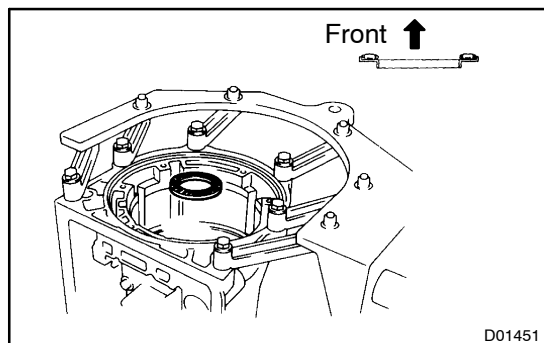


## REASSEMBLY

### 1. INSTALL TRANSMISSION CASE ON OVERHAUL ATTACHMENT

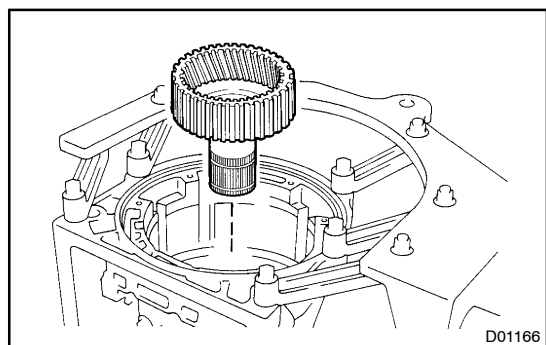


### 2. INSTALL REAR PLANETARY RING GEAR

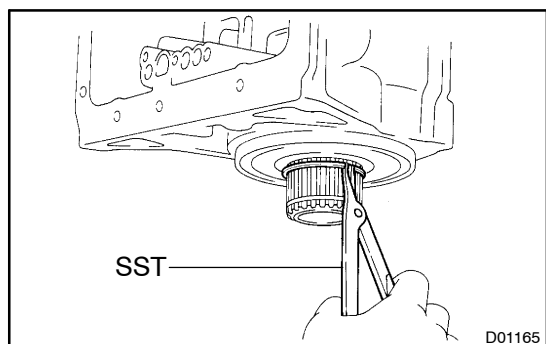
(a) Install the assembled bearing & race.

**Assembled bearing & race diameter: mm (in.)**

	Inside	Outside
Assembled bearing & race	52.9 (2.083)	70.6 (2.780)

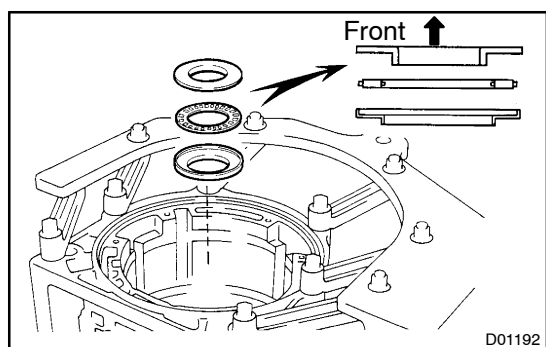


(b) Install the rear planetary ring gear.



(c) Using SST, install the snap ring.

SST 09350-03002 (09350-07070)

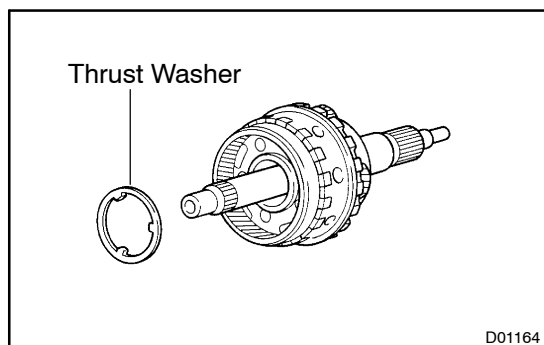


### 3. INSTALL OUTPUT SHAFT WITH CENTER AND REAR PLANETARY GEAR

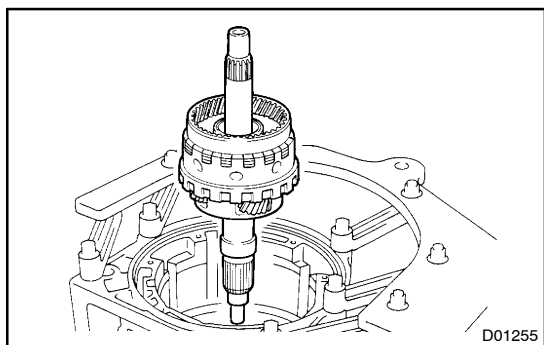
(a) Install the 2 races and bearing onto the rear planetary ring gear.

**Bearing and race diameter: mm (in.)**

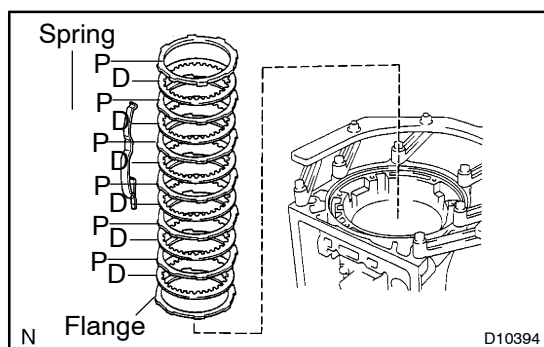
	Inside	Outside
Race	39.2 (1.543)	56.8 (2.236)
Bearing	40.7 (1.602)	57.0 (2.244)
Race	41.2 (1.620)	59.8 (2.354)



- (b) Install the thrust washer to the output shaft with center & rear planetary gear.



- (c) Install the output shaft with center & rear planetary gear.



