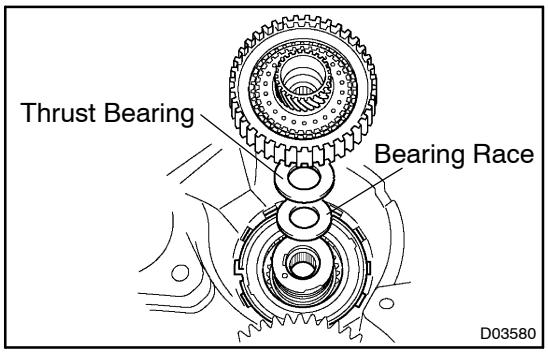
NOTICE:

Be careful so that the underdrive planetary gear assy will not fall out.



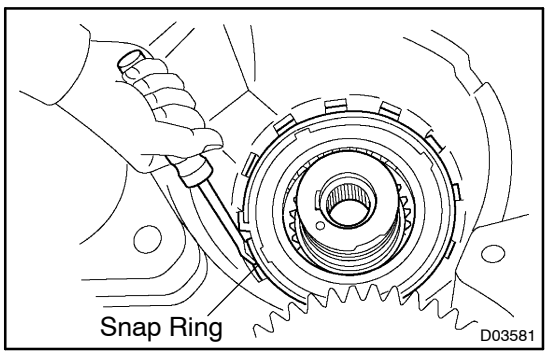
40. REMOVE PARKING LOCK PAWL

(a) Remove the spring, pawl pin and parking lock pawl.



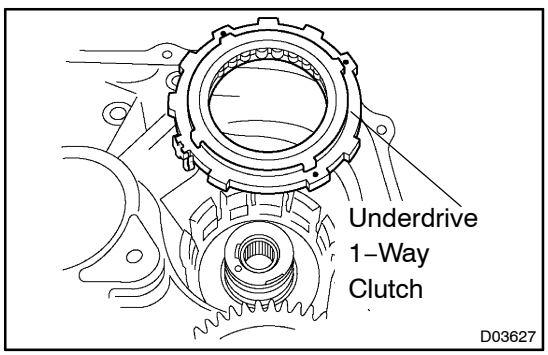
41. REMOVE UNDERDRIVE CLUTCH ASSY

(a) Remove the underdrive clutch assy, thrust bearing and bearing race from the transaxle case.

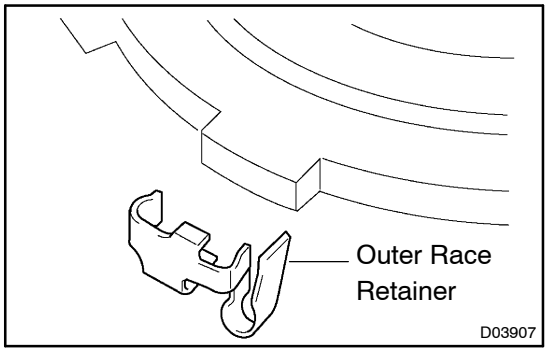


42. REMOVE UNDERDRIVE 1 WAY CLUTCH ASSY

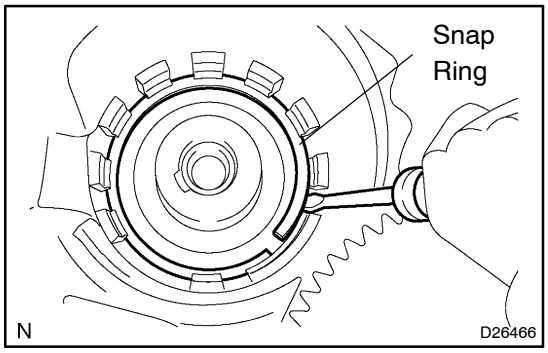
(a) Using a screwdriver, remove the snap ring from the transaxle case.



(b) Remove the underdrive 1–way clutch from the transaxle case.

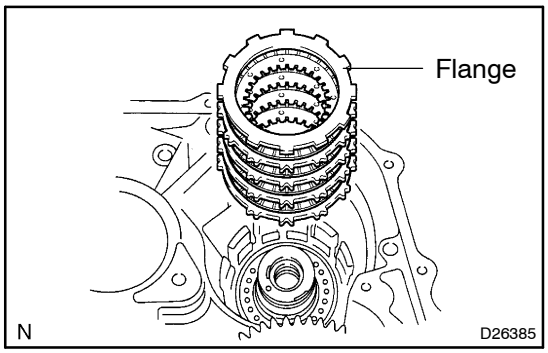


(c) Remove the outer race retainer from the 1–way clutch.

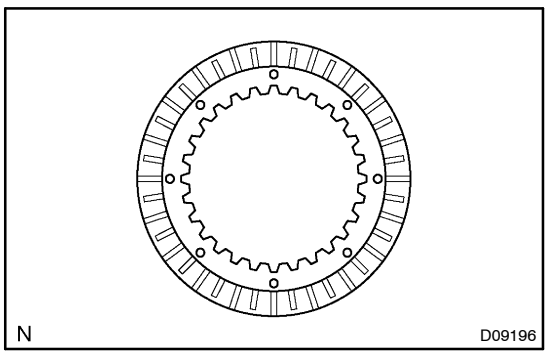


43. REMOVE UNDERDRIVE CLUTCH DISC NO.2

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



(b) Remove the flange, 4 discs and 4 plates from the transaxle case.



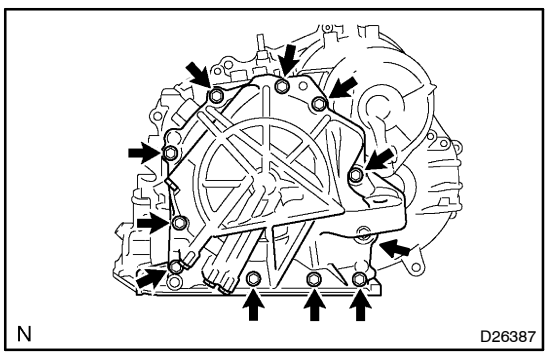
44. INSPECT UNDERDRIVE CLUTCH DISC NO.2

(a) Check to see if the sliding surface of the disc, plate and flange are worn or burnt.

If necessary, replace them.

NOTICE:

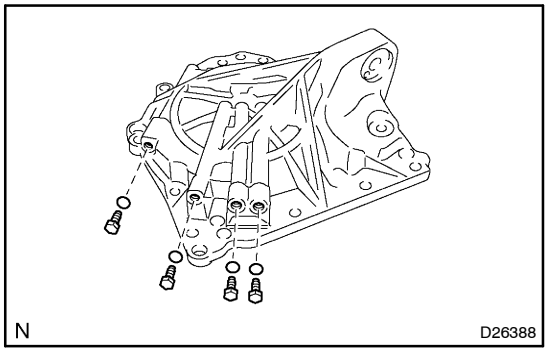
- **If the lining of the disc comes off or discolors, or even if a part of the groove is defaced, replace all discs.**
- **Before assembling new discs, soak them in ATF for at least 15 minutes.**



45. REMOVE TRANSAXLE REAR COVER SUB–ASSY

(a) Remove the 11 bolts.

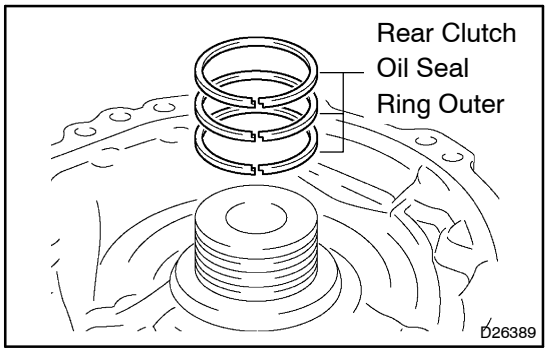
(b) Tap in the circumference of the rear cover with a plastic hammer to remove the transaxle rear cover from the transaxle case.



46. REMOVE TRANSAXLE CASE NO.1 PLUG

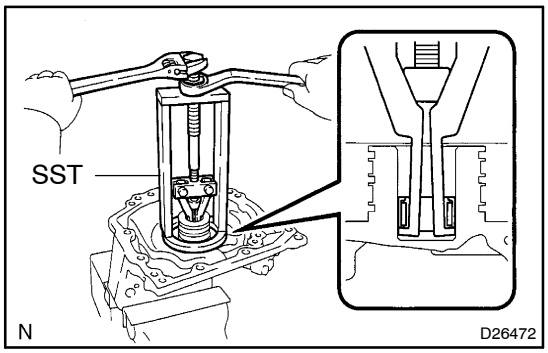
(a) Remove the 4 transaxle case No.1 plugs from the transaxle rear cover.

(b) Remove the 4 O–rings from the 4 transaxle case No.1 plugs.



47. REMOVE REAR CLUTCH OIL SEAL RING OUTER

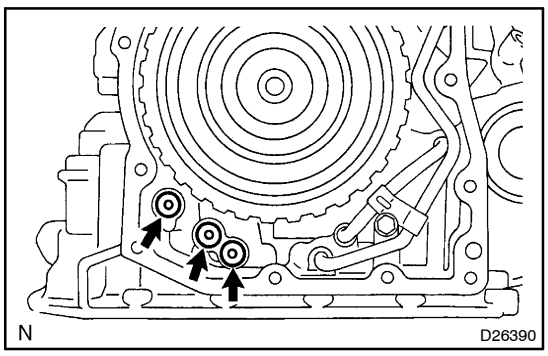
(a) Remove the 3 rear clutch oil seal rings from the transaxle rear cover.



48. REMOVE NEEDLE ROLLER BEARING

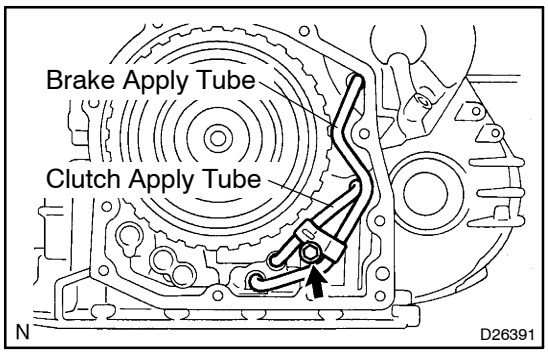
(a) Using SST, remove the needle–roller bearing from the transaxle rear cover.

SST 09387–00041 (09387–01021, 09387–01030, 09387–01040)



49. REMOVE GOVERNOR APPLY GASKET NO.1

(a) Using a screwdriver, remove the 3 apply gaskets.

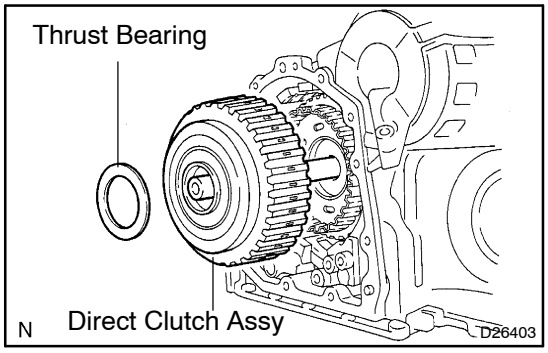


50. REMOVE BRAKE APPLY TUBE

(a) Remove the bolt, clamp and brake apply tube.

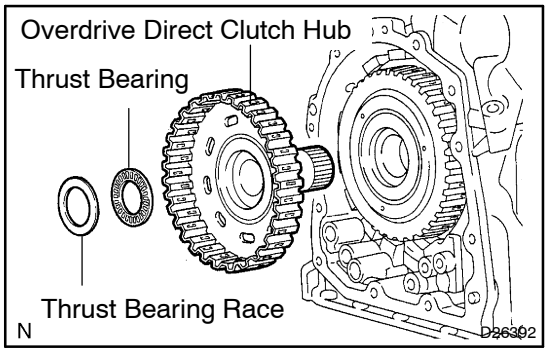
(b) Remove the clutch apply tube.

(c) Remove the brake apply tube from the clamp.



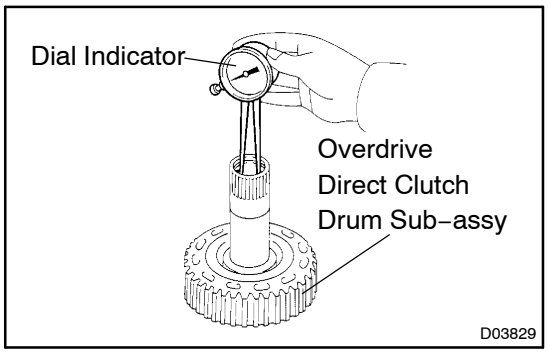
51. REMOVE DIRECT CLUTCH ASSY

(a) Remove the thrust bearing and the direct clutch assy from the transaxle case.



52. REMOVE OVERDREVE DIRECT CLUTCH HUB SUB–ASSY

(a) Remove the thrust bearing race, thrust bearing and overdrive direct clutch hub from the planetary gear assy.



53. INSPECT OVERDRIVE DIRECT CLUTCH DRUM SUB–ASSY

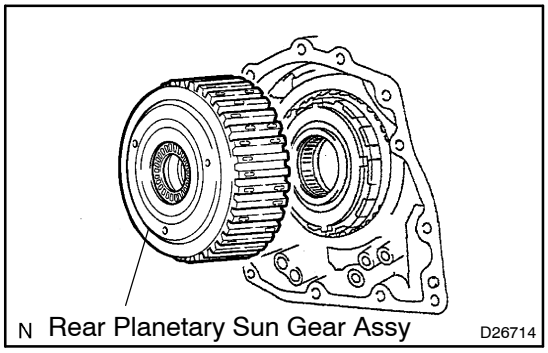
(a) Using a dial indicator, measure the inside diameter of the forward clutch hub bushing.

Standard inside diameter:
23.025 – 23.046 mm (0.9065 – 0.9073 in.)
Maximum inside diameter: 23.09 mm (0.9091 in.)

NOTICE:

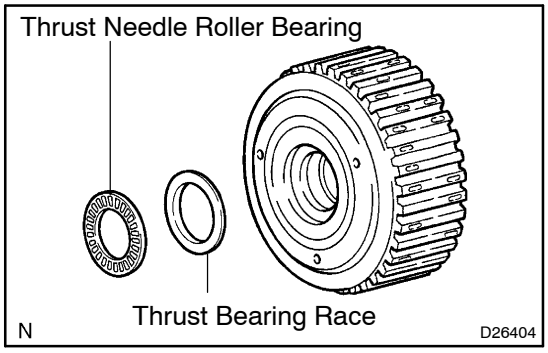
- **When the diameter is over the maximum, replace the multiple disc clutch hub with new one.**
- **Check the contact surface of the bush in the direct clutch shaft. If any scratch or discolor is identified, replace the direct clutch sub–assy with new one.**

If the inside diameter is greater than the maximum, replace the forward clutch hub.

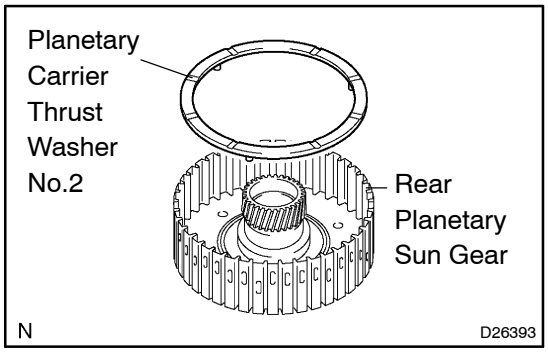


54. REMOVE REAR PLANETARY SUN GEAR ASSY

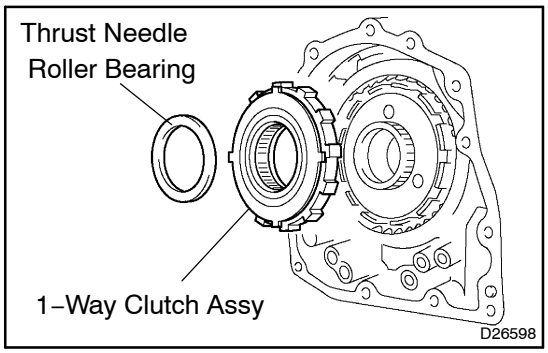
(a) Remove the rear planetary sun gear assy from the transaxle case.



(b) Remove the thrust needle roller bearing and thrust bearing race from the rear planetary sun gear assy.

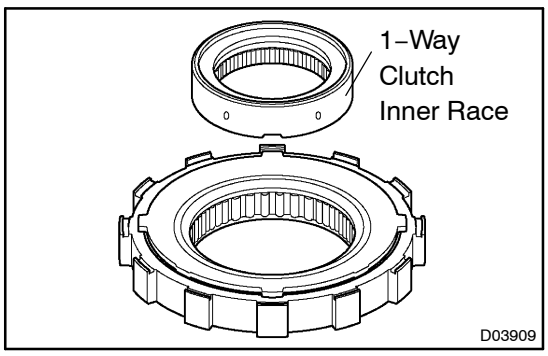


(c) Remove the planetary carrier thrust washer No.2 from the rear planetary sun gear assy.

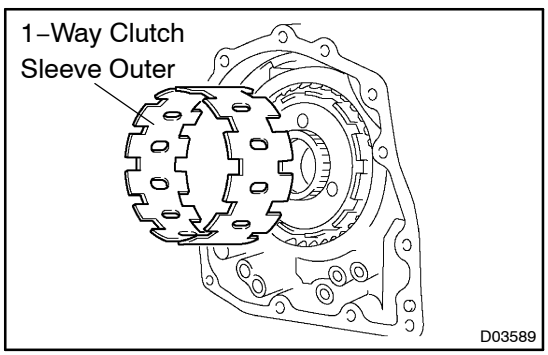


55. REMOVE 1 WAY CLUTCH ASSY

(a) Remove the 1–way clutch assy and the thrust needle roller bearing from the transaxle case.

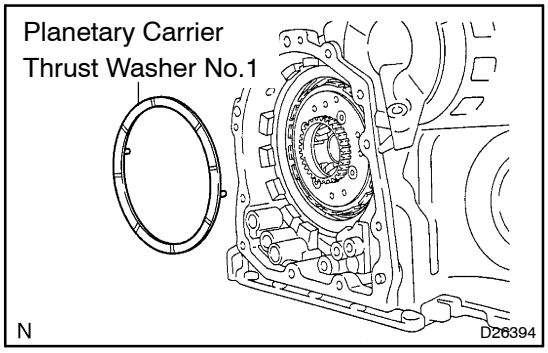


(b) Remove the 1–way clutch inner race from the 1–way clutch assy.



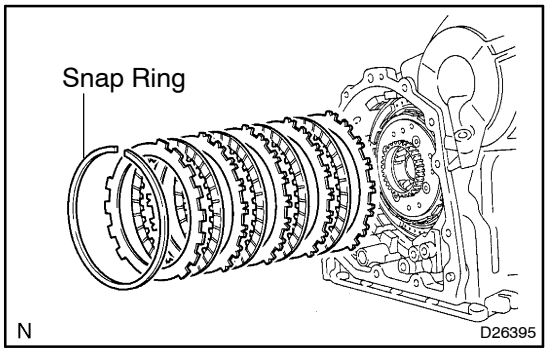
56. REMOVE 1WAY CLUTCH SLEEVE OUTER

(a) Remove the 1–way clutch sleeve outer from the transaxle case.



57. REMOVE PLANETARY CARRIER THRUST WASHER NO.1

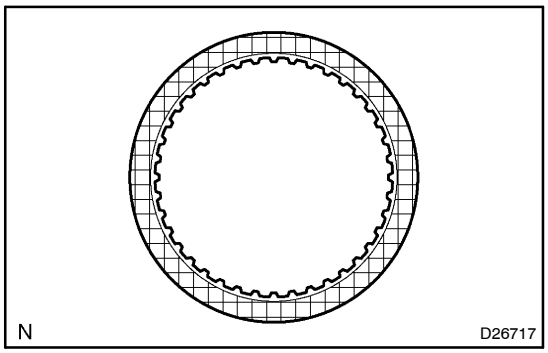
(a) Remove the planetary carrier thrust washer No.1 from the planetary gear assy.



58. REMOVE 2ND BRAKE CLUTCH DISC

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

(b) Remove the flange, 4 discs and 4 plates from the transaxle case.



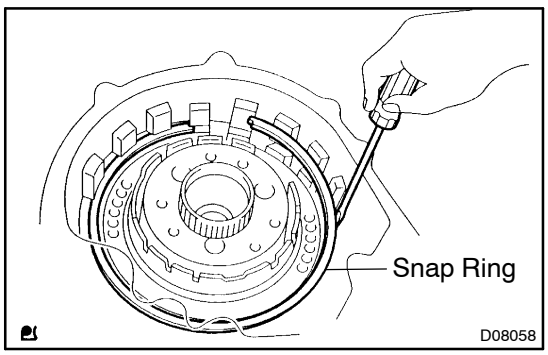
59. INSPECT 2ND BRAKE CLUTCH DISC

(a) Check to see if the sliding surface of the disc, plate and flange are worn or burnt.

If necessary, replace them.

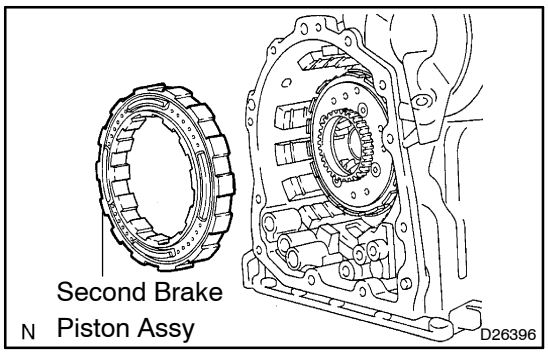
NOTICE:

- **If the lining of the disc comes off or discolors, or even if a part of the groove is defaced, replace all discs.**
- **Before assembling new discs, soak them in ATF for at least 15 minutes.**

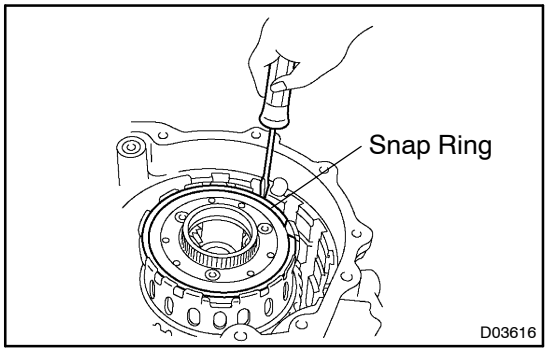


60. REMOVE SECOND BRAKE PISTON ASSY

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

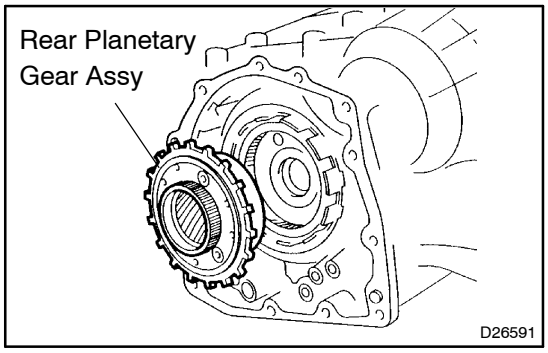


(b) Remove the second brake piston assy from the transaxle case.

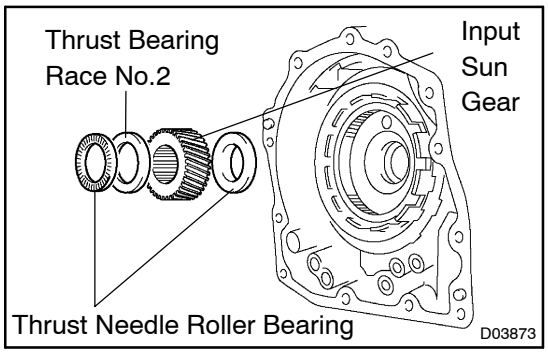


61. REMOVE REAR PLANETARY GEAR ASSY

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

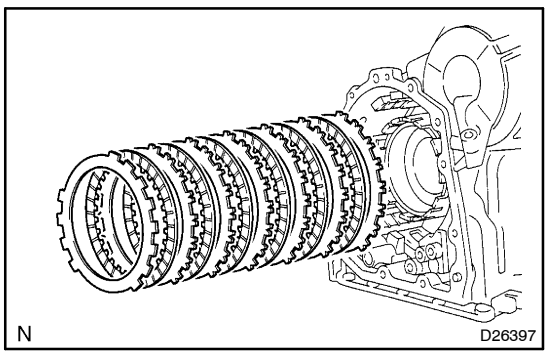


(b) Remove the rear planetary gear assy from the transaxle case.



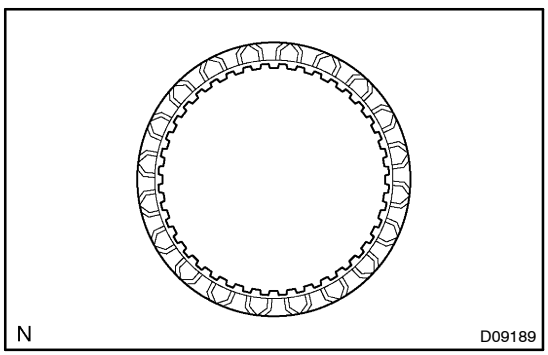
62. REMOVE INPUT SUN GEAR

(a) Remove the 2 thrust needle roller bearings, thrust bearing race No.2 and input sun gear from the transaxle case.



63. REMOVE 1ST & REVERSE BRAKE CLUTCH DISC

(a) Remove the flange, 6 discs and 6 plates from the transaxle case.



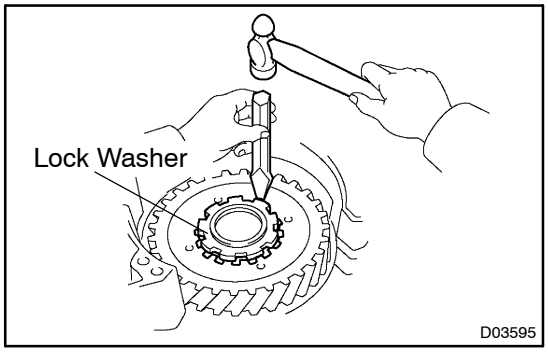
64. INSPECT 1ST & REVERSE BRAKE CLUTCH DISC

(a) Check to see if the sliding surface of the disc, plate and flange are worn or burnt.

If necessary, replace them.

NOTICE:

- **If the lining of the disc comes off or discolors, or even if a part of the groove is defaced, replace all discs.**
- **Before assembling new discs, soak them in ATF for at least 15 minutes.**

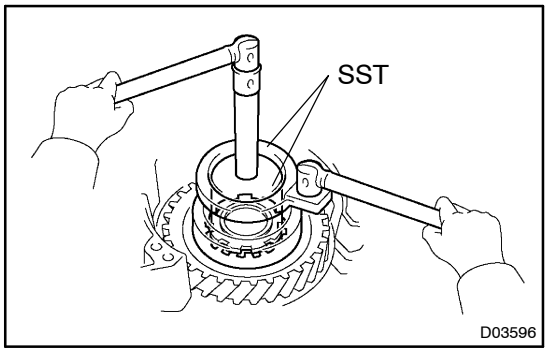


65. REMOVE FRONT PLANETARY GEAR ASSY

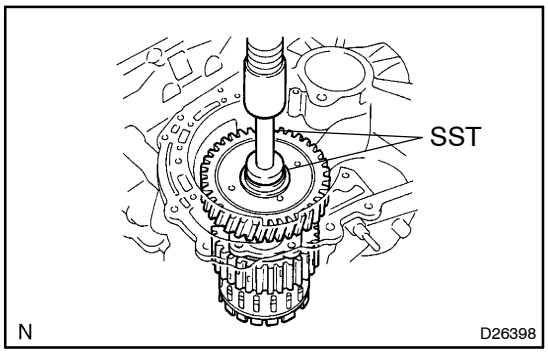
(a) Using a chisel and hammer, unstake the lock washer.

NOTICE:

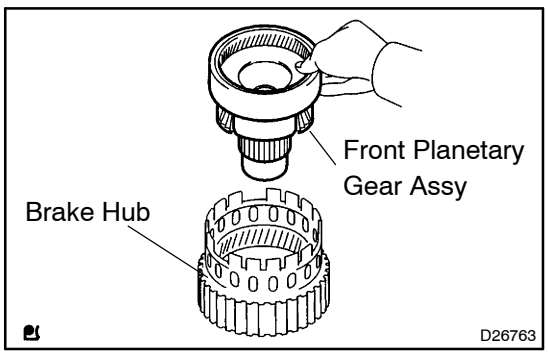
Push down all claws of the washer. Otherwise SST cannot be fully pressed against the nut, and cannot loosen the nut.



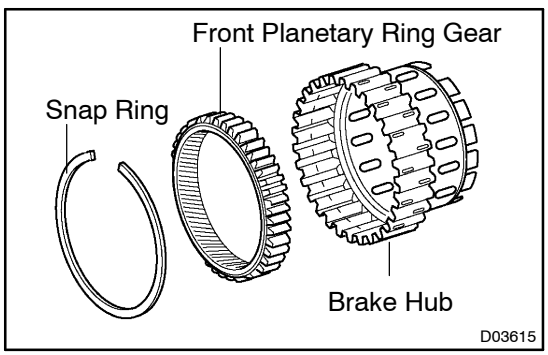
(b) Using SST, remove the nut.
SST 09387–00030, 09387–00080



(c) Using SST and a press, remove the front planetary gear assy from the counter drive gear.
SST 09950–60010 (09951–00450), 09950–70010 (09951–07100)

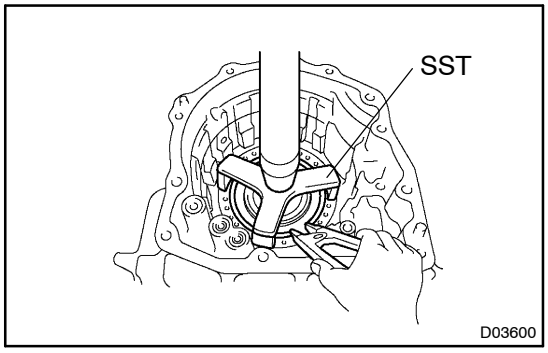


(d) Remove the front planetary gear assy from the brake hub.



66. REMOVE FRONT PLANETARY RING GEAR

(a) Using a screwdriver, remove the snap ring and front planetary ring gear from the brake hub.



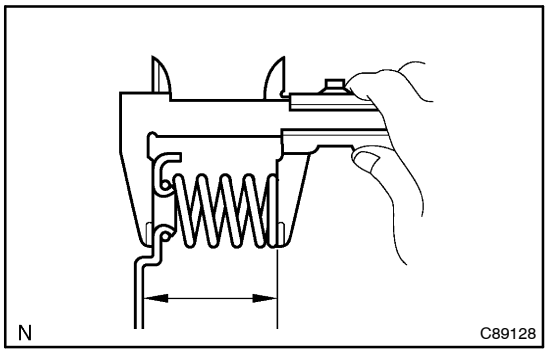
67. REMOVE 1ST & REVERSE BRAKE RETURN SPRING SUB–ASSY

(a) Place SST on the return spring, and compress the return spring with a press.
SST 09387–00070

(b) Using a snap ring expander, remove the snap ring.

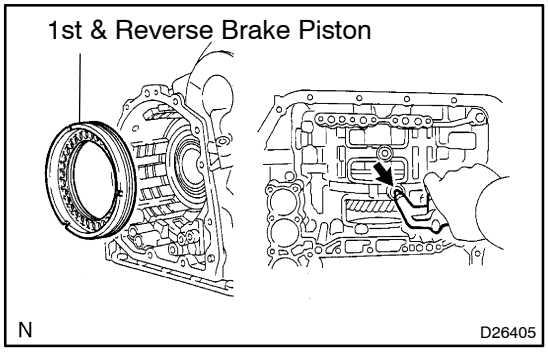
NOTICE:

- **Stop the press when the spring sheet is lowered 1 – 2 mm (0.039 – 0.078 in.) from the snap ring groove, to prevent the spring sheet from deforming.**
- **Do not expand the snap ring excessively.**



68. INSPECT 1ST & REVERSE BRAKE RETURN SPRING SUB–ASSY

(a) Using a vernier calipers, measure the free length of the spring together with the spring seat.
Standard free length: 17.61 mm (0.6933 in.)

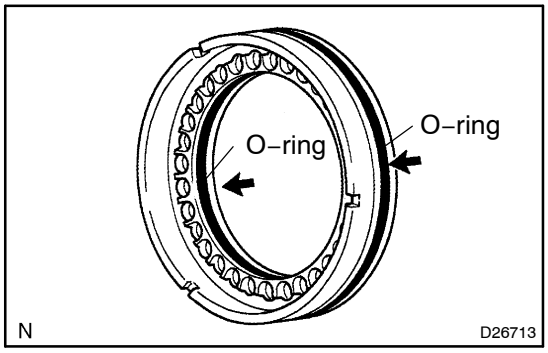


69. REMOVE 1ST & REVERSE BRAKE PISTON

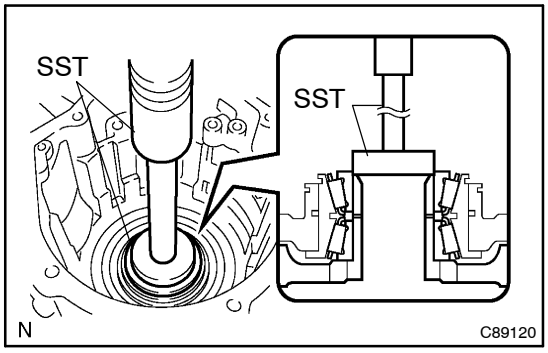
(a) Apply compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi) to the transaxle case to remove 1st & reverse brake piston.

NOTICE:

- **Blowing off the air may cause the piston to jump–out. When removing the piston, hold it by your hand using a waste cloth.**
- **Take care not to splash ATF when air–blowing.**



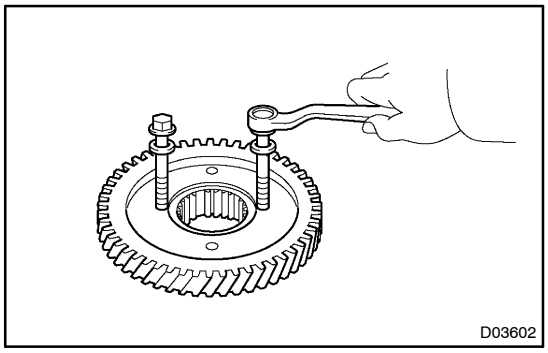
(b) Remove the 2 O–rings from the 1st & reverse brake piston.



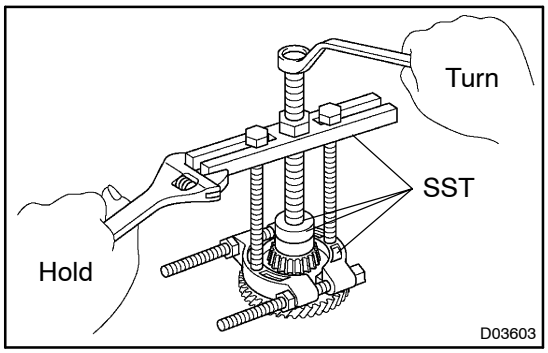
70. REMOVE COUNTER DRIVE GEAR

(a) Using SST and a press, remove the counter drive gear from the transaxle case.

SST 09950–60010 (09951–00590), 09950–70010 (09951–07100)

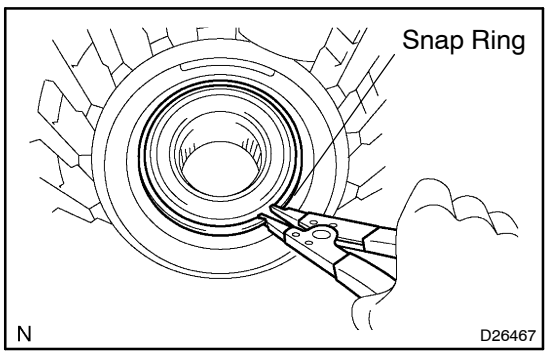


(b) As shown in the illustration, tighten 2 bolts evenly and make clearance of approx. 20.0 mm (0.797 in.) between the counter drive gear and the inner race.



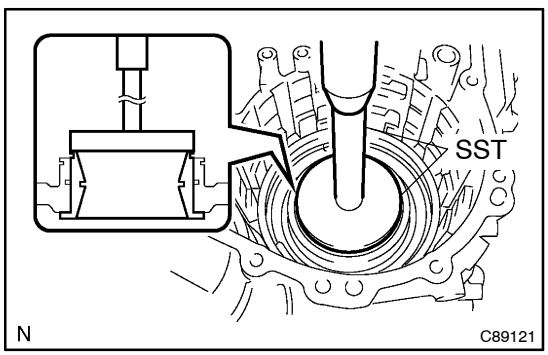
(c) Using SST, remove the tapered roller bearing.

SST 09950–60010 (09951–00590), 09950–70010 (09951–07100), 09950–00020, 09950–00030, 09950–40011 (09957–04010)



71. REMOVE COUNTER DRIVE GEAR BEARING

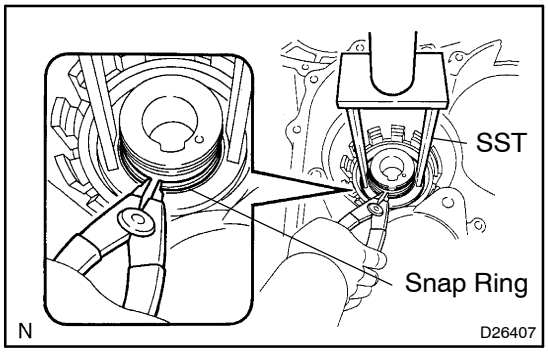
(a) Using a snap ring expander, remove the snap ring.



(b) Using SST and a press, remove the bearing outer race.

SST 09950–60020 (09951–00910), 09950–70010 (09951–07100)

72. REMOVE BREATHER PLUG NO.2 (ATM)



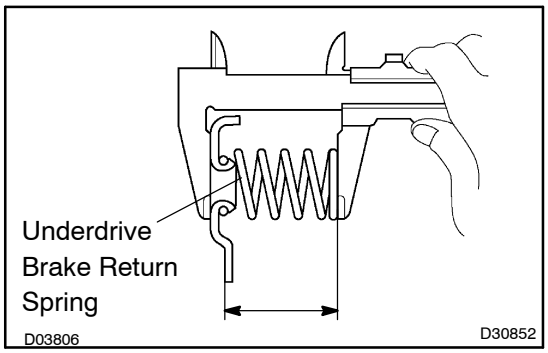
73. REMOVE UNDERDRIVE BRAKE RETURN SPRING SUB–ASSY

(a) Place SST on the return spring, and compress the return spring with a press.
SST 09387–00020

(b) Using a snap ring expander, remove the snap ring.

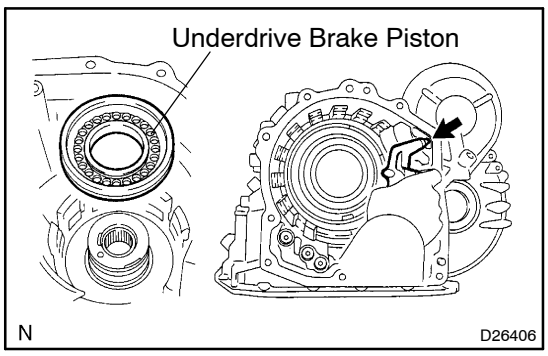
NOTICE:

- **Stop the press when the spring sheet is lowered 1 – 2 mm (0.039 – 0.078 in.) from the snap ring groove, to prevent the spring sheet from deforming.**
- **Do not expand the snap ring excessively.**



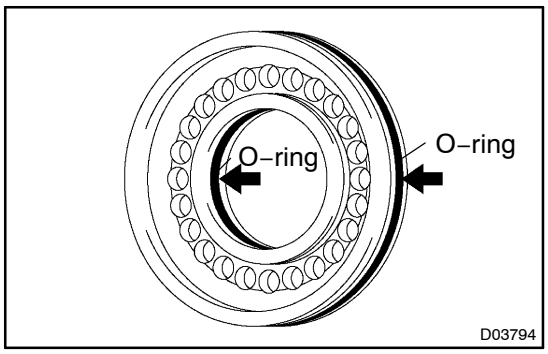
74. INSPECT UNDERDRIVE BRAKE RETURN SPRING SUB–ASSY

(a) Using a vernier calipers, measure the free length of the spring together with the spring seat.
Standard free length: 13.24 mm (0.5213 in.)

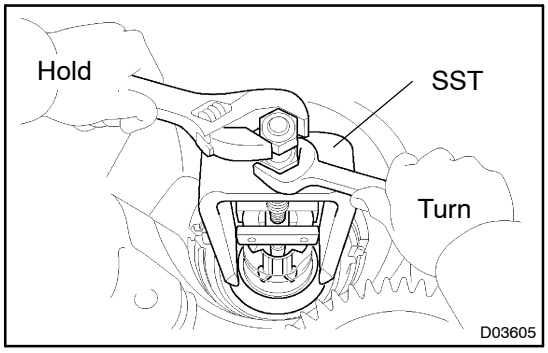


75. REMOVE UNDERDRIVE BRAKE PISTON

(a) Apply compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi) to the transaxle case to remove the underdrive brake piston.