#### 4. INSTALL FRONT PLANETARY GEAR

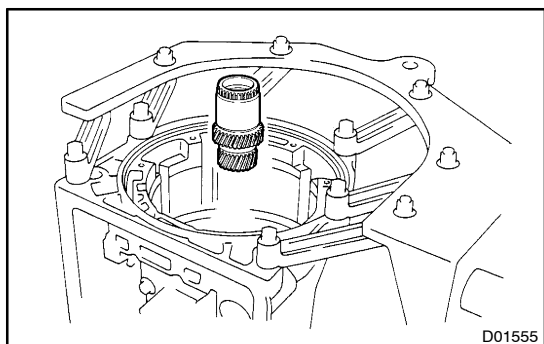
- (a) Install the spring to the case.  
(b) Install the 2nd brake pack (6 plates, 6 discs and flange).

**Install in order: P = Plate, D = Disc**

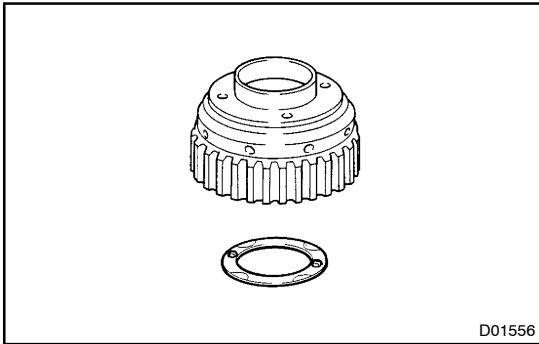
**Flange – D – P – D – P – D – P – D – P – D – P – D – Flange**

**Flange thickness: mm (in.)**

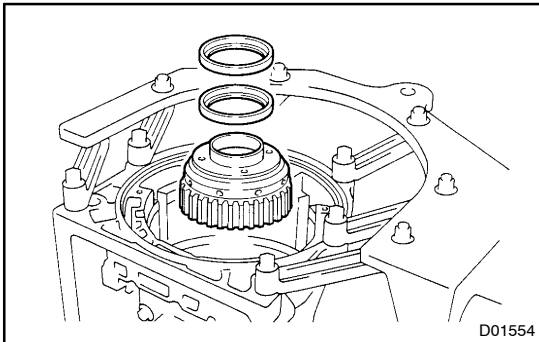
No.	Thickness	No.	Thickness
21	2.1 (0.083)	27	2.7 (0.106)
23	2.3 (0.091)	29	2.9 (0.114)
25	2.5 (0.098)	31	3.1 (0.122)



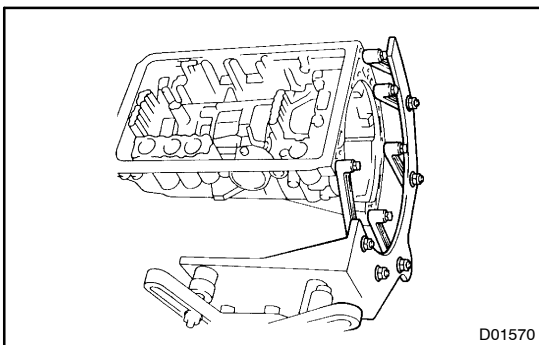
- (c) Install the front & center planetary sun gear from the case.



- (d) Coat the thrust washer, with petroleum jelly and install it onto front planetary gear.

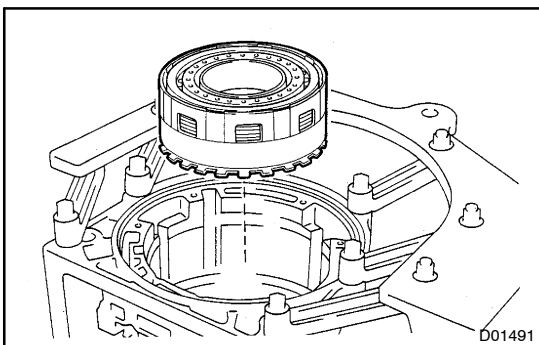


- (e) Install the front planetary gear and 2 washers from the case.

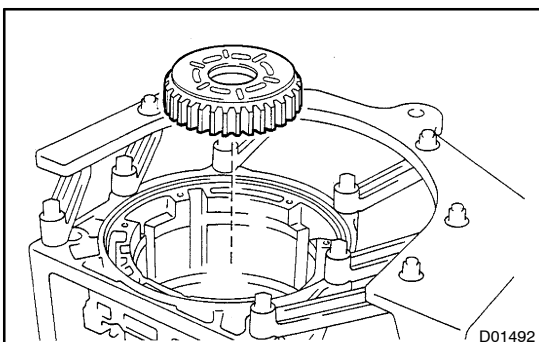


## 5. INSTALL MULTIPLE DISC BRAKE AND NO.1 ONE-WAY CLUTCH

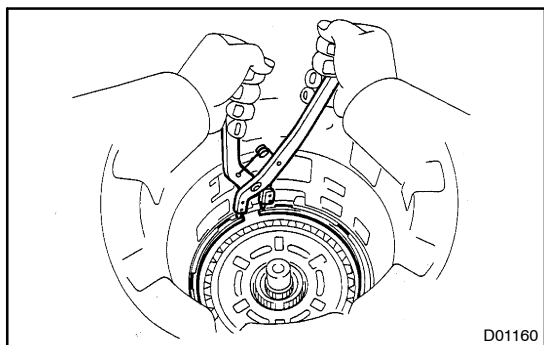
- (a) Lay the transmission case.



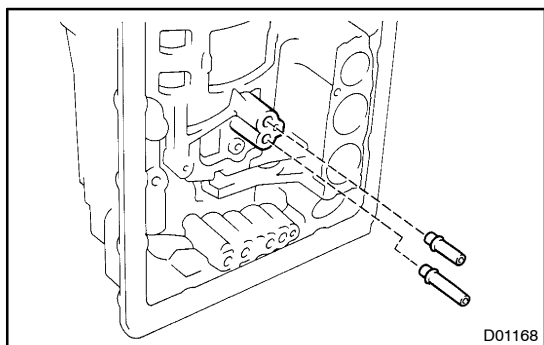
- (b) Install the multiple disc brake to the case.