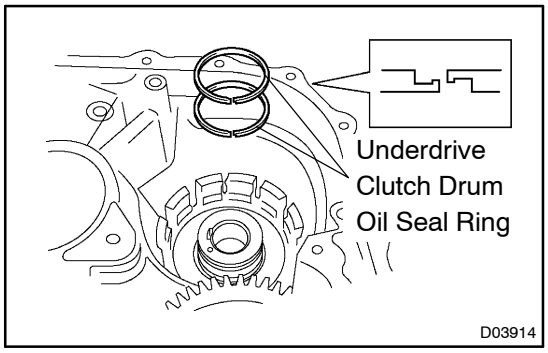
(b) Remove the 2 O–rings from the underdrive brake piston.



76. REMOVE NEEDLE ROLLER BEARING

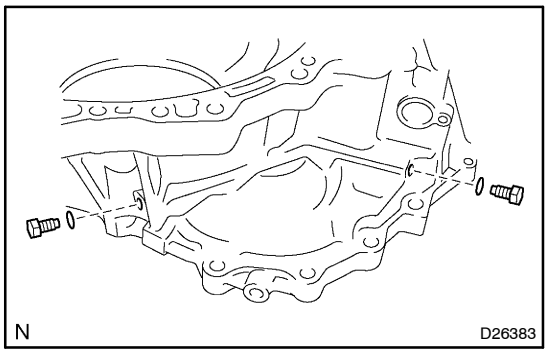
(a) Using SST, remove the needle–roller bearing from the transaxle case.

SST 09387–00041 (09387–01010, 09387–01030, 09387–01040)



77. REMOVE UNDERDRIVE CLUTCH DRUM OIL SEAL RING

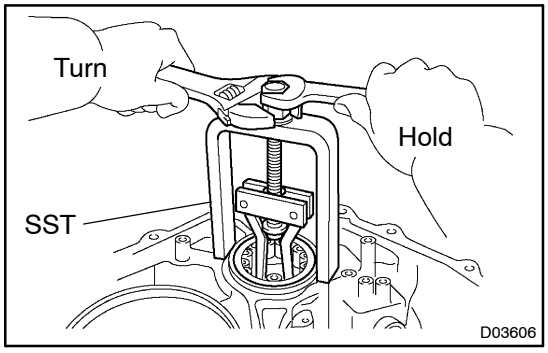
(a) Remove the 2 oil seal rings from the transaxle case.



78. REMOVE TRANSAXLE CASE NO.1 PLUG

(a) Remove the 2 transaxle case No. 1 plugs.

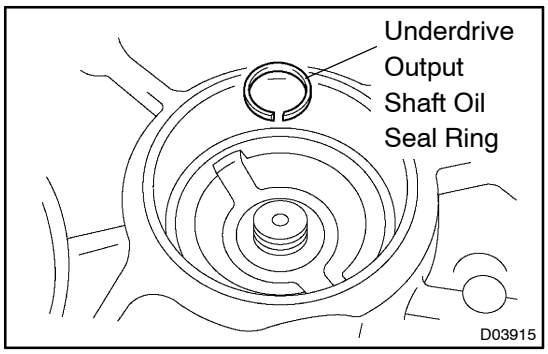
(b) Remove the 2 O–rings from the 2 transaxle case No. 1 plugs.



79. REMOVE UNDERDRIVE CYLINDRICAL ROLLER BEARING

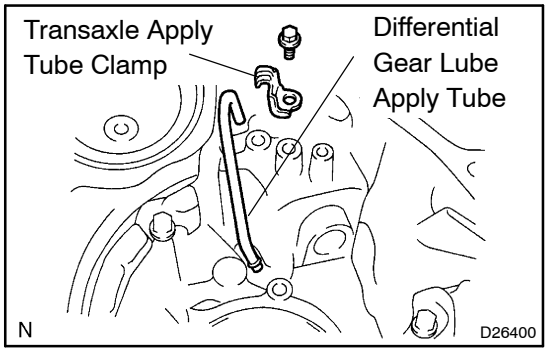
(a) Using SST, remove the underdrive cylindrical roller bearing from the transaxle case.

SST 09514–35011



80. REMOVE UNDERDRIVE OUTPUT SHAFT OIL SEAL RING

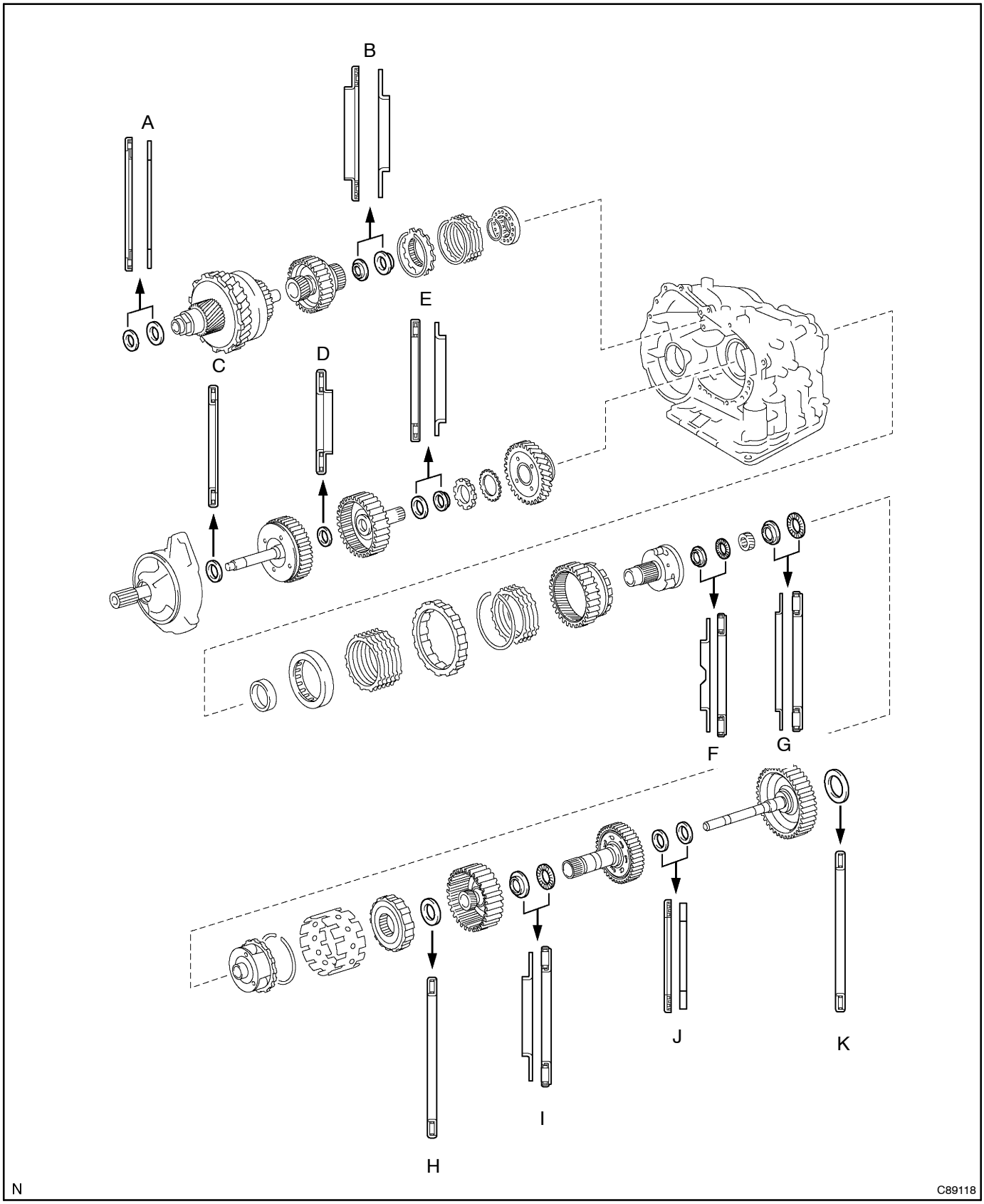
(a) Remove the oil seal ring from the transaxle housing.



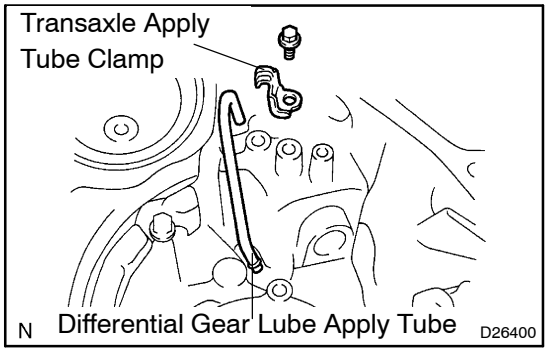
81. REMOVE DIFFERENTIAL GEAR LUBE APPLY TUBE

(a) Remove the bolt, transaxle apply tube clamp and differential gear lube apply tube from the transaxle housing.

82. BEARING POSITION



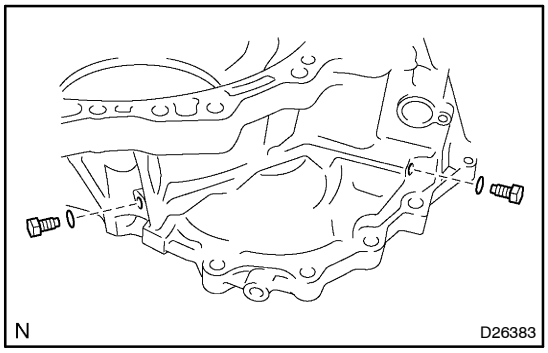
Mark	Front Race Diameter Inside / Outside mm (in.)	Thrust Bearing Diameter Inside / Outside mm (in.)	Rear Race Diameter Inside / Outside mm (in.)
A	–	57.2 (2.252) / 84.96 (3.3449)	56.4 (2.220) / 83.0 (3.268)
B	–	37.73 (1.4854) / 58.0 (2.283)	–
C	–	33.85 (1.3327) / 52.2 (2.055)	–
D	24.94 (0.982)	23.5 (0.925) / 44.0(1.732)	–
E	–	36.3 (1.429) / 51.93 (2.044)	34.5 (1.358) / 48.35 (1.904)
F	34.35 (1.352) / 56.57 (2.227)	32.45 (1.278) / 56.48 (2.223)	–
G	40.15 (1.581) / 59.25 (2.333)	38.65 (1.522) / 59.79 (2.354)	38.65 (1.522) / 59.25 (2.332)
H	–	53.6 (2.110) / 69.6 (2.740)	–
I	33.02 (1.3) / 45.8 (1.803)	31.85 (1.254) / 57.3 (2.256)	–
J	–	24.79 (0.976) / 39.5 (1.555)	23.6 (0.929) / 37.95 (1.494)
K	–	56.3 (2.216) / 75.96 (2.991)	–



83. INSTALL DIFFERENTIAL GEAR LUBE APPLY TUBE

(a) Install the differential gear lube apply tube and transaxle apply tube clamp with the bolt to the transaxle housing.
Torque: 9.8 N·m (100 kgf·cm, 87 in.·lbf)

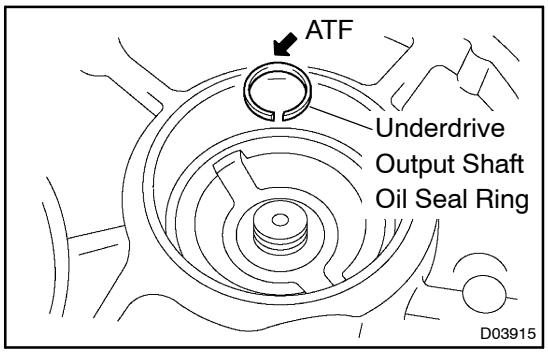
NOTICE:
Make sure to insert the pipe to the stopper.



84. INSTALL TRANSAXLE CASE NO.1 PLUG

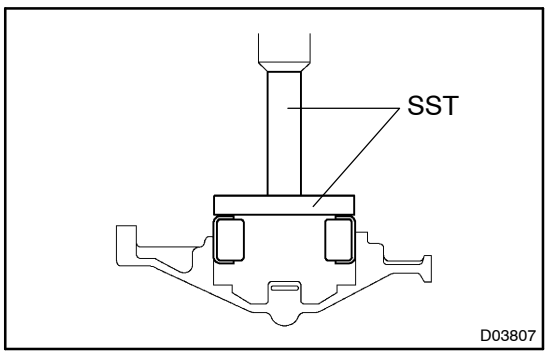
(a) Install the 2 new O–rings to the 2 transaxle case No.1 plugs.

(b) Install the 2 transaxle case No.1 plugs to the transaxle rear cover.
Torque: 7.4 N·m (75 kgf·cm, 65 in.·lbf)



85. INSTALL UNDERDRIVE OUTPUT SHAFT OIL SEAL RING

(a) Coat the new oil seal ring with ATF and install it to the transaxle housing.

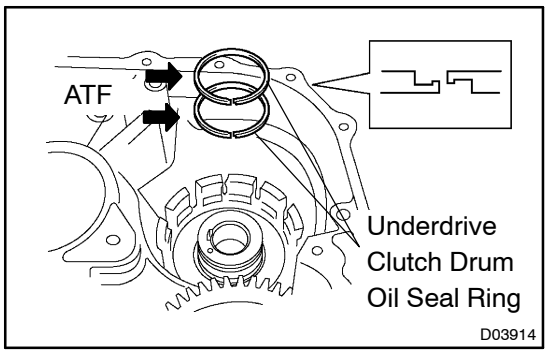


86. INSTALL UNDERDRIVE CYLINDRICAL ROLLER BEARING

(a) Coat the underdrive cylindrical roller bearing with ATF.

(b) Using SST and a press, install the underdrive cylindrical roller bearing.
SST 09950–60020 (09951–00810), 09950–70010 (09951–07100)

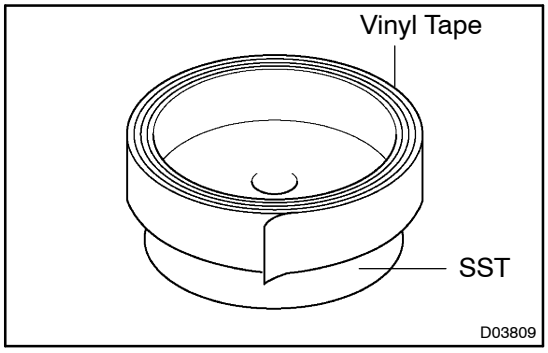
NOTICE:
Do not apply excessive pressure to it.



87. INSTALL UNDERDRIVE CLUTCH DRUM OIL SEAL RING

(a) Coat the 2 new oil seal rings with ATF, install them to the transaxle rear cover.

NOTICE:
- **Do not expand the gap of the oil seal ring too much.**
- **Fix the hooks certainly. Confirm the smooth rotation.**



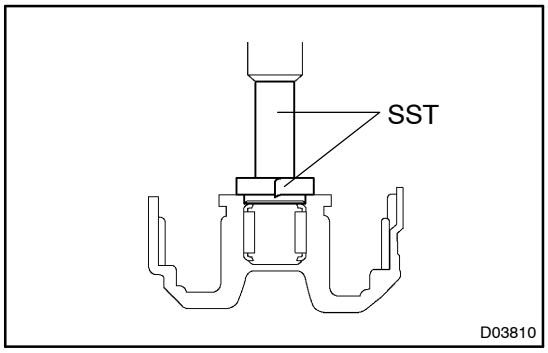
88. INSTALL NEEDLE ROLLER BEARING

(a) Wind a vinyl tape around SST at the place 4.0 mm (0.157 in.) above from the bottom end until the thickness of the wound tape is about 5.0 mm (0.197 in.).

NOTICE:

Clean SST to remove deposited oil, before winding a vinyl tape.

(b) Coat the needle roller bearing with ATF.

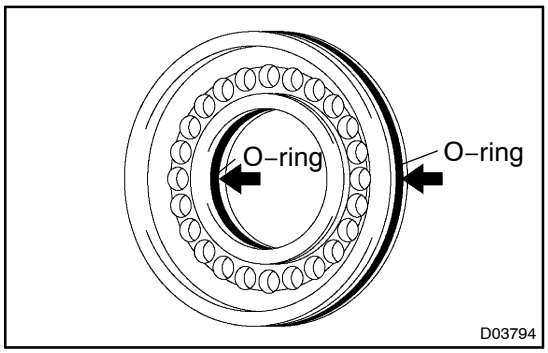


(c) Using SST and a press, install the needle–roller bearing to the transaxle case.

SST 09950–60010 (09951–00320), 09950–70010 (09951–07100)

NOTICE:

When the wound vinyl tape contacts the transaxle case, stop press–fitting.



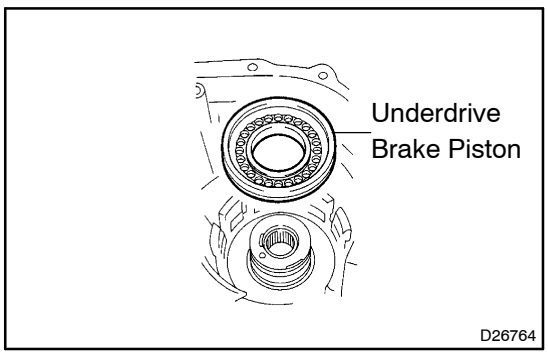
89. INSTALL UNDERDRIVE BRAKE PISTON

(a) Coat the 2 new O–rings with ATF, install them to the underdrive brake piston.

NOTICE:

- **Assemble the O–ring carefully not to have a twist and a pinching.**
- **Apply enough ATF to the O–ring prior to assembling.**

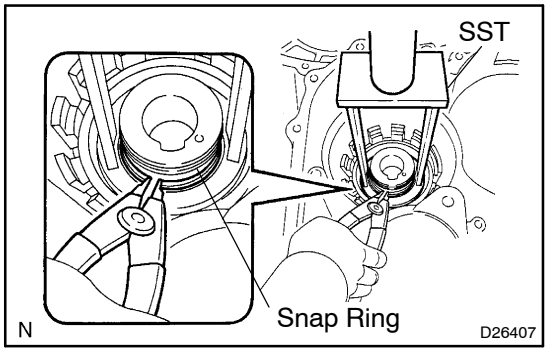
(b) Coat the underdrive brake piston with ATF.



(c) Install the underdrive brake piston to the transaxle case.

NOTICE:

Be careful not to damage the O–ring.



90. INSTALL UNDERDRIVE CLUTCH RETURN SPRING SUB–ASSY

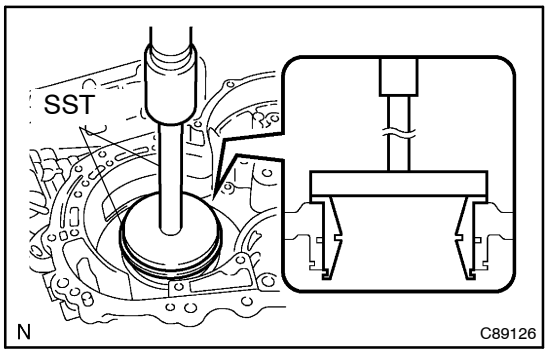
(a) Place SST on the return spring and compress the return spring with a press.
SST 09387–00020

(b) Using a snap ring expander, install the snap ring to the transaxle case.

NOTICE:

- **Stop the press when the spring sheet is lowered 1 – 2 mm (0.039 – 0.078 in.) from the snap ring groove, to prevent the spring sheet from deforming.**
- **Do not expand the snap ring excessively.**
- **Installing the spring sub–assembly, check all of the springs are fit in the piston correctly.**
- **The snap ring should be fixed surely in the groove of the transaxle case.**

91. INSTALL BREATHER PLUG NO.2 (ATM)



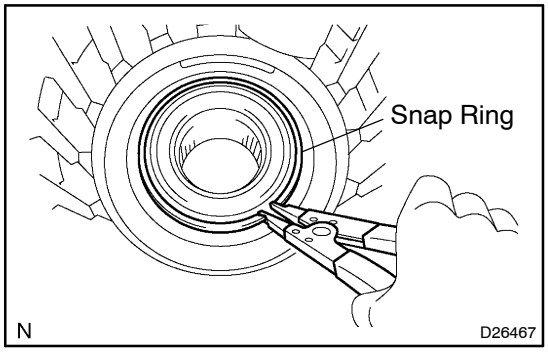
92. INSTALL COUNTER DRIVE GEAR BEARING

(a) Coat the counterdrive gear bearing with ATF.