- (c) Install the No.1 one-way clutch to the multiple disc brake.

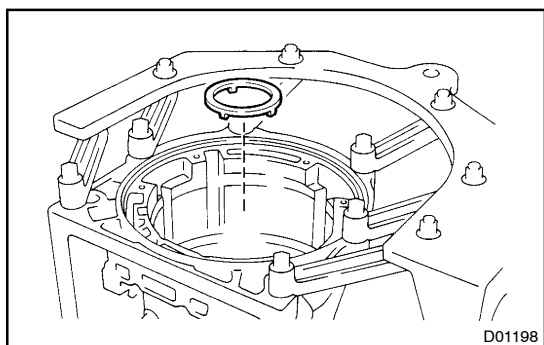


- (d) Using SST, install the snap ring.  
SST 09350-30020 (09350-07060)



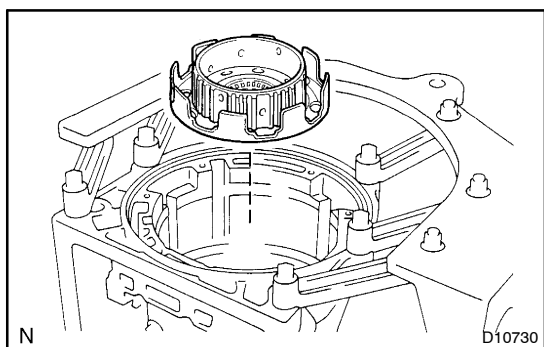
## 6. INSTALL BRAKE DRUM GASKET

- (a) Coat 2 new gaskets with ATF.  
(b) Install the 2 brake drum gaskets.

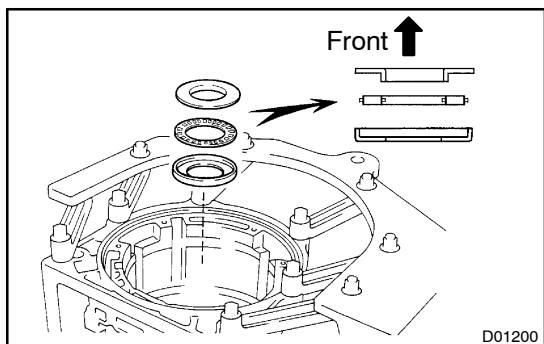


## 7. INSTALL SUN GEAR INPUT DRUM

- (a) Install the thrust washer.



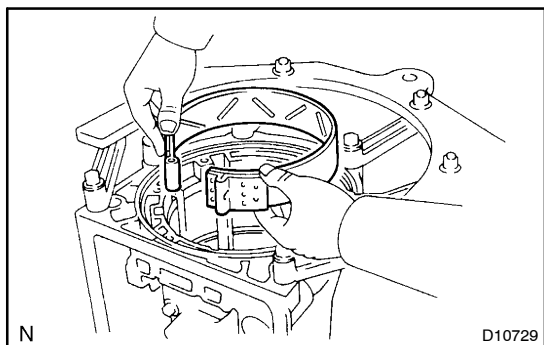
- (b) Install the sun gear input drum.



- (c) Coat the bearing, 2 races with petroleum jelly and install them onto the sun gear input drum.

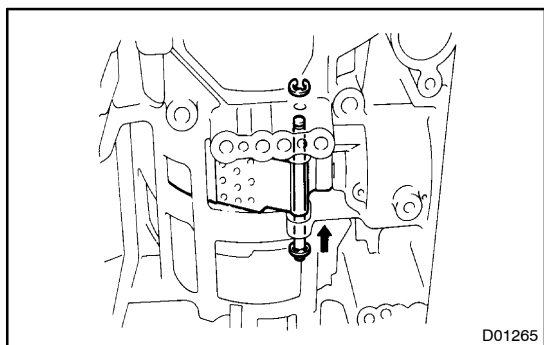
**Bearing and race diameter: mm (in.)**

	Inside	Outside
Race	32.5 (1.280)	59.0 (2.323)
Bearing	43.5 (1.712)	59.8 (2.354)
Race	43.5 (1.712)	61.5 (2.421)

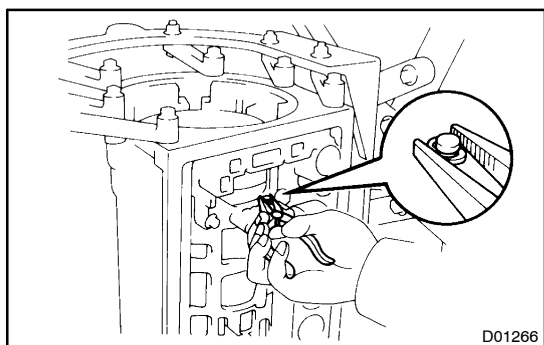


## 8. INSTALL 3RD COAST BRAKE BAND

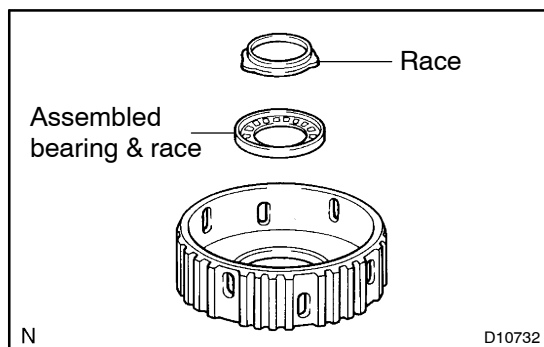
- (a) Install the 3rd coast brake band to the transmission case.



- (b) Install the E-ring to the pin.  
(c) Install the pin through the brake band.



- (d) Using a needle nose plier, install the E-ring to the pin.