(b) Using SST and a press, install the bearing outer race.
SST 09950–60020 (09951–01030), 09950–70010 (09951–07150), 09649–17010

NOTICE:

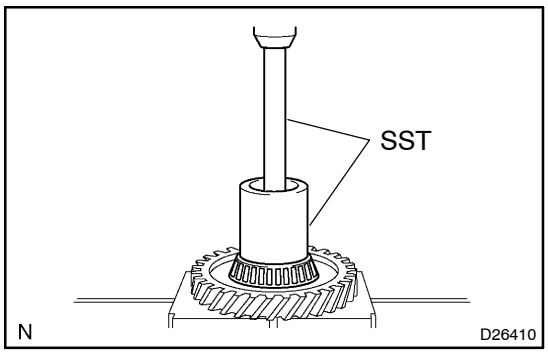
- **Do not apply excessive pressure to it.**
- **Press–fit the bearing outer race until it contacts the transaxle case.**



(c) Using a snap ring expander, install the snap ring.

NOTICE:

Face the white mark side of the snap ring up.



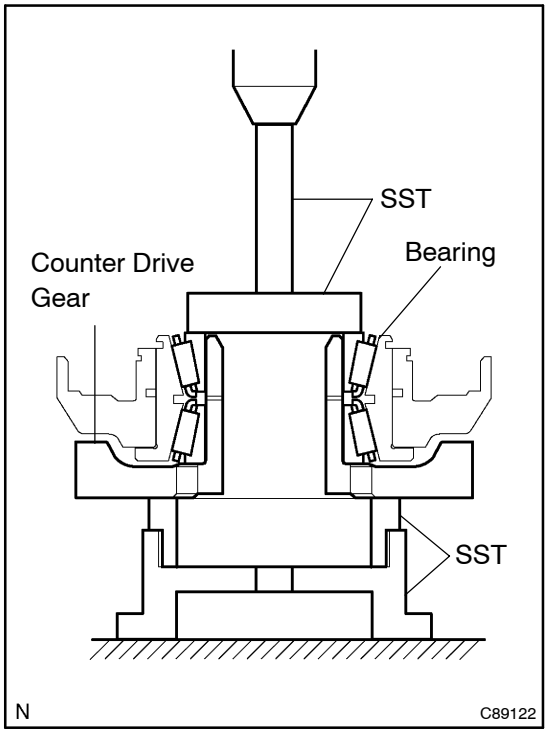
93. INSTALL COUNTER DRIVE GEAR

(a) Coat the couterdrive gear with ATF.

(b) Using SST and a press, install the tapered roller bearing to the counter drive gear.
SST 09950–70010 (09951–07150), 09649–17010

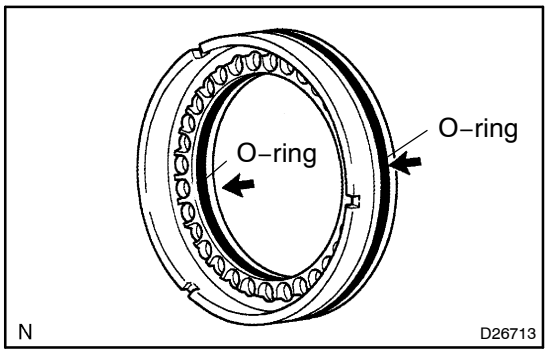
NOTICE:

Do not apply excessive pressure to it.



(c) Using SST and a press, install the counter drive gear and bearing to the transaxle case.
SST 09223–15030, 09527–17011, 09950–60020 (09951–00750), 09950–70010 (09951–07150)

NOTICE:
Do not apply excessive pressure to it.

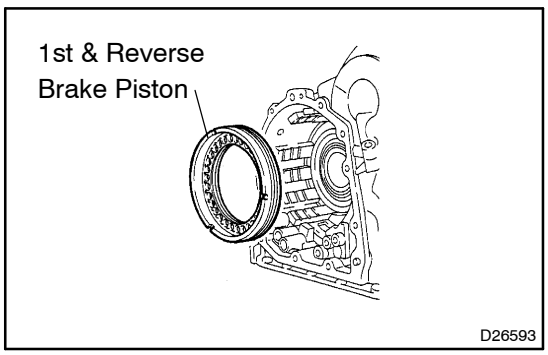


94. INSTALL 1ST & REVERSE BRAKE PISTON

(a) Coat the 2 new O–rings with ATF.

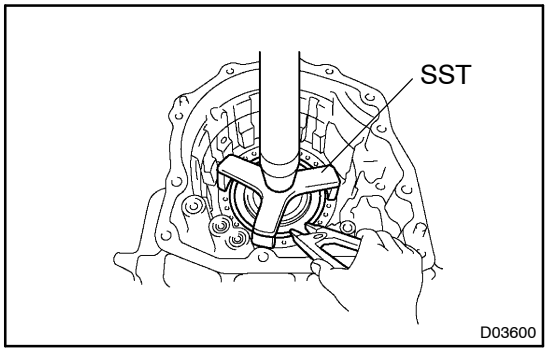
(b) Install the 2 O–rings to the 1st & reverse brake piston.

NOTICE:
- **Assemble the O–ring carefully not to have a twist and a pinching.**
- **Apply enough ATF to the O–ring prior to assembling.**



(c) Coat a 1st & reverse brake piston with ATF, install it to the transaxle case.

NOTICE:
Be careful not to damage the O–ring.



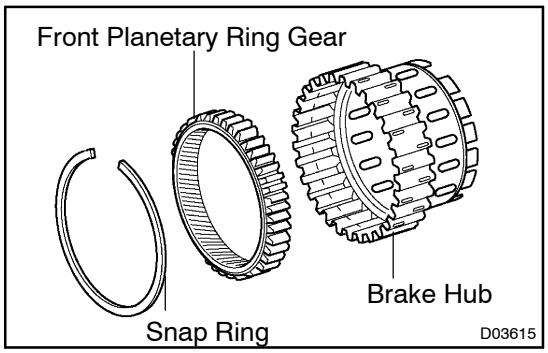
95. INSTALL 1ST & REVERSE BRAKE RETURN SPRING SUB–ASSY

(a) Place SST on the return spring and compress the return spring with a press.
SST 09387–00070

(b) Using a snap ring expander, install the snap ring to the transaxle case.

NOTICE:

- **Stop the press when the spring sheet is lowered to the place 1 – 2 mm (0.039 – 0.078 in.) from the snap ring groove, preventing the spring sheet from being deformed.**
- **Do not expand the snap ring excessively.**
- **Installing the spring sub–assembly, check all of the springs are fit in the piston correctly.**
- **The snap ring should be fixed surely in the groove of the cylinder.**
- **Fix the snap ring to the inside of the claw of the spring seat surely.**

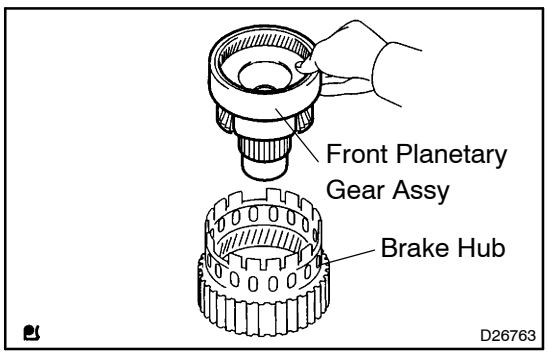


96. INSTALL FRONT PLANETARY RING GEAR

(a) Using a screwdriver, install the front planetary ring gear and snap ring to the brake hub.

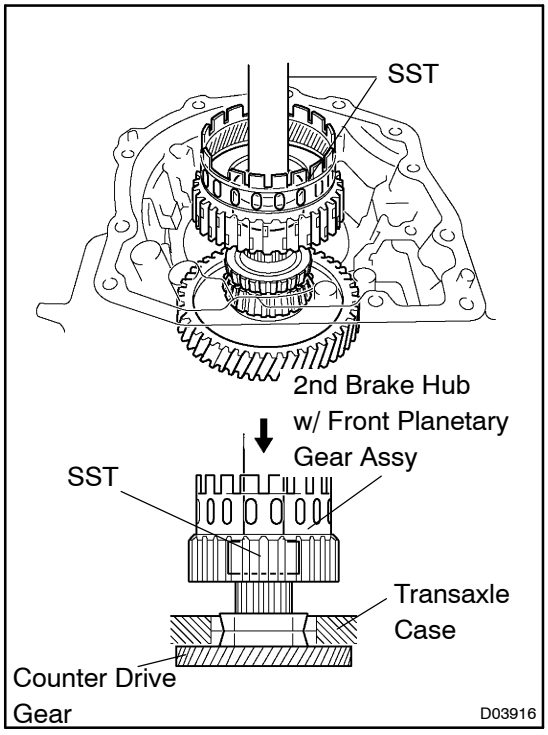
NOTICE:

Confirm the snap ring is fixed in the groove of the brake hub correctly.



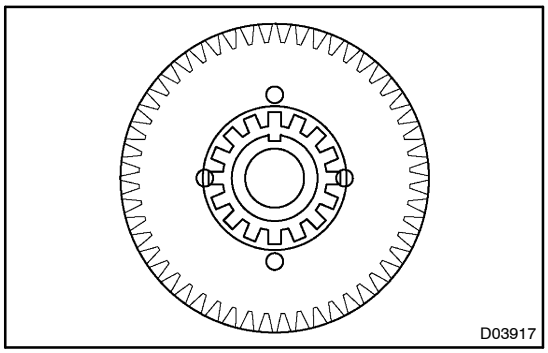
97. INSTALL FRONT PLANETARY GEAR ASSY

(a) Install the front planetary gear assy to the brake hub.

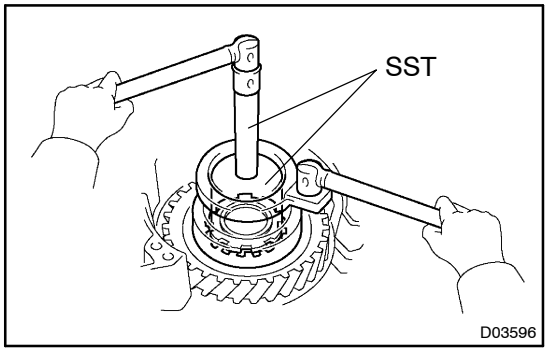


(b) Using SST and a press, press–fit the front planetary gear assy.
SST 09950–60010 (09951–00500), 09950–70010 (09951–07100)

NOTICE:
- **Do not apply excessive pressure to it.**
- **Press the inner race of LH tapered roller bearing, counter gear and front planetary gear assembly to the position where no pre–load should be applied to one pair of tapered roller bearings (left and right).**

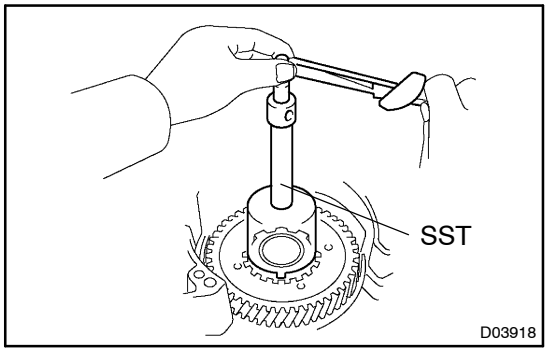


(c) Install the new washer, as shown in the illustration.



(d) Using SST, install the nut.
SST 09387–00030, 09387–00080
Torque: 210 – 350 N·m
(2,141 kgf·cm, 155 ft·lbf – 3,569 kgf·cm, 258 ft·lbf)

NOTICE:
Assemble the washer after pressing each part, then tighten the nut to minimum tightening torque.



(e) Using SST and a torque wrench, measure the turning torque of the bearing while rotating SST at 60 rpm. When the measured value is not within the specified value, gradually tighten the nut until it reaches the specified value.

SST 09387–00080

Turning torque at 60 rpm:

New Bearing

0.51 – 1.02 N·m (5.1 – 10.0 kgf·cm, 4.4 – 8.7 in.·lbf)

Used Bearing

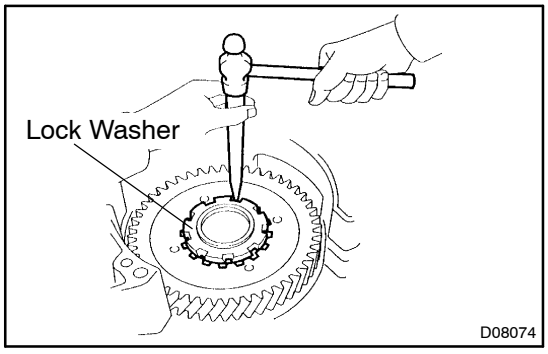
0.26 – 0.51 N·m (2.7 – 5.2 kgf·cm, 2.3 – 4.5 in.·lbf)

HINT:

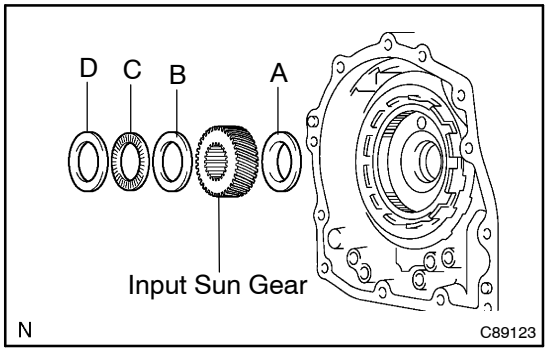
Use a torque wrench with a fulcrum length of 160 mm (6.3 in.).

(f) Tighten the nut gradually until the specified rotation torque of tapered roller bearing is measured.

Torque: 350 N·m (3,569 kgf·cm, 258 ft·lbf) (a limit)



(g) Using a chisel and hammer, stake the front lock washer.



98. INSTALL INPUT SUN GEAR

(a) Coat the 2 thrust bearings with ATF.

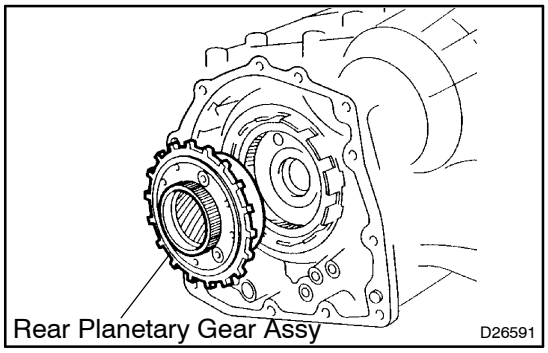
(b) Install the 2 thrust bearings, the bearing race and the front planetary sun gear to the front planetary gear assy.

NOTICE:

- **Install the bearing race on the side of the front planetary carrier. Be careful about the orientation of the race.**
- **Installing thrust bearing and front sun gears, be careful about the orientation of the parts.**
- **Install the bearing race on the side of the front sun gear. Be careful about the orientation of the race.**
- **Install the thrust bearing and the race after holding the parts on the rear planetary carrier by applying grease. Be sure the assembling order.**

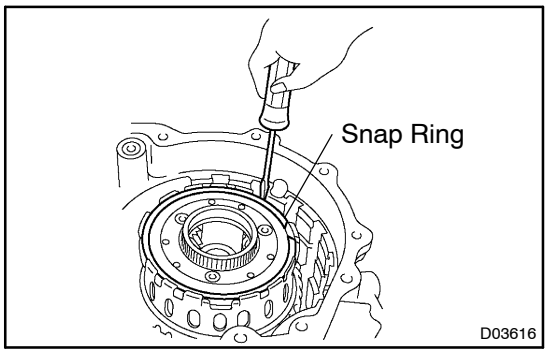
Thrust bearing and bearing race diameter: mm (in.)

	inside	outside
Thrust Bearing, A	32.5 (1.28)	56.5 (2.224)
Bearing Race, B	40.2 (1.583)	59.3 (2.335)
Thrust Bearing, C	38.6 (1.520)	59.7 (2.35)
Bearing Race, D	38.6 (1.520)	59.3 (2.335)



99. INSTALL REAR PLANETARY GEAR ASSY

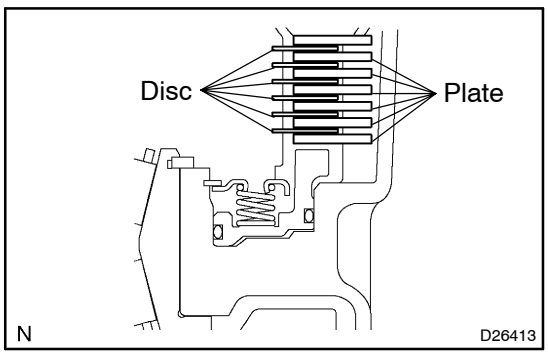
(a) Install the rear planetary gear assy to the rear planetary ring gear.



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

NOTICE:

Confirm the snap ring is fixed in the groove of the 1st & reverse brake hub correctly.



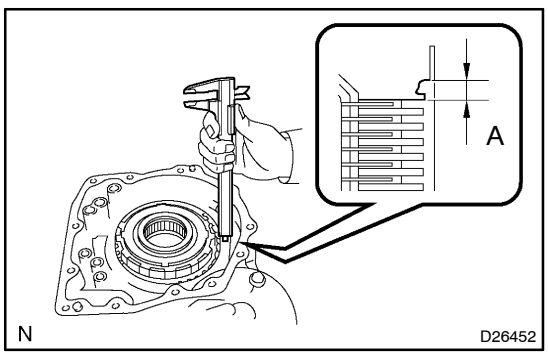
100. INSTALL 1ST & REVERSE BRAKE CLUTCH DISC

(a) Coat the 6 discs with ATF.

(b) Install the 6 plates and 6 discs.

NOTICE:

Be careful about the order of discs, plates and flange assembly.



101. INSPECT PACK CLEARANCE OF FIRST & REVERSE BRAKE

(a) Using vernier calipers, measure the distance between the disc surface and the contact surface of the 2nd brake cylinder and transaxle case(Dimension A).

(b) Select an appropriate flange so that the pack clearance will meet the specified value.

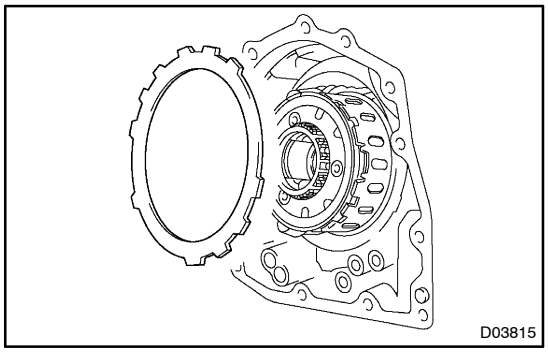
Pack clearance: 1.16 – 1.35 mm (0.0457 – 0.0531 in.)

HINT:

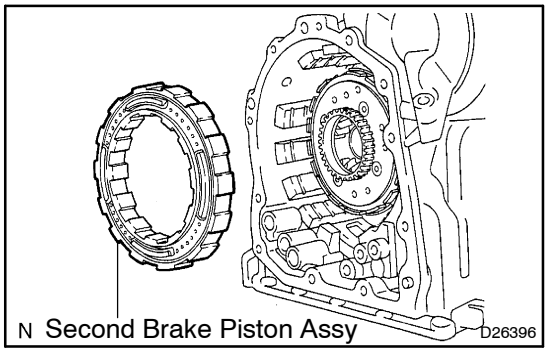
Piston stroke = Dimension A –Flange thickness

Flange thickness: mm (in.)

Mark	Thickness	Mark	Thickness
1	1.8 (0.071)	5	2.2 (0.087)
2	1.9 (0.075)	6	2.3 (0.091)
3	2.0 (0.079)	7	2.4 (0.094)
4	2.1 (0.083)	8	2.5 (0.098)

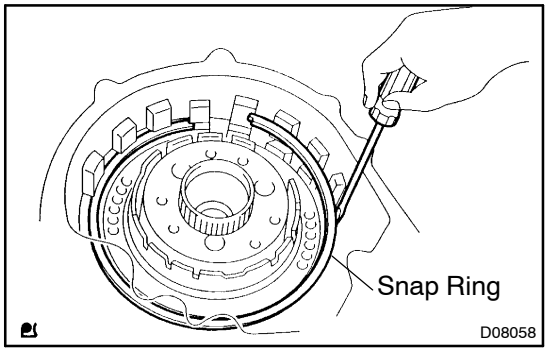


(c) Install the flange.



102. INSTALL SECOND BRAKE PISTON ASSY

(a) Install the second brake piston assy to the transaxle case.



(b) Install the snap ring and measure the inside diameter.
Inside diameter: More than 167 mm (6.57 in.)

NOTICE:

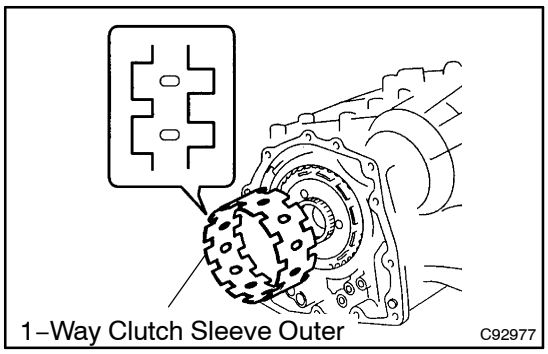
- **Because the taper snap ring has the positioning direction, check it when installing.**
- **When the diameter does not meet the specified value, replace the snap ring with new one.**
- **After assembling, confirm that there is no clearance between the second brake cylinder and the fitting surface of the cylinder in the transaxle case.**

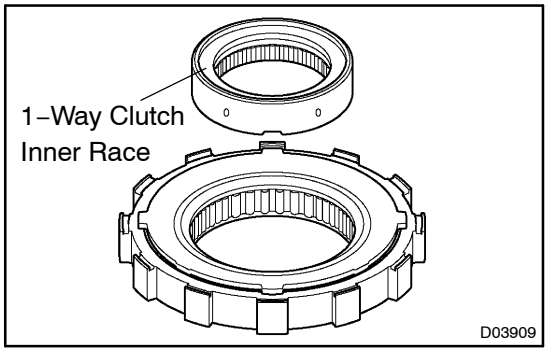
103. INSTALL 1WAY CLUTCH SLEEVE OUTER

(a) Install the 1–way clutch sleeve outer to the 2nd brake cylinder assy.

NOTICE:

Check the positioning direction of the outer sleeve.



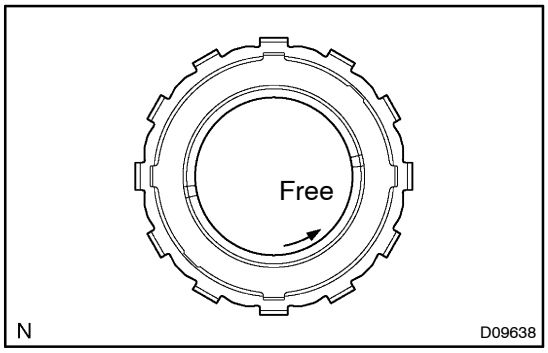


104. INSTALL 1 WAY CLUTCH ASSY

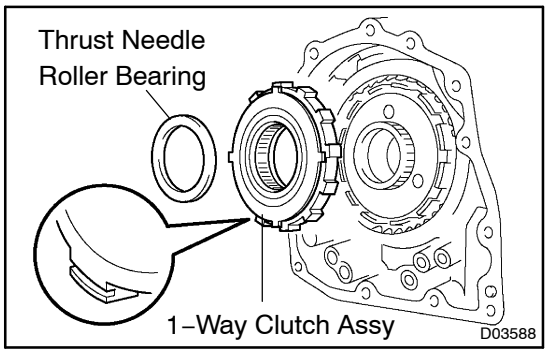
(a) Install the 1–way clutch inner race to the 1–way clutch.

NOTICE:

- **Check the direction of the inner race.**
- **Confirm that the discrimination mark can be seen by the worker.**



(b) Check the rotating direction of 1–way clutch for the lock or free operation, as shown in the illustration.



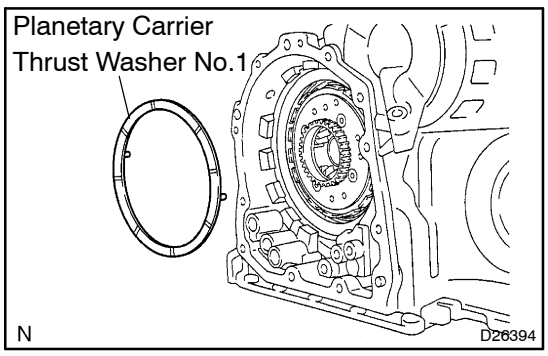
(c) Install the 1–way clutch and thrust needle roller bearing to the 1–way clutch sleeve outer.

Bearing diameter: mm (in.)

	Inside	Outside
Bearing	53.6 (2.110)	69.4 (2.732)

NOTICE:

Install the thrust bearing properly so that no–colored race will be visible.

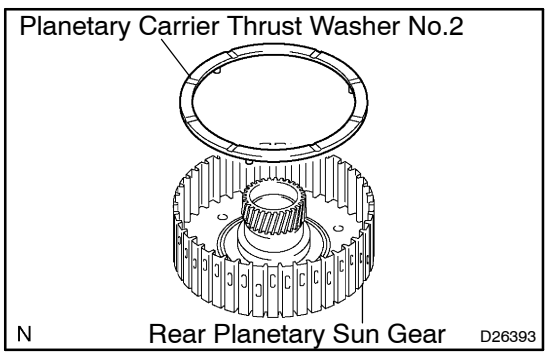


105. INSTALL PLANETARY CARRIER THRUST WASHER NO.1

(a) Coat the planetary carrier thrust washer No. 1 with yellow petrolatum, install it onto the planetary sun gear assy.

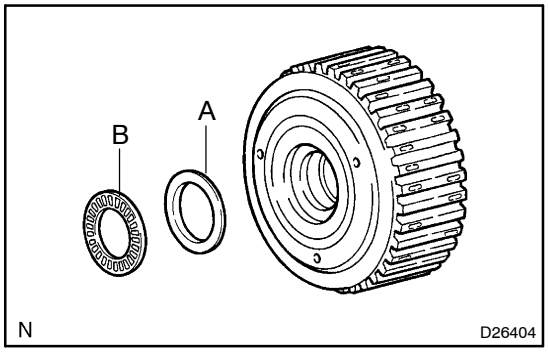
NOTICE:

After assembling, confirm that the projection should be fixed surely in the hole of the planetary sun gear assembly.



106. INSTALL REAR PLANETARY SUN GEAR ASSY

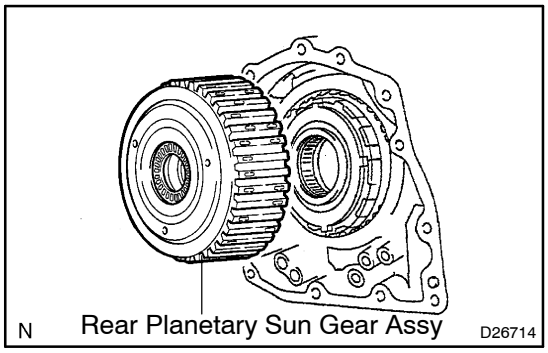
(a) Coat the planetary carrier thrust washer No. 2 with yellow petrolatum, install it onto the rear planetary sun gear.



(b) Coat the bearing with yellow petrolatum, install it onto the rear planetary sun gear.

Bearing diameter: mm (in.)

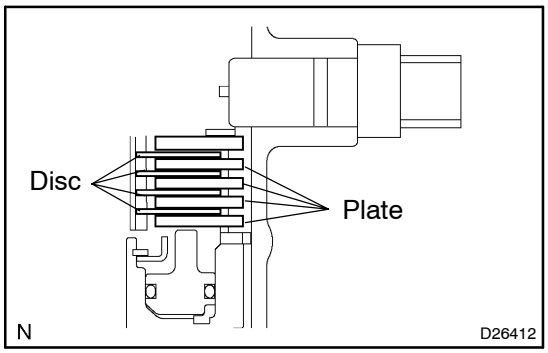
	Inside	Outside
Race, A	33.0 (1.299)	45.4 (1.787)
Bearing, B	31.85 (1.254)	45.2 (1.78)



(c) Install the rear planetary sun gear assy to the rear planetary gear.

NOTICE:

Installing the rear planetary sun gear assembly, confirm that the B1 discs engage.

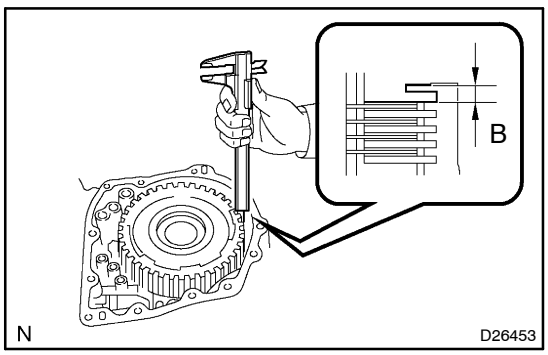


107. INSTALL 2ND BRAKE CLUTCH DISC

(a) Coat the 4 discs with ATF.

(b) Install the 4 discs and 4 plates to the transaxle case.

(c) Temporarily install the snap ring.



108. INSPECT PACK CLEARANCE OF SECOND BRAKE

(a) Using a vernier calipers, measure the distance between the disc surface and snap ring surface (Dimension B).

(b) Select an appropriate flange so that the pack clearance will meet the specified value.

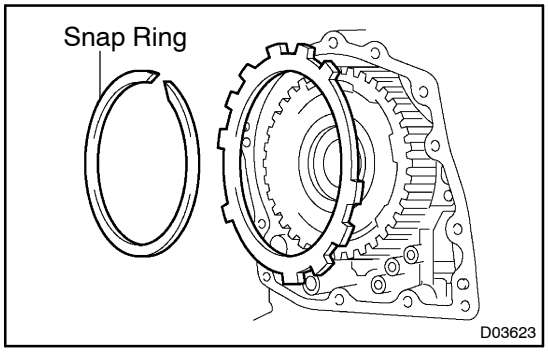
Pack clearance: 0.62 – 0.91 mm (0.0244 – 0.0358 in.)

HINT:

Piston stroke = Dimension B – Flange thickness – Snap ring thickness 1.6 mm (0.063 in.)

Flange thickness: mm (in.)

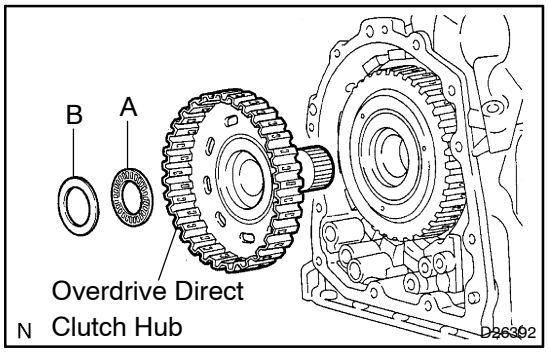
Mark	Thickness	Mark	Thickness
1	3.0 (0.118)	5	3.4 (0.134)
2	3.1 (0.122)	6	3.5 (0.138)
3	3.2 (0.126)	7	3.6 (0.142)
4	3.3 (0.130)	8	–



(c) Temporarily remove the snap ring, attach the selected flange and restore the snap ring.

NOTICE:

Secure the snap ring so that its gap is visible through the groove of the transaxle case.



109. INSTALL OVERDREVE DIRECT CLUTCH HUB SUB–ASSY

(a) Install the direct clutch hub to the planetary gear assy.

NOTICE:

Be careful not to damage the bush inside of the overdrive clutch hub during instaling.

(b) Coat the thrust bearing with ATF.

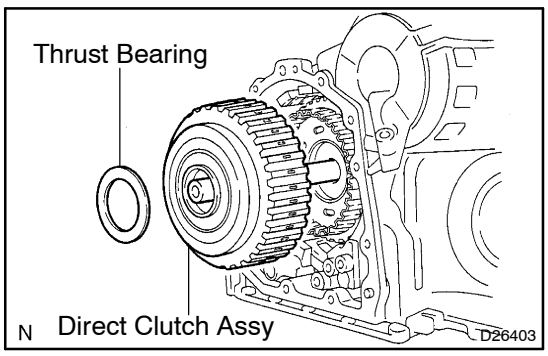
(c) Install the bearing race and the thrust bearing to the direct clutch hub.

NOTICE:

Installing the bearing, hold the part on the side of the overdrive clutch hub.

Bearing and race diameter: mm (in.)

	Inside	Outside
Bearing, A	24.7 (0.972)	39.5 (1.555)
Race, B	23.6 (0.929)	38.0 (1.496)



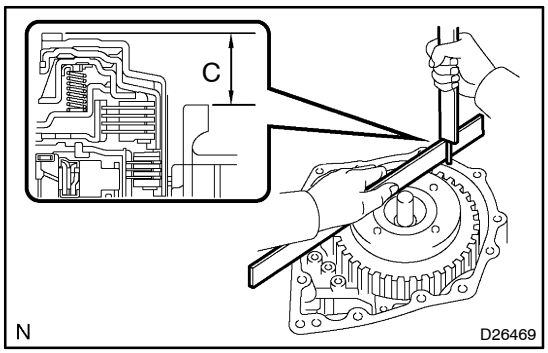
110. INSTALL DIRECT CLUTCH ASSY

(a) Coat the thrust bearing with ATF.

(b) Install the direct clutch assy and thrust bearing to the rear planetary sun gear assy.

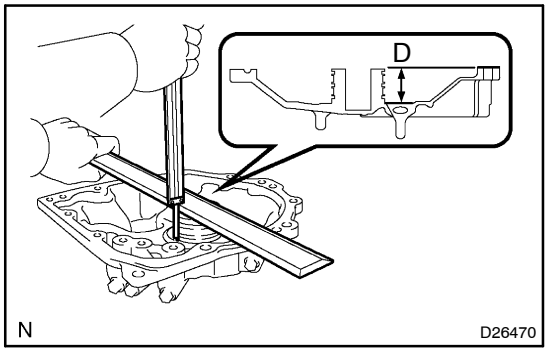
NOTICE:

The disc in the direct clutch should completely match with the hub attached outside the rear planetary sun gear. Otherwise, the rear cover can not be installed.



(c) Clean the connecter part of the transaxle case and the rear cover.

(d) As shown in the illustration, place a straight edge on the direct clutch drum and measure the distance between transaxle case and the straight edge using vernier calipers (Dimension C).



(e) Using vernier calipers and a simple straightedge, measure the position shown in the illustration.

(f) Calculate the end play value using the following formula. Select a thrust bearing which satisfies the end play value and install it.

End play: 0.244 – 0.901 mm (0.0096 – 0.0355 in.)

NOTICE:

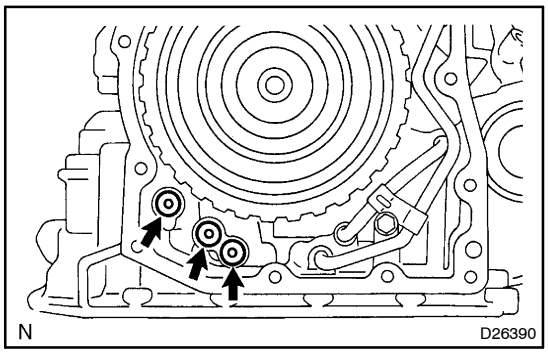
Make sure that the no colored race side is facing the direct clutch assy.

HINT:

End play = Dimension D – Dimension C

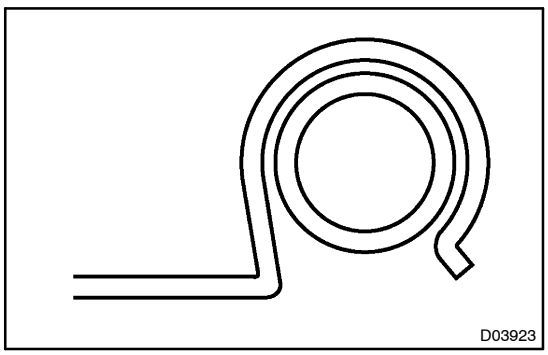
Bearing thickness and diameter : mm (in.)

Thickness	Inside	Outside
3.6 (0.1417)	56.3 (2.217)	75.7 (2.980)
3.8 (0.1496)	56.3 (2.217)	75.7 (2.980)



111. INSTALL GOVERNOR APPLY GASKET NO.1

(a) Install the 3 new governor apply gaskets No. 1 to the transaxle case.



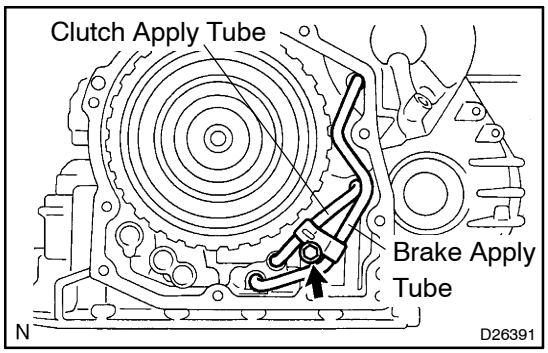
112. INSTALL BRAKE APPLY TUBE

(a) Install the clamp to the brake apply tube.

NOTICE:

Make sure to install the clamp to the apply tube before installing the apply tube to the transaxle case. This prevents the apply tube from being deformed or damaged.

(b) Install the clutch apply tube.

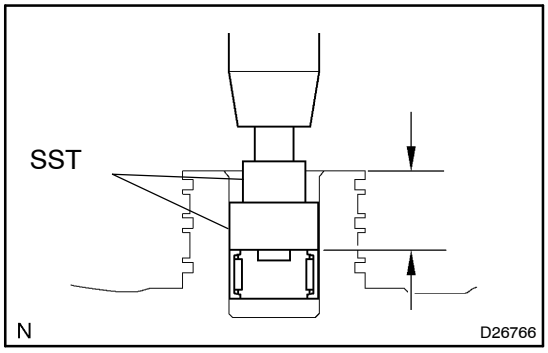


(c) Install the brake apply tube and a bolt to the transaxle case.

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

NOTICE:

Each pipe should be securely inserted until it reaches the stopper.



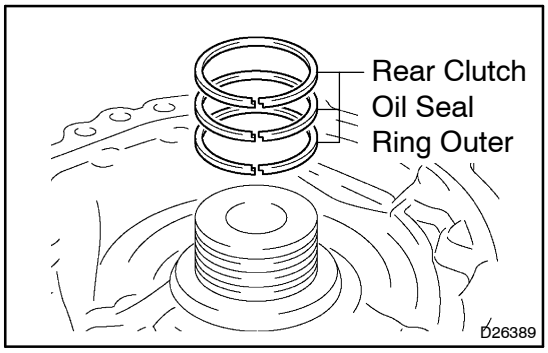
113. INSTALL NEEDLE ROLLER BEARING

(a) Using SST and a press, install the needle roller bearing to the transaxle rear cover.
SST 09950–60010 (09951–00230, 09952–06010)
Press fit depth: 20.55 – 21.25 mm (0.8091 – 0.8366 in.)

NOTICE:

- **Face the inscribed mark side of the bearing race up.**
- **Repeat the press fit until the specified value is obtained.**

(b) Coat a needle roller bearing with ATF.

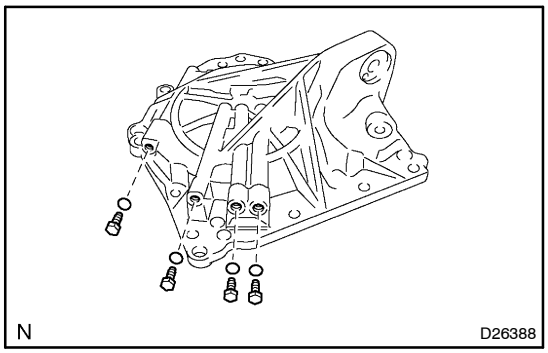


114. INSTALL REAR CLUTCH OIL SEAL RING OUTER

(a) Coat the 3 new rear clutch oil seal rings with ATF, install them to the transaxle rear cover.

NOTICE:

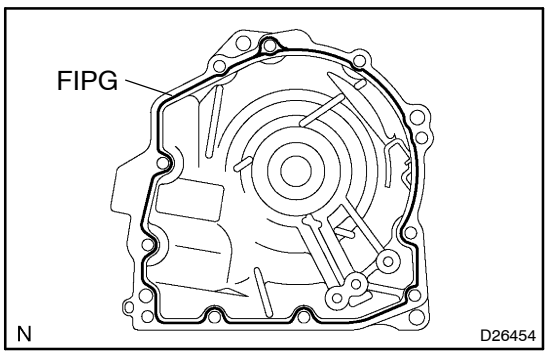
The snap ring should be fixed certainly in the groove of the drum.



115. INSTALL TRANSAXLE CASE NO.1 PLUG

(a) Install the 4 new O–ring to the 4 transaxle case No. 1 plugs.

(b) Install the 4 transaxle case No. 1 plugs to the transaxle rear cover.
Torque: 7.4 N·m (75 kgf·cm, 65 in.·lbf)



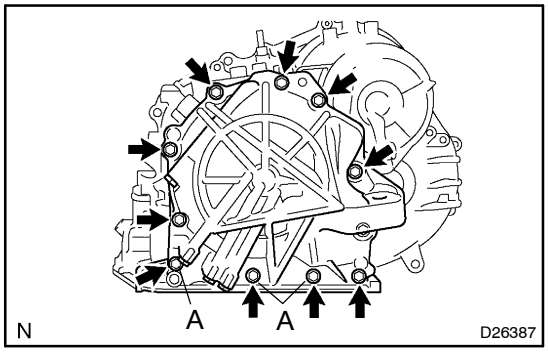
116. INSTALL TRANSAXLE REAR COVER SUB–ASSY

(a) Remove any packing material and be careful not to get oil on the contacting surfaces of the transaxle rear cover or the transaxle case.