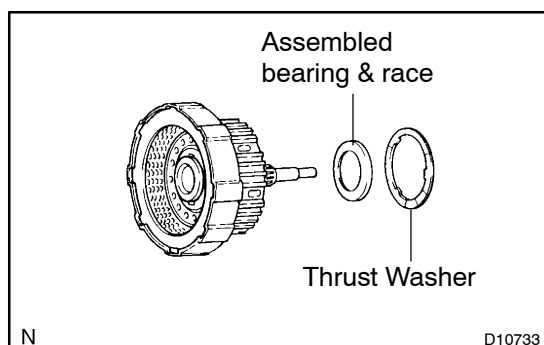


## 9. INSTALL DIRECT CLUTCH WITH FORWARD CLUTCH

- (a) Coat the assembled bearing & race, race with petroleum jelly and install them onto the forward clutch hub.

**Assembled bearing & race and diameter:**  
**mm (in.)**

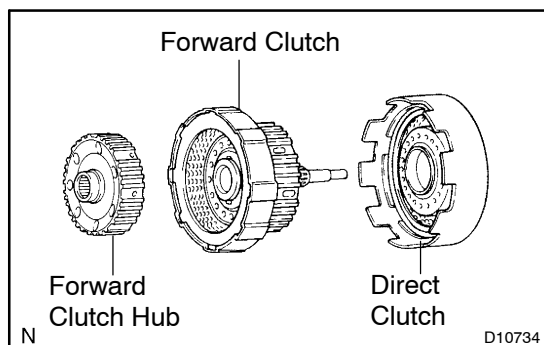
	Inside	Outside
Assembled bearing & race	26.3 (1.035)	44.0 (1.732)
Race	26.2 (1.031)	41.1 (1.618)



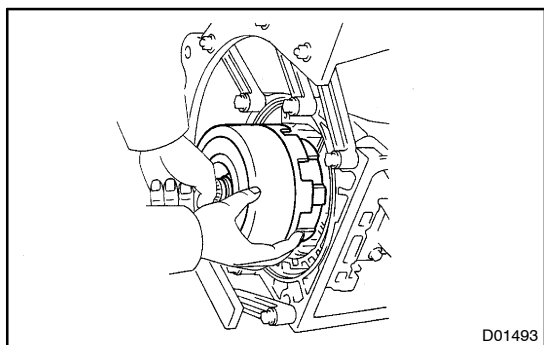
- (b) Install the assembled bearing & race and thrust washer to the forward clutch.

**Assembled bearing & race diameter: mm (in.)**

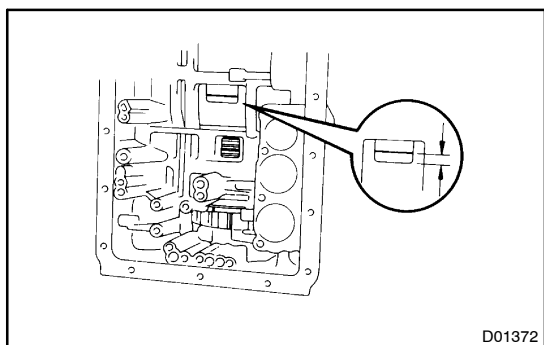
	Inside	Outside
Assembled bearing & race	33.5 (1.319)	47.8 (1.882)



- (c) Install the direct clutch and forward clutch hub to the forward clutch.



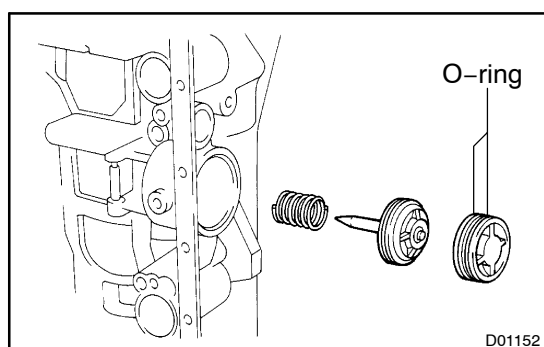
- (d) Insert the direct clutch with forward clutch to the case.



- (e) With the case set upright, using vernier calipers, measure the distance between the sun gear input drum and direct clutch drum.

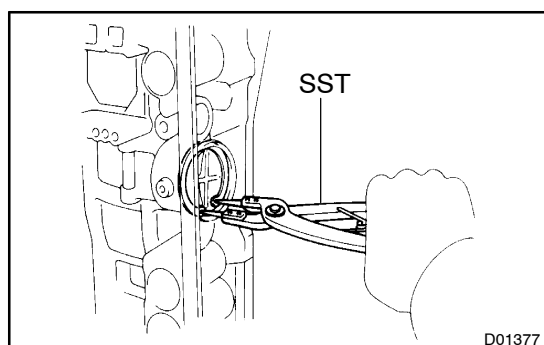
**Height: 4.1 – 6.0 mm (0.161 – 0.236 in.)**

If the height is non-standard, check for improper installation.

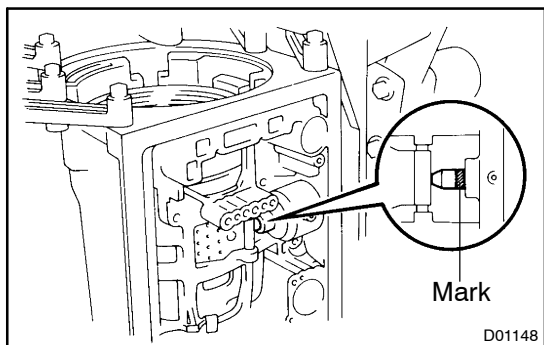


#### 10. INSTALL 3RD COAST BRAKE COVER, PISTON ASSEMBLY AND SPRING

- (a) Coat 2 new O-rings with ATF and install them to the cover.  
(b) Install the spring, piston assembly and cover to the case.

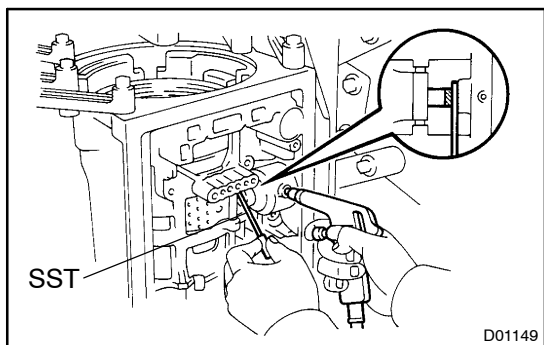


- (c) Using SST, install the snap ring.  
SST 09350-30020 (09350-07060)



## 11. CHECK PISTON ROD STROKE OF 3RD COAST BRAKE

- (a) Place a mark on the 2nd coast brake piston rod.



- (b) Using SST, measure the stroke while applying and releasing compressed air (392 kPa, 4 kgf/cm<sup>2</sup>, 57 psi).

SST 09240-00020

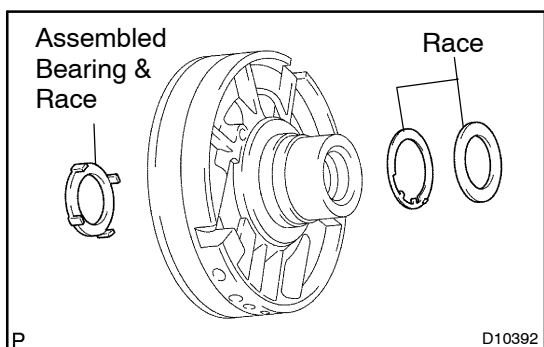
**Piston rod stroke: 2.0 – 3.0 mm (0.079 – 0.118 in.)**

If the stroke is more than the specified, replace the piston rod with a longer one.

**Piston rod length: mm (in.)**

77.65 (3.057)	79.90 (3.146)
78.40 (3.086)	
79.15 (3.116)	

If it is still more than standard value, replace the brake band with a new one.

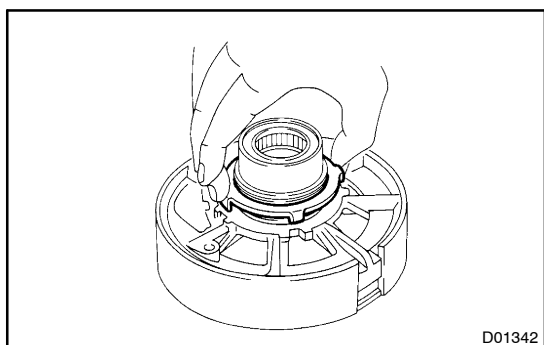


## 12. INSTALL O/D SUPPORT ASSEMBLY

- (a) Coat the assembled bearing & race and race with petroleum jelly and install them onto the O/D support assembly.

**Assembled bearing & race and race diameter: mm (in.)**

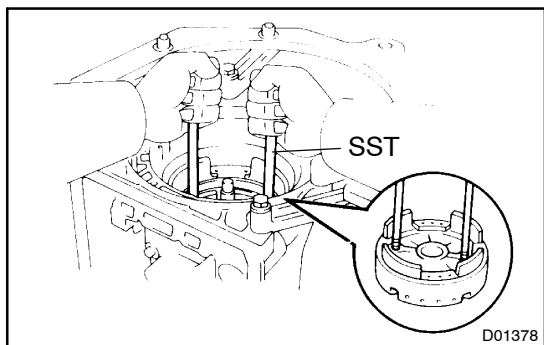
	Inside	Outside
Assembled bearing & race	33.6 (1.323)	50.3 (1.980)
Race	37.0 (1.457)	51.0 (2.008)



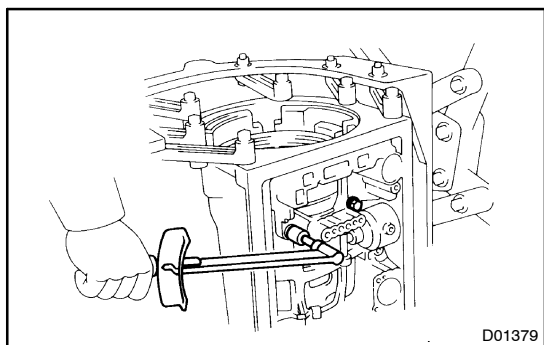
- (b) Coat the thrust washer with petroleum jelly and install it onto the O/D support assembly.

**HINT:**

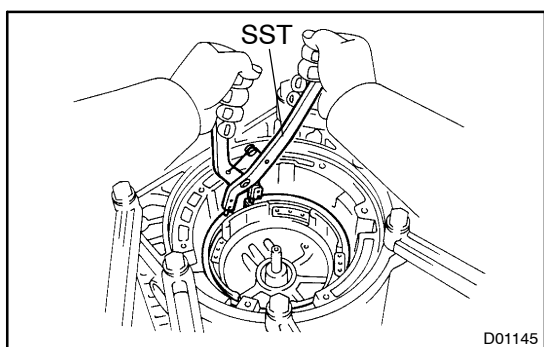
Make sure that the lug shapes match the holes on the O/D support.