(b) Apply FIPG to the cover.
FIPG:
Part No. 08826–00090, THREE BOND 1281 or equivalent.

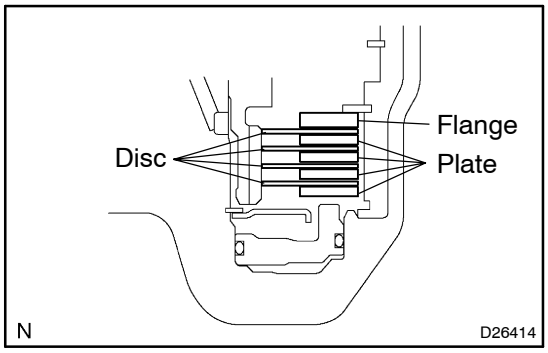
NOTICE:

Concerning about the amount of the FIPG application, the amount should be controlled to from even sealing film on entire flange surface and have slight protrusion of the FIPG all around of the connecting area. The FIPG shall be applied continuously on the flange. (Reference value of the section diameter: ϕ1.2)



(c) Apply liquid sealer to the "A" bolt threads.
Sealant:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent.

(d) Install the 11 bolts.
Torque:
Bolt A: 19.0 N·m (190 kgf·cm, 14 ft·lbf)
Other bolt: 25.0 N·m (250 kgf·cm, 18 ft·lbf)

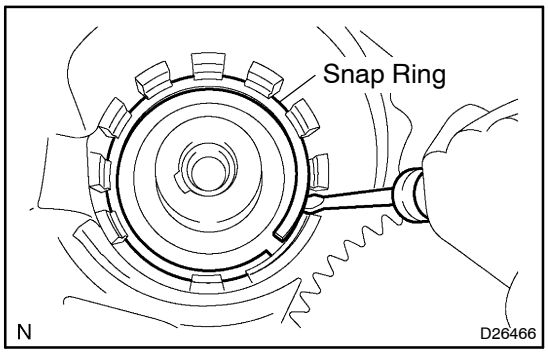


117. INSTALL UNDERDRIVE CLUTCH DISC NO.2

(a) Coat the 4 discs with ATF.

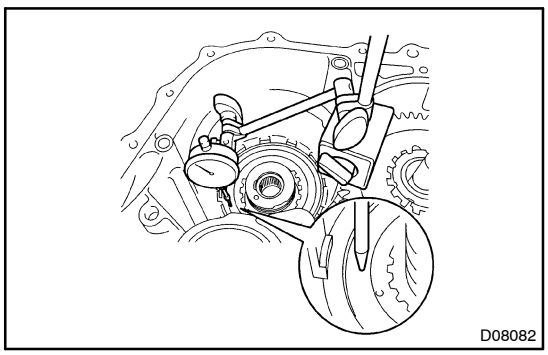
(b) Install the 4 discs, 4 plates and flange to the transaxle case.

NOTICE:
Be careful about the order of discs, plate and flange assembly.



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

NOTICE:
The snap ring should be fixed certainly in the groove of the drum.



118. INSPECT PACK CLEARANCE OF UNDERDRIVE BRAKE

(a) Using a dial indicator, measure the underdrive brake pack clearance while applying and releasing compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi).
Pack clearance: 1.81 – 2.20 mm (0.0713 – 0.0866 in.)

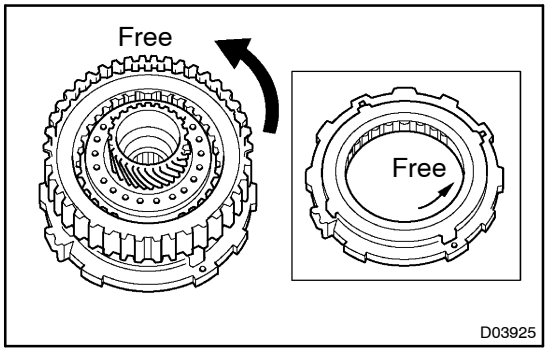
HINT:
Select an appropriate flange from the table below so that it will meet the specified value.

Flange thickness: mm (in.)

Mark	Thickness	Mark	Thickness
1	3.0 (0.118)	4	3.1 (0.122)
2	3.2 (0.126)	5	3.3 (0.130)
3	3.4 (0.134)	–	–

(b) Temporally remove the snap ring and attach to the flange.

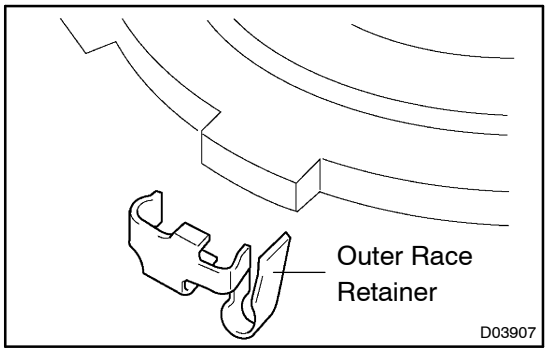
(c) Restore the snap ring.



119. INSPECT UNDERDRIVE 1 WAY CLUTCH ASSY

(a) Install the underdrive clutch assy to the 1–way clutch.

(b) Rotate the underdrive clutch assy to check the rotating direction for the lock or free operation.

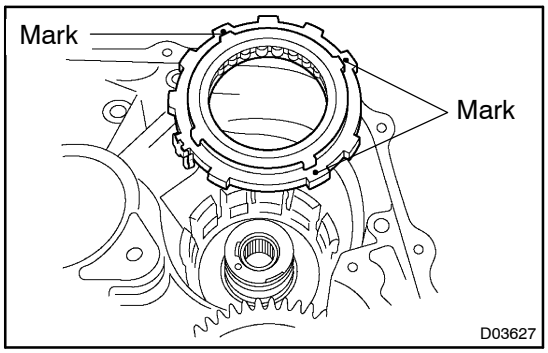


120. INSTALL UNDERDRIVE 1 WAY CLUTCH ASSY

(a) Install the outer race retainer to the 1–way clutch.

NOTICE:

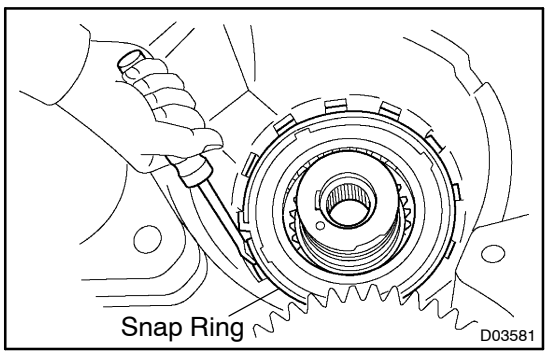
Fix the outer race retainer to the external tooth of the one way clutch surely.



(b) Install the 1–way clutch to the transaxle case.

NOTICE:

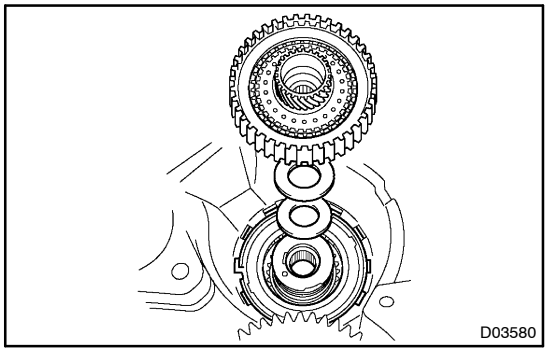
Make sure that the mark on the 1–way clutch outer race is visible.



(c) Using a screwdriver, install the snap ring to the transaxle case.

NOTICE:

The snap ring should be fixed certainly in the groove of the transaxle case as the gap exists except in the lock of teeth.



121. INSTALL UNDERDRIVE CLUTCH ASSY

(a) Coat the bearing and bearing race with petroleum jelly, install them onto the underdrive clutch.

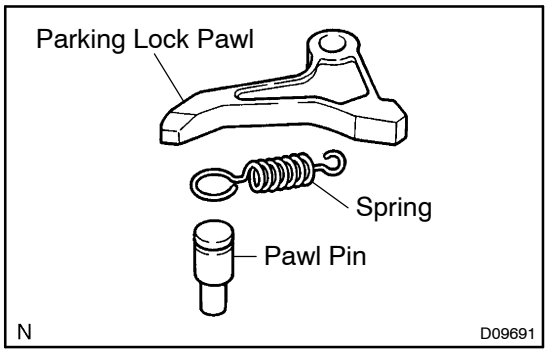
Bearing and bearing race diameter: mm (in.)

	Inside	Outside
Bearing	37.73 (1.4854)	58.0 (2.2835)
Race	29.9 (1.1772)	55.5 (2.185)

(b) Install the underdrive clutch assy to the transaxle case.

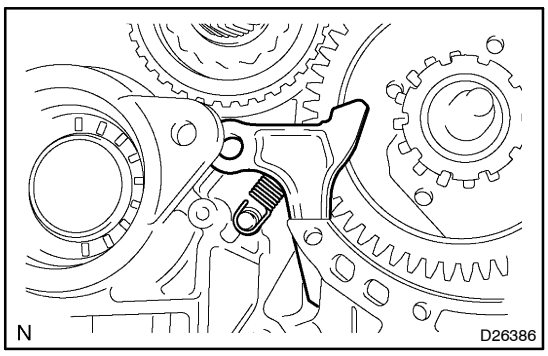
NOTICE:

Installing the underdrive clutch drum sub–assy, be sure not to damage the oil seal ring.

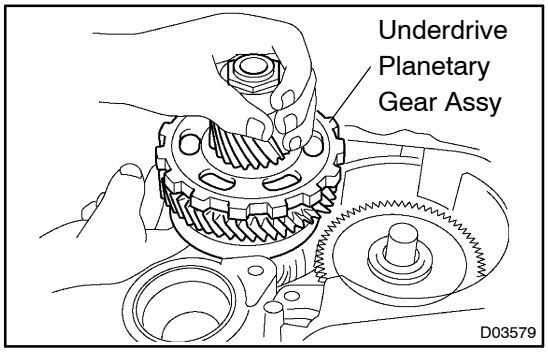


122. INSTALL PARKING LOCK PAWL

(a) Install the pawl pin and spring to the parking lock pawl.



(b) Temporarily install the parking lock pawl, shaft and spring to the transaxle case, as shown in the illustration.

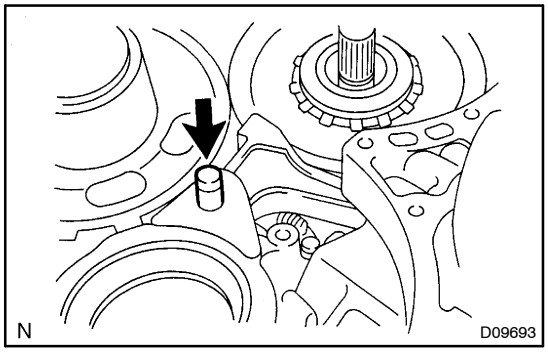


123. INSTALL UNDERDRIVE PLANETARY GEAR ASSY

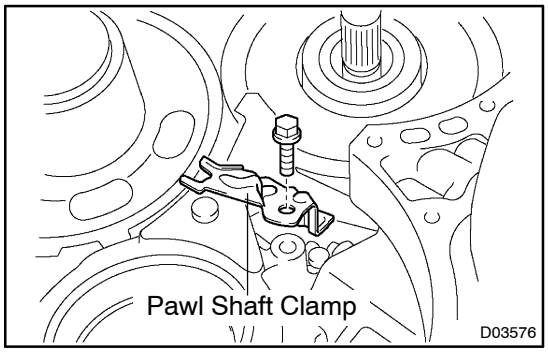
(a) Install the underdrive planetary gear assy to the transaxle case.

NOTICE:

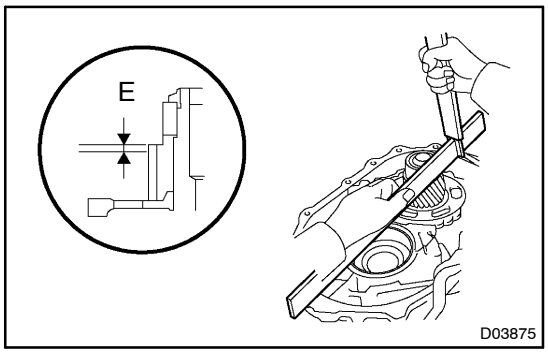
Engage all the discs of underdrive clutch and hub splines of the underdrive planetary gear assy firmly and assemble them securely.



(b) Install the parking lock pawl shaft.

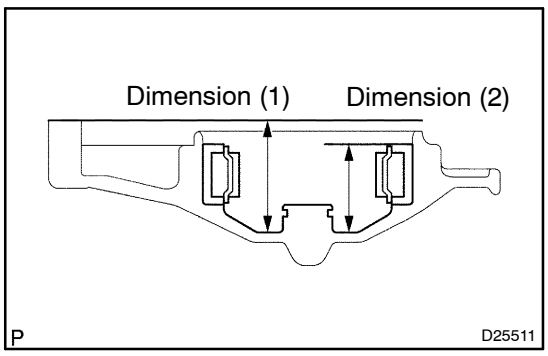


(c) Install the pawl shaft clamp with the bolt.
Torque: 9.8 N·m (100 kgf·cm, 87 in.·lbf)



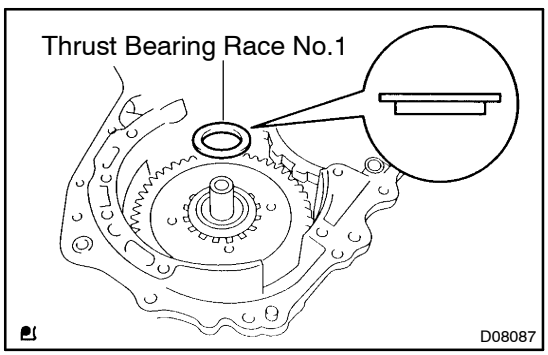
(d) Using a straight edge and vernier calipers as shown in the illustration, measure the gap between the top of the differential drive pinion in the underdrive planetary gear and contact surface of the transaxle case and housing (Dimension E).

NOTICE:
Note down the dimension E as it is necessary for the following process.



(e) As shown in the illustration, measure the 2 places of the transaxle housing, calculate the dimension F using the formula.

NOTICE:
Note down the dimension F as it is necessary for the following process.
HINT:
Dimension F = Dimension (1) – Dimension (2)

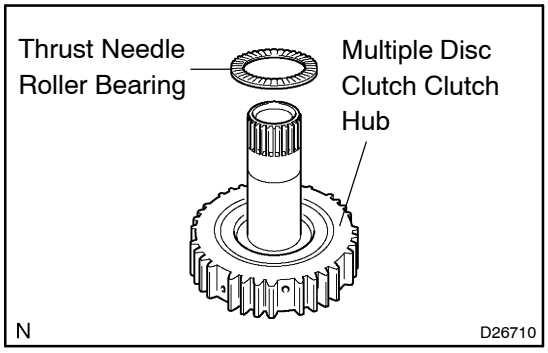


124. INSTALL MULTIPLE DISC CLUTCH CLUTCH HUB

(a) Install the thrust bearing race No.1 to the transaxle case while checking its direction.

Bearing race diameter: mm (in.)

	Inside	Outside
Bearing race	39.5 (1.555)	45.8 (1.803)

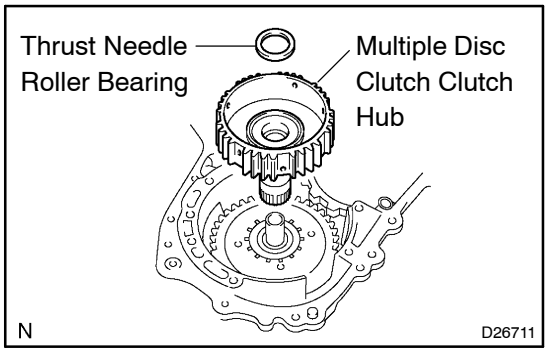


(b) Coat the thrust needle roller bearing and race with yellow petrolatum, install them onto the multiple disc clutch hub.

Thrust bearing and race diameter: mm (in.)

	Inside	Outside
Thrust Bearing	36.4 (1.433)	52.2 (2.055)

(c) Coat the needle roller bearing with ATF.

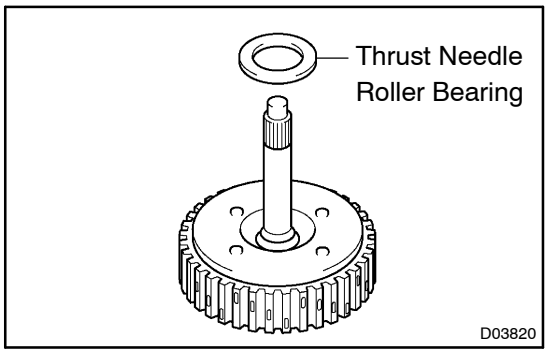


(d) Install the needle roller bearing to the multiple clutch hub.

Bearing diameter: mm (in.)

	Inside	Outside
Bearing	23.6 (0.929)	44 (1.732)

(e) Install the multiple clutch hub to the transaxle case.



125. INSTALL FORWARD CLUTCH ASSY

(a) Coat the thrust needle roller bearing with ATF.

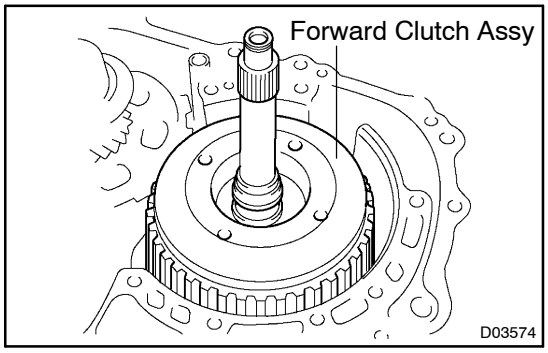
(b) Install the thrust needle roller bearing to the forward clutch.

Thrust bearing diameter: mm (in.)

	Inside	Outside
Thrust Bearing	33.58 (1.3220)	51.9 (2.043)

NOTICE:

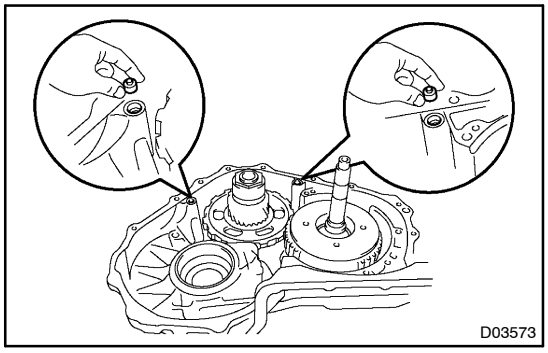
Install the thrust bearing properly so that the no colored race or blue ink jet race will be visible.



(c) Install the forward clutch to the forward clutch assy.

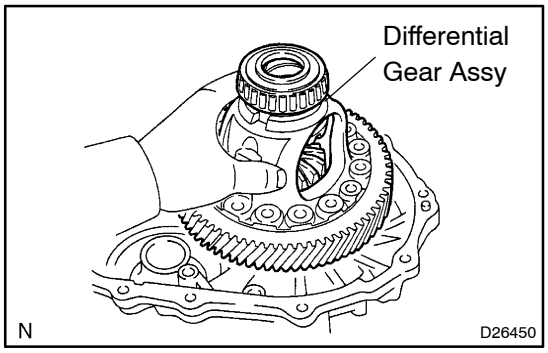
NOTICE:

- **Align the splines of all discs in the forward clutch with those of multiple clutch hub to assemble them securely.**
- **Be careful not to damage the bush inside of the forward clutch hub during installing.**



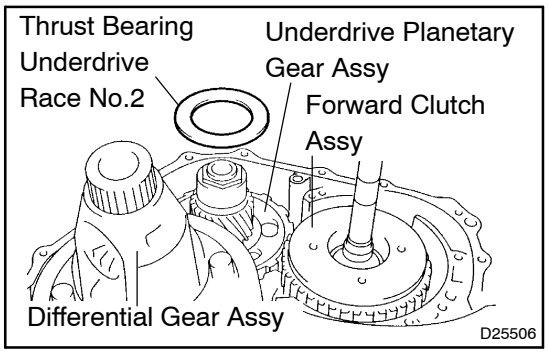
126. INSTALL OVERDRIVE BRAKE GASKET

(a) Install the 2 new overdrive brake gaskets.