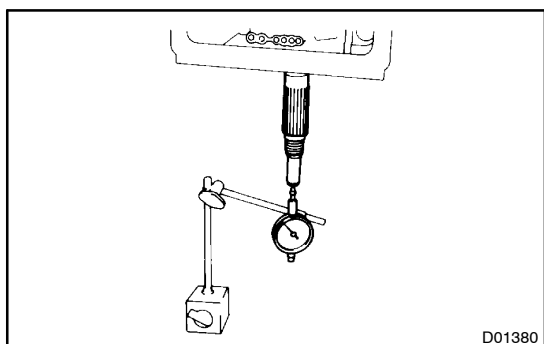
- (c) Using 2 bolts of SST, face the bolt and oil holes of the O/D support toward the valve body side, align them with the bolt holes of the transmission case and install the bolts.  
SST 09350-30020 (09350-07020)



- (d) Install the 2 bolts.  
**Torque: 25 N·m (260 kgf·cm, 19 ft·lbf)**



- (e) Using SST, install the snap ring.  
SST 09350-30020 (09350-07060)



### 13. CHECK OUTPUT SHAFT

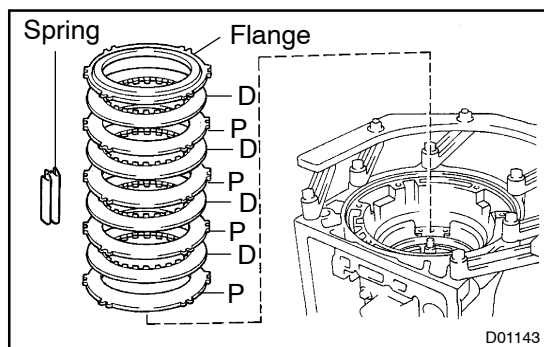
- (a) Using a dial indicator, measure the end play of the output shaft with hand.

**End play: 1.63 – 2.89 mm (0.064 – 0.114 in.)**

If the values are non-standard, check for improper installation.

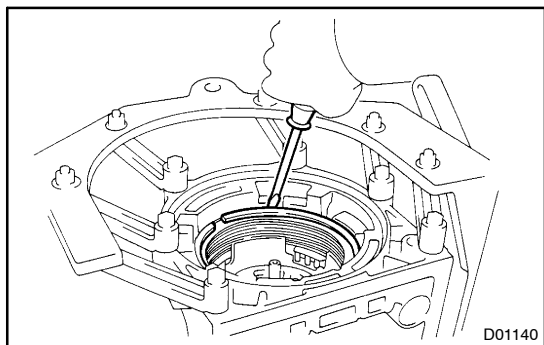
- (b) Check to see that output shaft rotates smoothly.





#### 14. INSTALL FLANGES, PLATES AND DISCS OF O/D BRAKE

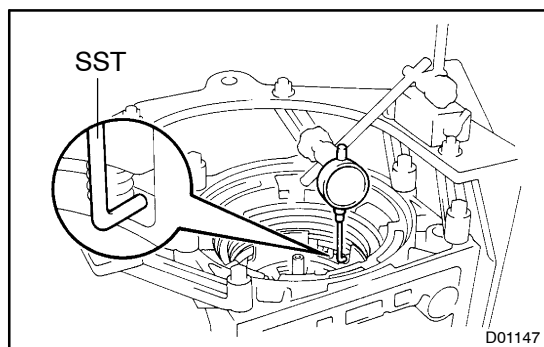
- (a) Install the O/D brake pack (1 flange, 4 discs and 4 plates).  
**Install in order: P = Plate, D = Disc**  
**P – D – P – D – P – D – P – D**
- (b) Install the flange (stepped ring) with the flat side of the flange facing the disc.
- (c) Install the spring to the case.



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

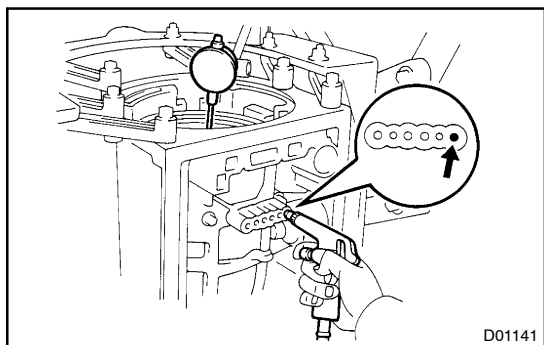
#### NOTICE:

**Be sure the end gap of the snap ring is not aligned with cut-out portion of the brake drum.**



#### 15. CHECK PISTON STROKE OF O/D BRAKE

- (a) Place SST and a dial indicator onto the O/D brake piston.  
SST 09350-30020 (09350-06120)



- (b) Measure the stroke while applying and releasing compressed air (392 kPa, 4 kgf/cm<sup>2</sup>, 57 psi).

**Piston Stroke: 1.40 – 1.70 mm (0.055 – 0.067 in.)**

If the piston stroke is less than the limit, parts may have been assembled incorrectly, so check and reassemble again.

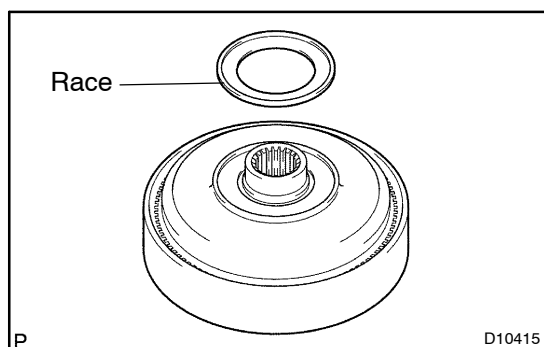
If the piston stroke is non-standard, select another flange.

**HINT:**

There are 7 different thickness for the flange.