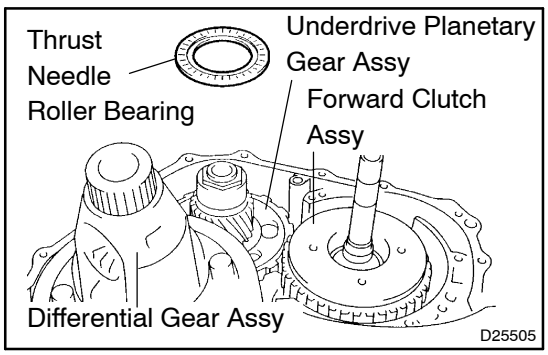
127. INSTALL DIFFERENTIAL GEAR ASSEMBLY

(a) Install the differential gear assy to the transaxle case.



128. INSTALL THRUST BEARING UNDERDRIVE RACE NO.2

(a) Install the thrust bearing underdrive race No.2 to the underdrive planetary gear assy.



129. INSTALL THRUST NEEDLE ROLLER BEARING

(a) Coat the thrust needle roller bearing with ATF.

(b) Calculate the end play value using the following formula and values of Dimension E and F that ware measured when installing cylindrical roller bearing and underdrive planetary gear. Select an appropriate underdrive planetary gear thrust bearing race No. 2 which satisfies the specified end play value, and install it.

End play: 0.498 – 0.993 mm (0.01961 – 0.03909 in.)

HINT:

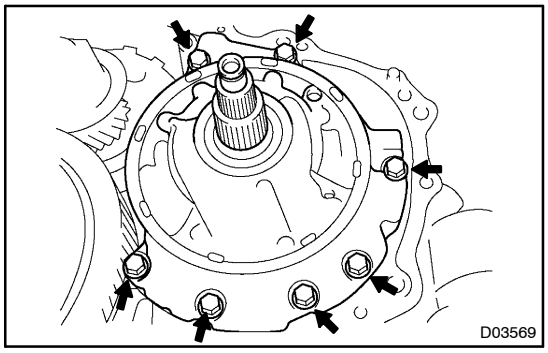
End play = Dimension F – Dimension E – thrust bearing thickness 2.5 mm (0.0984 in.) – underdrive thrust bearing race No. 2 thickness.

Race thickness: mm (in.)

F – E	Thickness
Less than 7.72 (0.3039)	3.5 (0.138)
7.72 (0.3039)	3.8 (0.150)

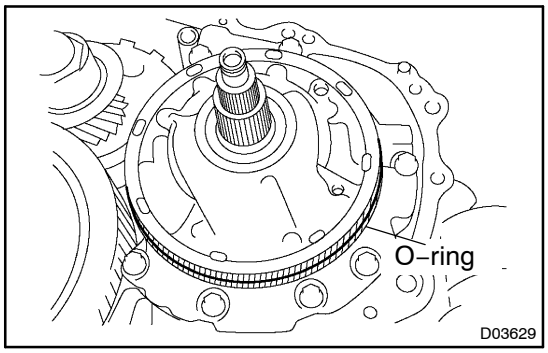
Bearing and bearing race diameter: mm (in.)

	Inside	Outside
Bearing	57.2 (2.252)	84.96 (3.345)
Bearing race	56.4 (2.22)	83 (3.268)



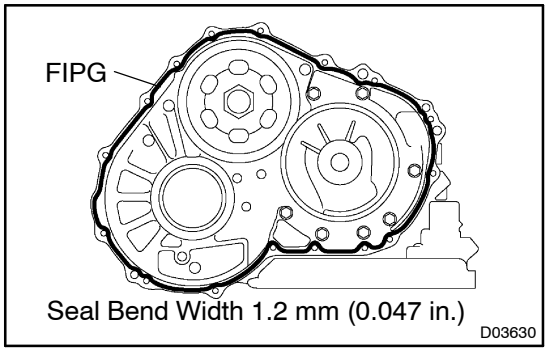
130. INSTALL OIL PUMP ASSY

(a) Install the oil pump to the transaxle case with the 7 bolts.
Torque: 22.0 N·m (226 kgf·cm, 16 ft·lbf)



(b) Coat the O–ring of oil pump with ATF.

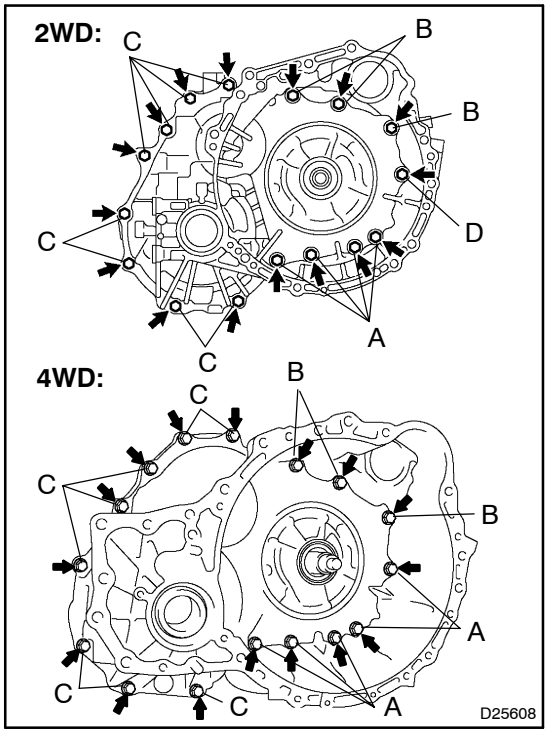
NOTICE:
Confirm the input shaft rotates smoothly with the manual operation after assembling the oil pump.



131. INSTALL TRANSAXLE HOUSING

(a) Remove any parking material and be careful not to get oil on the contacting surface of the transaxle case or transaxle housing.

(b) Apply FIPG to the transaxle case.
FIPG:
Part No. 08826–00090, THREE BOND 1281 or equivalent



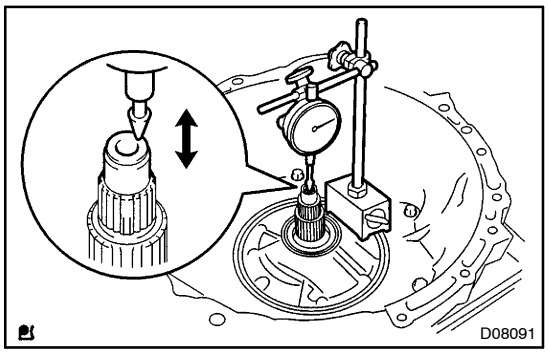
(c) Install the transaxle housing and 16 bolts to the transaxle case.

Torque:
Bolt A: 25 N·m (255 kgf·cm, 18 ft·lbf)
Bolt B: 33 N·m (337 kgf·cm, 24 ft·lbf)
Bolt C: 29 N·m (295 kgf·cm, 21 ft·lbf)
Bolt D: 22 N·m (226 kgf·cm, 16.0 ft·lbf)

HINT:
Apply seal packing or equivalent to the bolt A and D.

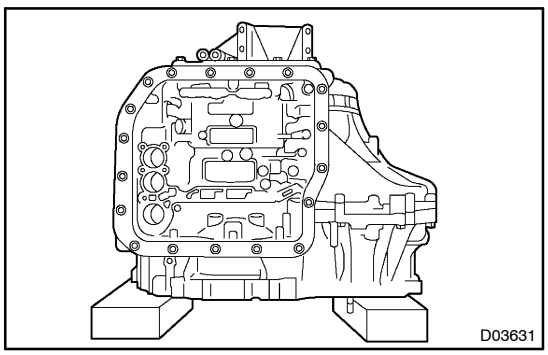
Seal packing:
THREE BOND 2403 or equivalent
Bolt length:
Bolt A: 50 mm (1.969 in.)
Bolt B: 50 mm (1.969 in.)
Bolt C: 42 mm (1.654 in.)
Bolt D: 72 mm (2.835 in.)

NOTICE:
Because the bolt A is a seal bolt, apply the seal packing to new bolts and tighten them within 10 minutes after application.



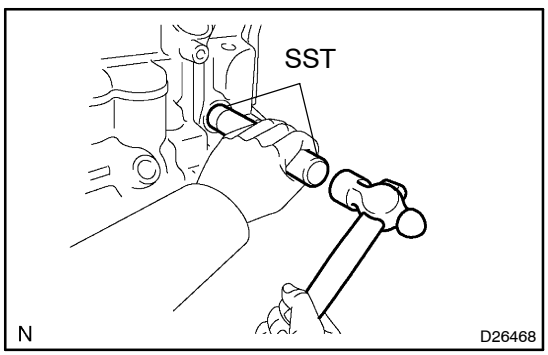
132. INSPECT INPUT SHAFT ENDPLAY

(a) Using a dial indicator, measure the input shaft end play.
End play: 0.262 – 1.249 mm (0.0100 – 0.0494 in.)



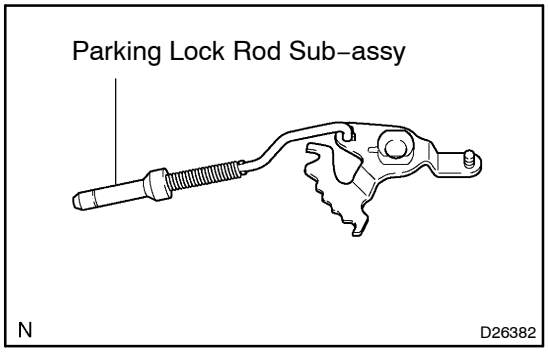
133. FIX AUTOMATIC TRANSAXLE ASSY

(a) Fix the transaxle assy.



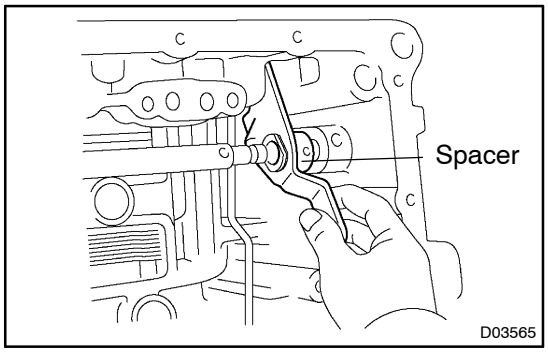
134. INSTALL MANUAL VALVE LEVER SHAFT OIL SEAL

(a) Coat a new oil seal with MP grease.
(b) Install the oil seal to the transaxle case.
SST 09950–60010 (09951–00230), 09950–70010 (09951–07100)
Oil seal drive in depth: 0 ± 0.5 mm (0 ± 0.0197 in.)



135. INSTALL PARKING LOCK ROD SUB–ASSY

(a) Install the parking lock rod to the manual valve lever.

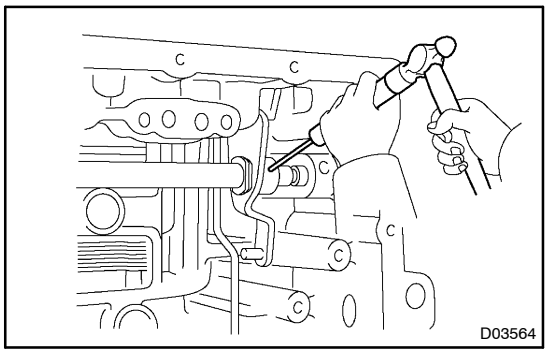


136. INSTALL MANUAL VALVE LEVER SUB–ASSY

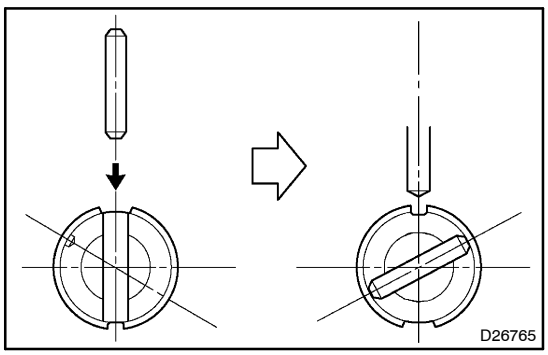
(a) Install a new spacer and manual valve lever shaft to the transaxle case.

NOTICE:

Do not damage on the oil seal during assembling the shaft to the transaxle case.



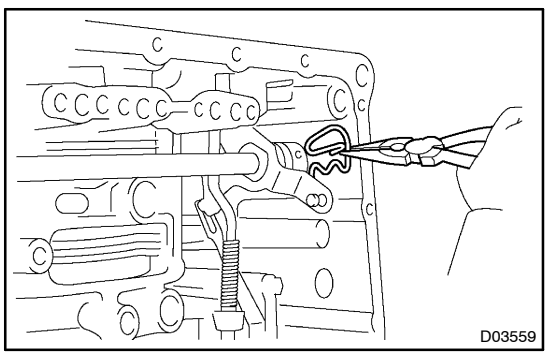
(b) Using a pin punch and hammer, drive in a new pin.



(c) Turn the spacer and the lever shaft to align the small hole for locating the staking position in the spacer with the staking position mark on the lever shaft.

(d) Using a pin punch, stake the spacer through the small hole.

(e) Check that the spacer does not turn.

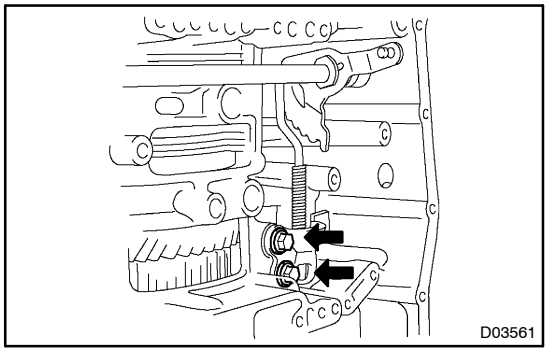


137. INSTALL MANUAL VALVE LEVER SHAFT RETAINER SPRING

(a) Using needle–nose pliers, install the retainer spring.

NOTICE:

Hang the spring on the shaft certainly.



138. INSTALL PARKING LOCK PAWL BRACKET

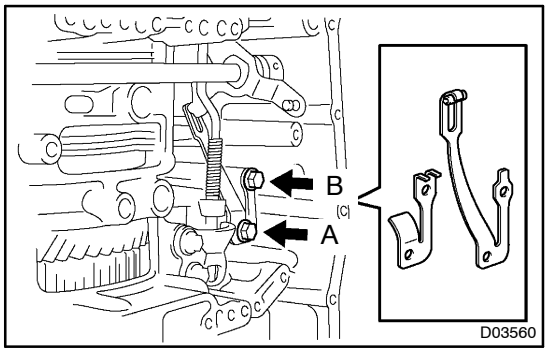
(a) Install the parking lock pawl bracket with the 2 bolts.

Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)

Bolt length: 25 mm (0.984 in.)

NOTICE:

Be sure the parking rod is placed between the parking pawl and the guide of the parking bracket when the parking bracket is assembled.



139. INSTALL MANUAL DETENT SPRING SUB–ASSY

(a) Install the manual detent spring with the 2 bolts.

NOTICE:

Make sure to install the manual detent spring and cover in this order.

HINT:

Tighten them in the order, A and B.

Torque:

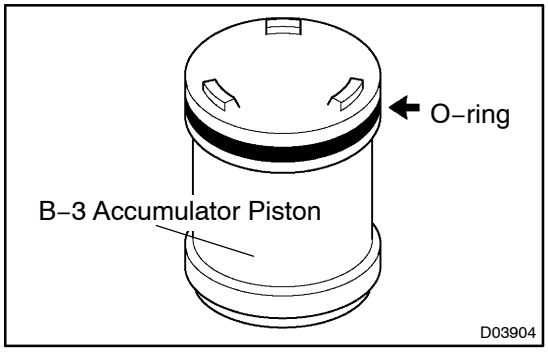
Bolt A: 20 N·m (205 kgf·cm, 15 ft·lbf)

Bolt B: 12 N·m (120 kgf·cm, 9 ft·lbf)

Bolt length:

Bolt A: 27 mm (1.063 in.)

Bolt B: 16 mm (0.630 in.)

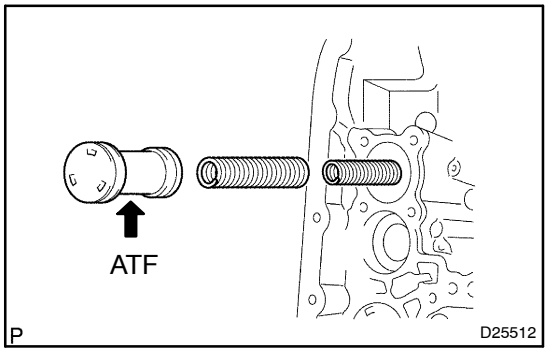


140. INSTALL B–3 ACCUMULATOR PISTON

(a) Coat a new O–ring with ATF, install it to the B–3 accumulator piston.

NOTICE:

Install the O–ring to the accumulator piston and the accumulator sleeve not to have a twist and a protrusion. Moreover, apply enough ATF prior to assembling. Be sure to the installed position.



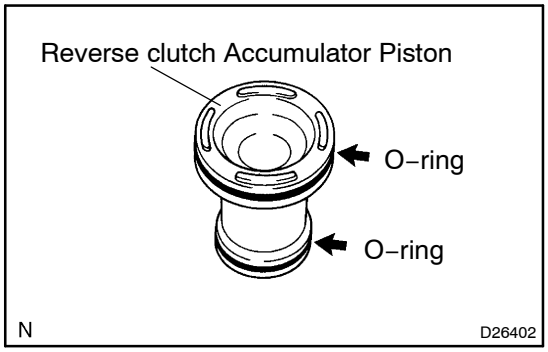
(b) Coat the piston with ATF, install it to the transaxle case.

NOTICE:

Install the springs to each accumulator piston with checking of the identification color or each spring.

Accumulator spring:

Free length Outer diameter mm (in.)	Color
Inner 62.00 (2.4409) / 15.50 (0.610)	Purple
Outer 74.23 (2.9224) / 21.70 (0.854)	Purple

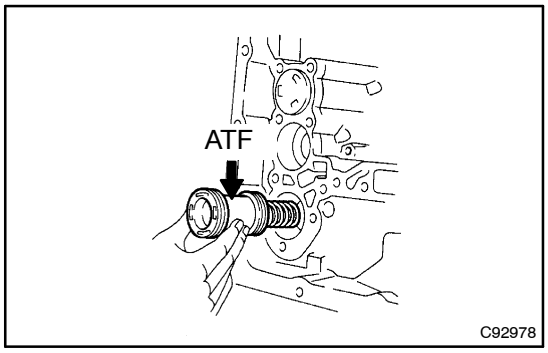


141. INSTALL REVERSE CLUTCH ACCUMULATOR PISTON

(a) Coat the 2 new O–rings with ATF, install them to the reverse accumulator piston.

NOTICE:

Install the O–ring to the accumulator piston and the accumulator sleeve not to have a twist and a protrusion. Moreover, apply enough ATF prior to assembling. Be sure to the installed position.



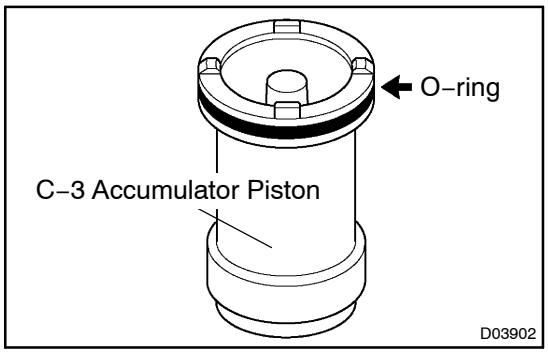
(b) Coat the piston with ATF, install it to the transaxle case.

NOTICE:

Install the springs to each accumulator piston with checking of the identification color or each spring.

Accumulator spring:

Free length Outer diameter mm (in.)	Color
60.96 (2.3999) / 14.10 (0.555)	Yellow

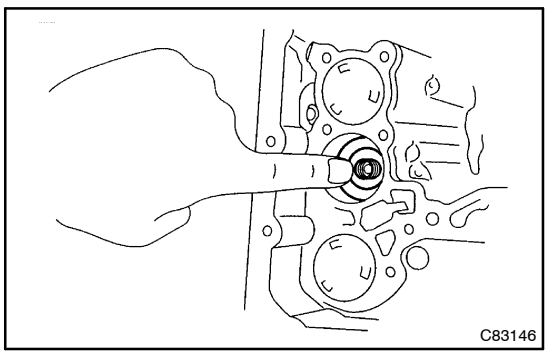


142. INSTALL C–3 ACCUMULATOR PISTON

(a) Coat a new O–ring with ATF, install it to the C–3 accumulator piston.

NOTICE:

Install the O–ring to the accumulator piston and the accumulator sleeve not to have a twist and a protrusion. Moreover, apply enough ATF prior to assembling. Be sure to the installed position.



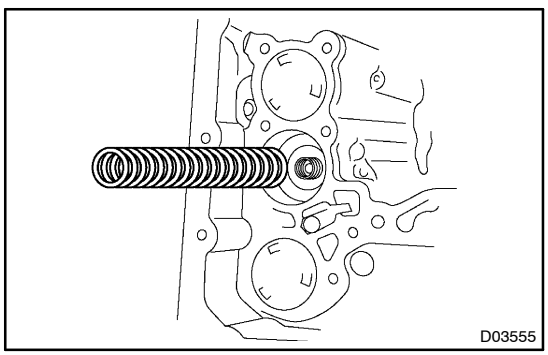
(b) Coat the piston with ATF, install it to the transaxle case.

NOTICE:

Install the springs to each accumulator piston with checking of the identification color or each spring.

Accumulator spring:

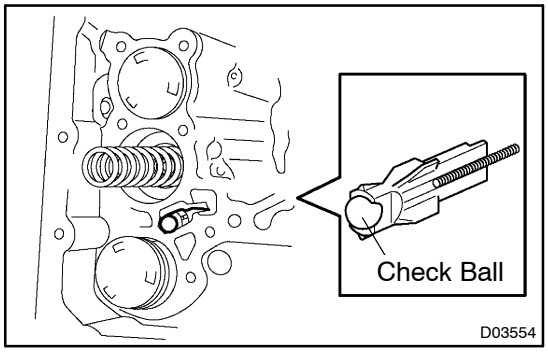
Free length Outer diameter mm (in.)	Color
72.20 (2.8425) / 19.0 (0.748)	Colorless



(c) Install the spring from the C–3 accumulator piston.

NOTICE:

Install the springs to each accumulator piston with checking of the identification color or each spring.



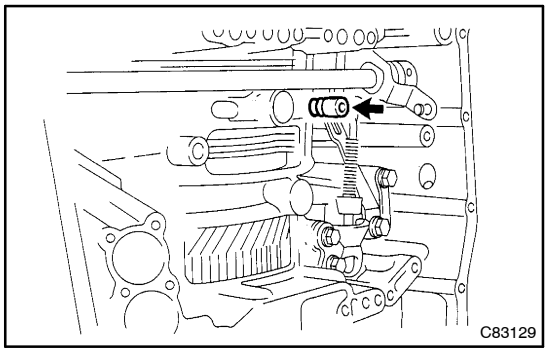
143. INSTALL CHECK BALL BODY

(a) Coat the check ball body with ATF.

(b) Install the check ball body and spring.

NOTICE:

Regarding the installation of the spring for the check ball body, be sure to place the spring in the hole in the ball body. Be careful about the parts orientation.

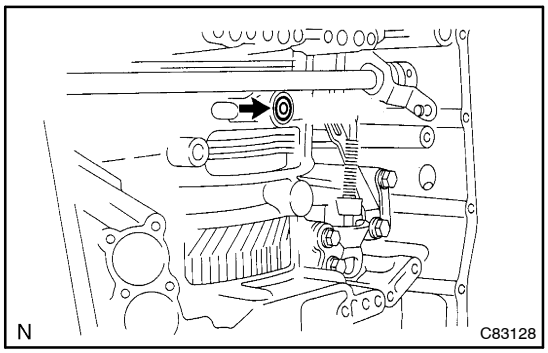


144. INSTALL BRAKE DRUM GASKET

(a) Coat a new brake drum gasket with ATF, install it to the transaxle case.

NOTICE:

Be sure not to damage the lip portion of the transaxle case brake gasket when inserting the gasket to the case. Moreover, apply enough ATF to the gasket prior to assembling. Also, be careful about the parts orientation.

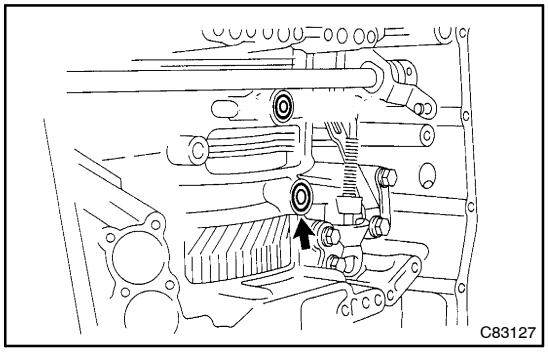


145. INSTALL TRANSAXLE CASE 2ND BRAKE GASKET

(a) Coat a new transaxle case 2nd brake gasket with ATF, install it to the transaxle case.

NOTICE:

Be sure not to damage the lip portion of the transaxle case brake gasket when inserting the gasket to the case. Moreover, apply enough ATF to the gasket prior to assembling. Also, be careful about the parts orientation.

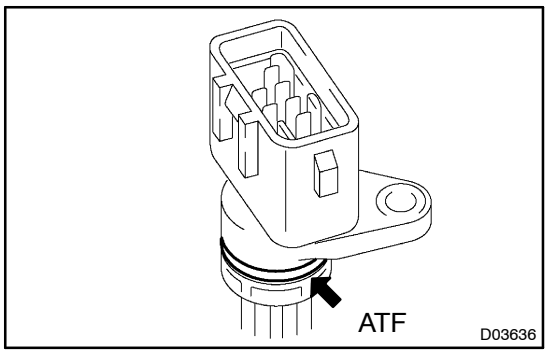


146. INSTALL GOVERNOR APPLY GASKET NO.1

(a) Coat a new governor apply gasket No. 1 with ATF, install it to the transaxle case.

NOTICE:

Be sure not to damage the lip portion of the transaxle case brake gasket when inserting the gasket to the case. Moreover, apply enough ATF to the gasket prior to assembling. Also, be careful about the parts orientation.

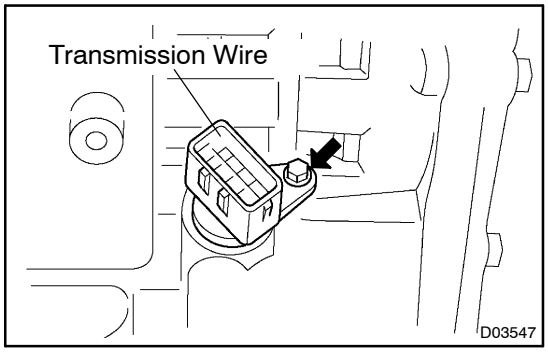


147. INSTALL TRANSMISSION WIRE

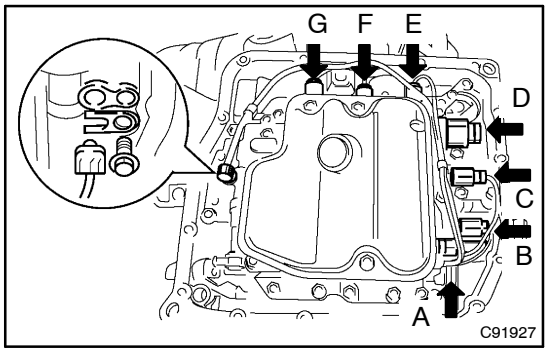
(a) Coat a new O–ring with ATF, install it to the transmission wire.

NOTICE:

Be careful about the O–ring not to have a twist, a protrusion and a pinching during installing the wire transmission to the transaxle case. Moreover, apply enough ATF to the O–ring prior to assembling.



(b) Install the transmission wire retaining bolt.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



148. CONNECT TRANSMISSION WIRE

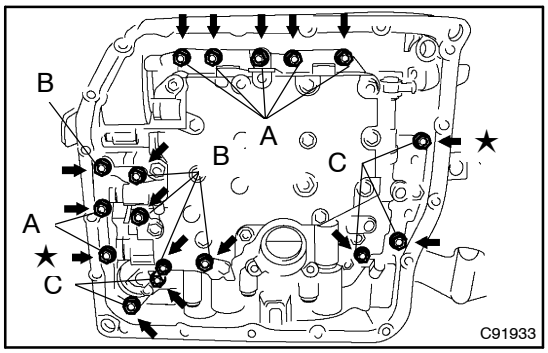
(a) Coat a O–ring of the ATF temperature sensor with ATF.

(b) Install the ATF temperature sensor, with the lock plate and bolt.
Torque: 6.6 N·m (67 kgf·cm, 58 in.·lbf)

(c) Connect the 7 solenoid connectors.

NOTICE:

- **Connect the connector to A, B, C, D, E, F, G, from shorter one.**
- **Apply ATF to the bolt.**

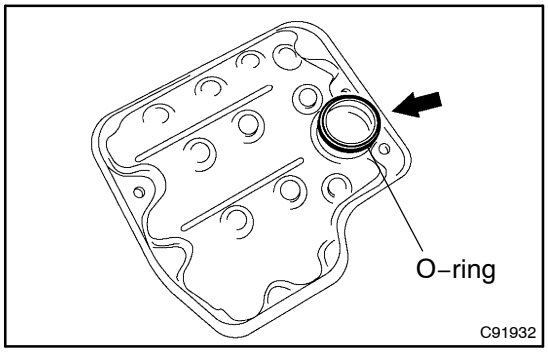


149. INSTALL TRANSMISSION VALVE BODY ASSY

(a) Make sure that the manual valve lever position, install the valve body with 17 bolts to the transaxle case.
Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)
Bolt length:
Bolt A: 41 mm (1.614 in.)
Bolt B: 57 mm (2.244 in.)
Bolt C: 25 mm (0.984 in.)

NOTICE:

- **Push the valve body against the accumulator piston spring and the check ball body to install it.**
- **When installing the valve body to the transaxle case, do not hold the solenoids.**
- **Tighten temporarily those bolts marked by ★ in the illustration first because they are positioning bolts.**

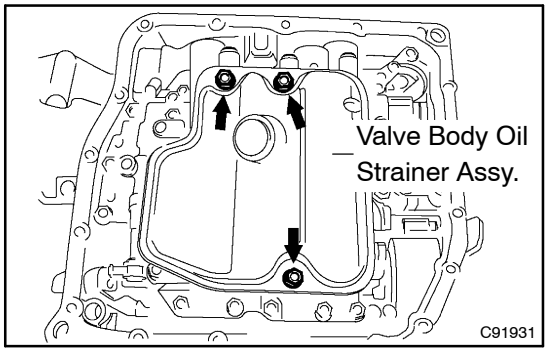


150. INSTALL VALVE BODY OIL STRAINER ASSY

(a) Coat a new O–ring with ATF, install it to the oil strainer.

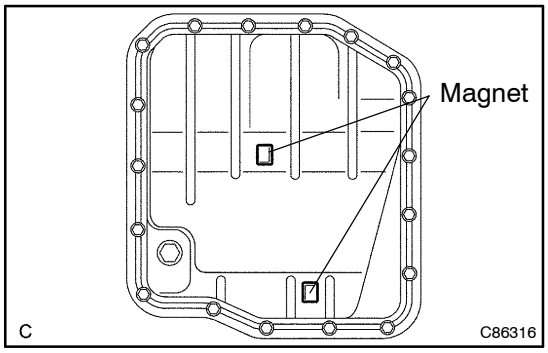
NOTICE:

Assemble the O–ring carefully not to have a twist and a pinching. Moreover, apply enough ATF to the O–ring prior to assembling.



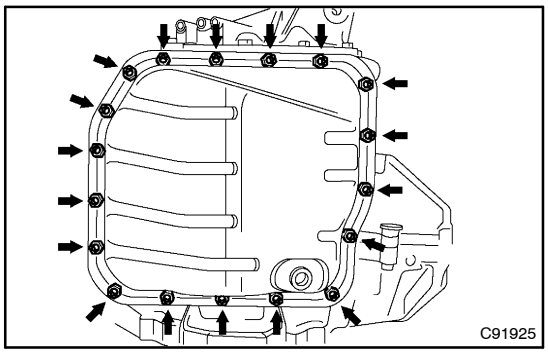
(b) Install the oil strainer and 3 bolts to the valve body.
Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)

NOTICE:
Apply ATF to the bolts.



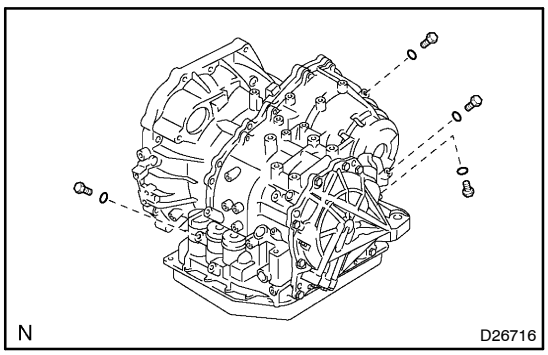
151. INSTALL AUTOMATIC TRANSAXLE OIL PAN SUB–ASSY

(a) Install the 2 magnets in the oil pan.
(b) Apply seal packing or equivalent to new 18 bolts.
Seal packing:
THREE BOND 2430 or equivalent



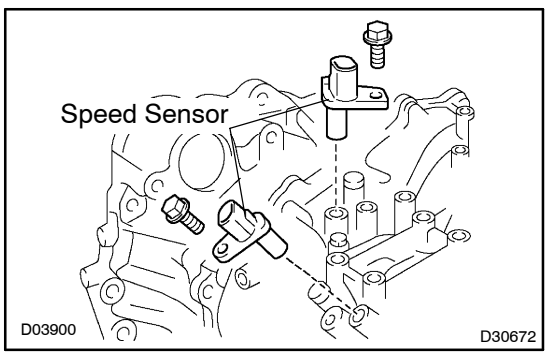
(c) Install the new oil pan gasket with the 18 bolts to the transaxle case.
Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)

NOTICE:
- **Because the bolts should be seal bolts, apply seal packing to new bolts and tighten them within 10 minutes after application.**
- **Remove any oil or grease from the contacting surface of the transaxle case and the oil pan with the gasket completely before the oil pan to the case.**



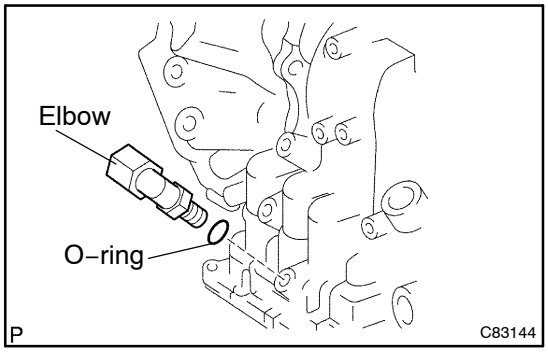
152. INSTALL TRANSAXLE CASE NO.1 PLUG

(a) Coat the 4 new O–rings with ATF, install them to the 4 transaxle case No. 1 plugs.
(b) Install the 4 transaxle case No. 1 plugs to the transaxle case.
Torque: 7.4 N·m (75 kgf·cm, 65 in.·lbf)



153. INSTALL SPEED SENSOR

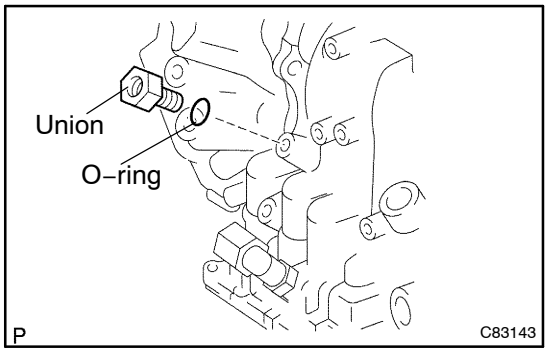
(a) Install them to the 2 sensors.
(b) Install the 2 sensors to the transaxle case with the 2 bolts.
Torque: 11.0 N·m (115 kgf·cm, 8 ft·lbf)



154. INSTALL OIL COOLER TUBE UNION (OUTLET OIL COOLER UNION)

(a) Coat a new O–ring with ATF, install it to the elbow.

(b) Install the elbow to the transaxle case.
Torque: 27 N·m (276 kgf·cm, 20 ft·lbf)



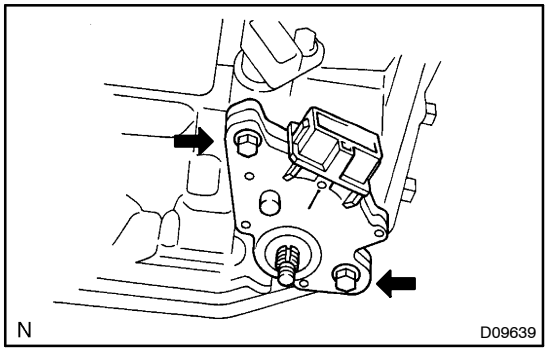
155. INSTALL OIL COOLER TUBE UNION (INLET OIL COOLER UNION)

(a) Coat a new O–ring with ATF, install it to the union.

(b) Install the union to the transaxle case.
Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

156. INSTALL BREATHER PLUG HOSE

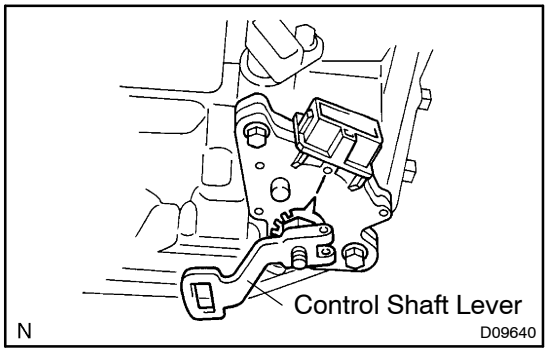
(a) Install the breather plug hose into the transaxle case certainly.



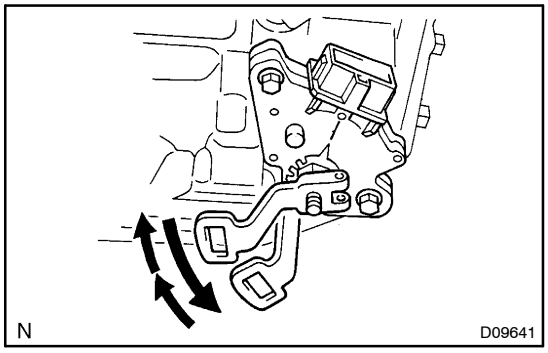
157. INSTALL PARK/NEUTRAL POSITION SWITCH ASSY

(a) Install the park/neutral position switch onto the manual valve lever shaft and temporarily install the 2 adjusting bolts.

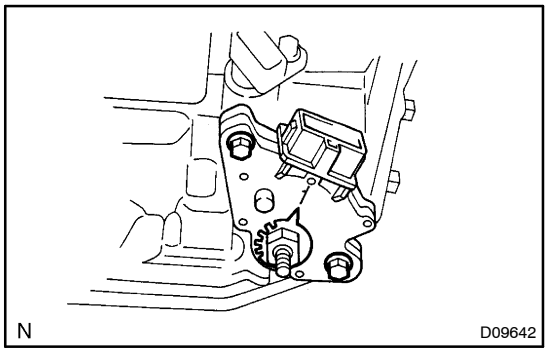
(b) Install a new nut stopper and nut.
Torque: 6.9 N·m (70 kgf·cm, 61 in.·lbf)



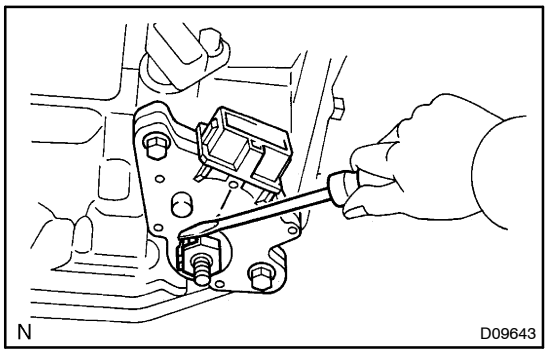
(c) Temporarily install control shaft lever.



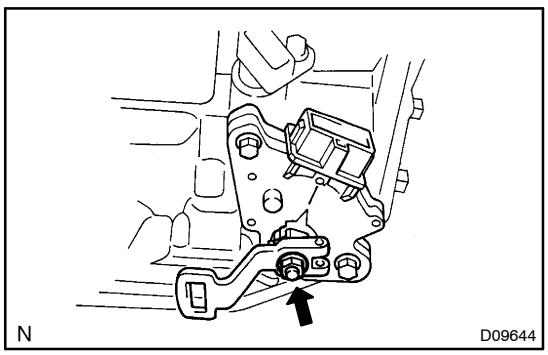
(d) Turn the lever counterclockwise until it stops, and then turn it clockwise 2 notches.
(e) Remove the control shaft lever.



(f) Align the groove with neutral basic line.
(g) Tighten the 2 bolts.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)



(h) Using a screwdriver, stake the nut with the nut stopper.



(i) Install the control shaft lever, washer and nut.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)

158. INSTALL SPEEDOMETER DRIVEN HOLE (ATM) COVER SUB–ASSY

(a) Coat a new O–ring with ATF and install it to the speedometer driven hole cover.
(b) Install the bolt and speedometer driven hole cover sub–assy to the transaxle assy.
Torque: 6.9 N·m (70 kgf·cm, 61 ft·lbf)