**Flange thickness: mm (in.)**

No.	Thickness	No.	Thickness
77	3.3 (0.130)	81	3.8 (0.150)
78	3.5 (0.138)	82	3.9 (0.154)
79	3.6 (0.142)	83	4.0 (0.157)
80	3.7 (0.146)	–	–

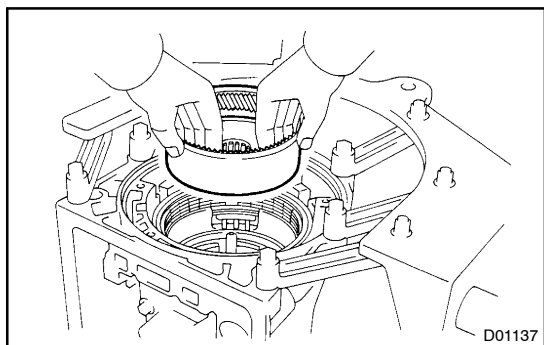


#### 16. INSTALL O/D PLANETARY GEAR UNIT WITH O/D DIRECT CLUTCH & O/D ONE-WAY CLUTCH

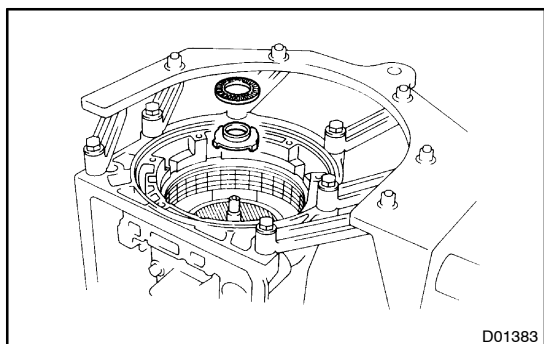
- (a) Coat the race with petroleum jelly and install it onto the O/D planetary ring gear.

**Race diameter: mm (in.)**

	Inside	Outside
Race	37.1 (1.461)	59.0 (2.323)



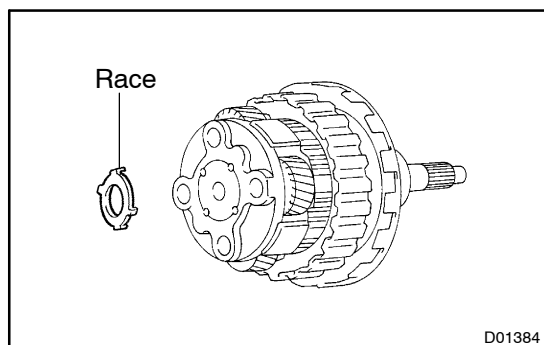
- (b) Install the O/D planetary ring gear.



- (c) Install the bearing and race onto the O/D planetary ring gear.

**Bearing and race diameter: mm (in.)**

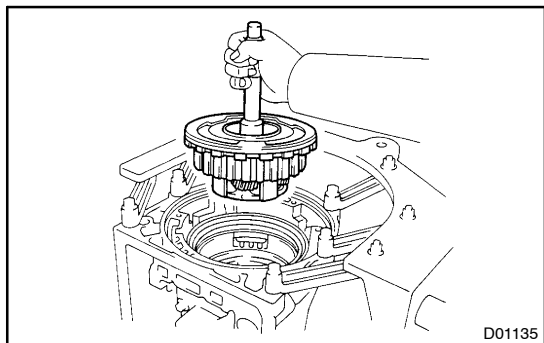
	Inside	Outside
Bearing	25.9 (1.020)	47.0 (1.850)
Race	24.0 (0.945)	48.0 (1.890)



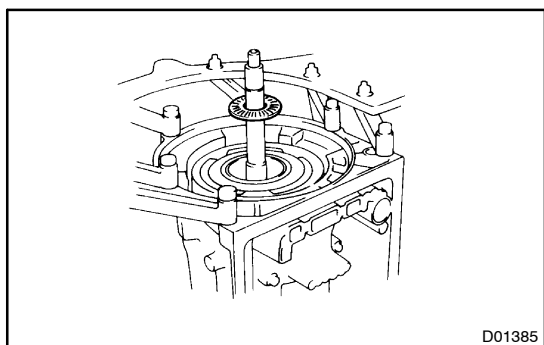
- (d) Coat the race with petroleum jelly and install it onto the O/D planetary gear.

**Race diameter: mm (in.)**

	Inside	Outside
Race	27.2 (1.071)	42.0 (1.654)



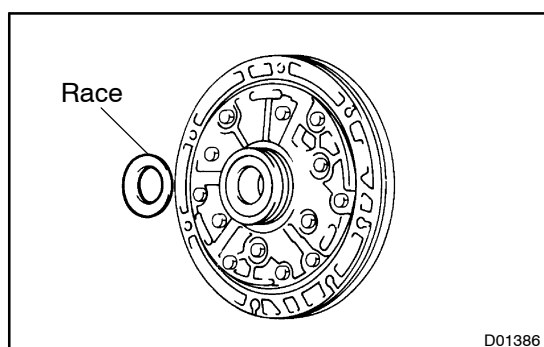
- (e) Install the O/D planetary gear with the O/D direct clutch & O/D one-way clutch.



- (f) Install the assembled bearing & race onto the O/D direct clutch.

**Assembled bearing & race diameter: mm (in.)**

	Inside	Outside
Assembled bearing & race	28.8 (1.134)	50.4 (1.984)



## 17. INSTALL OIL PUMP INTO CASE

- (a) Coat the race with petroleum jelly and install it onto the oil pump.

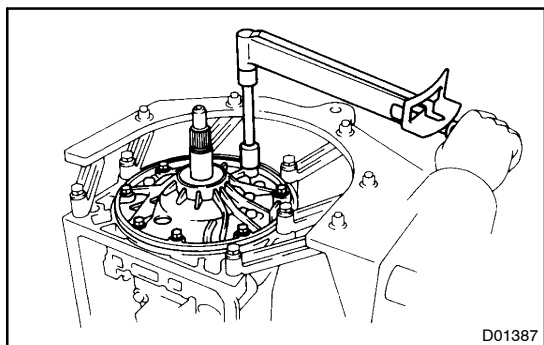
**Race diameter: mm (in.)**

	Inside	Outside
Race	28.1 (1.106)	47.5 (1.870)

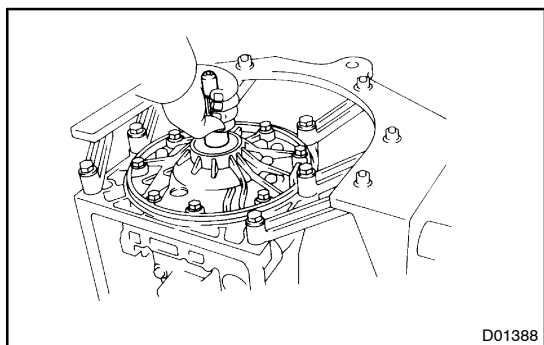
- (b) Coat a new O-ring with ATF and install it around the pump body.
- (c) Place the oil pump through the input shaft, and align the bolt holes of the pump body with the transmission case.
- (d) Hold the input shaft, and lightly press the oil pump body to slide the oil seal rings into the overdrive direct clutch drum.

### NOTICE:

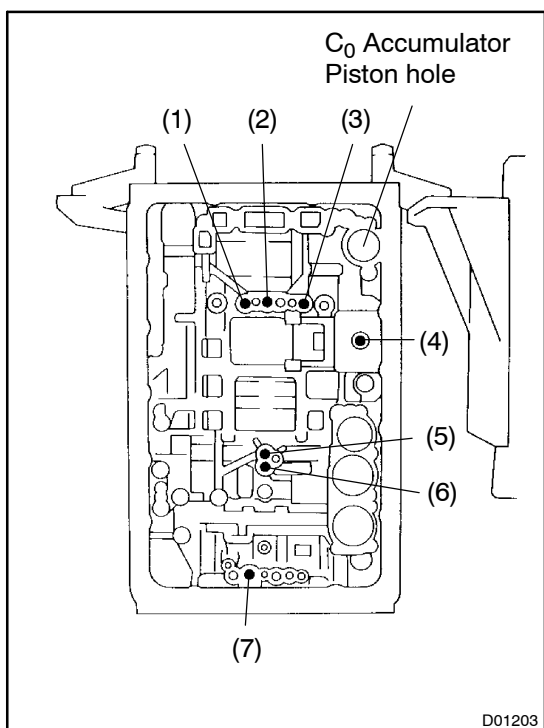
**Do not push on the oil pump strongly, or the oil seal ring will stick to the direct clutch drum.**



- (e) Install the 7 bolts.  
**Torque: 21 N·m (215 kgf·cm, 16 ft·lbf)**



- 18. CHECK INPUT SHAFT ROTATION**  
 Make sure the input shaft rotates smoothly.



**19. INDIVIDUAL PISTON OPERATION INSPECTION**

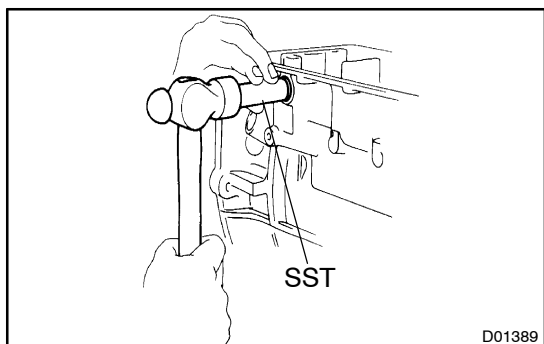
Check for the sound of operation while applying compressed air into the oil holes indicated in the illustration.

**HINT:**

When inspecting the O/D direct clutch, check with the C<sub>0</sub> accumulator piston hole closed.

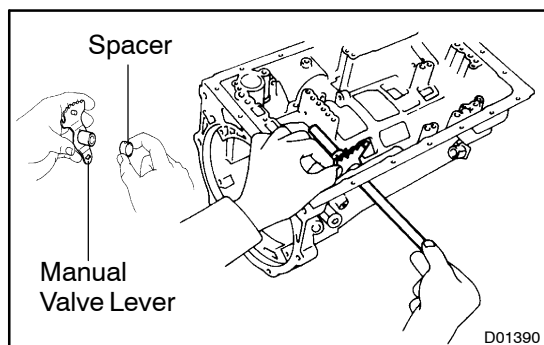
If there is no noise, disassemble and check the installation condition of the parts.

- (1) Forward clutch
- (2) Direct clutch
- (3) O/D brake
- (4) 3rd coast brake
- (5) 3rd brake
- (6) 2nd brake
- (7) 1st & reverse brake

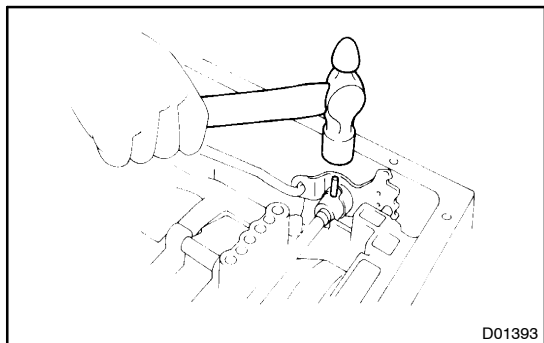


**20. INSTALL MANUAL VALVE LEVER, SHAFT AND OIL SEAL**

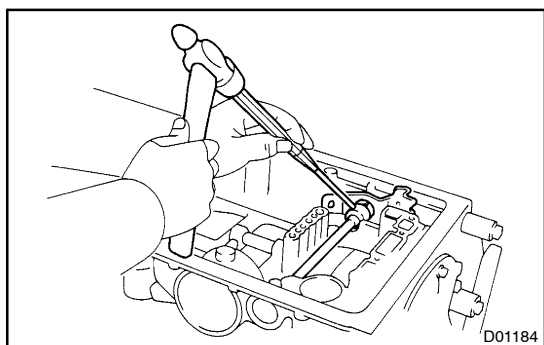
- (a) Using SST, drive in a 2 new oil seals.  
 SST 09350-30020 (09350-07110)
- (b) Coat the oil seal lip with MP grease.



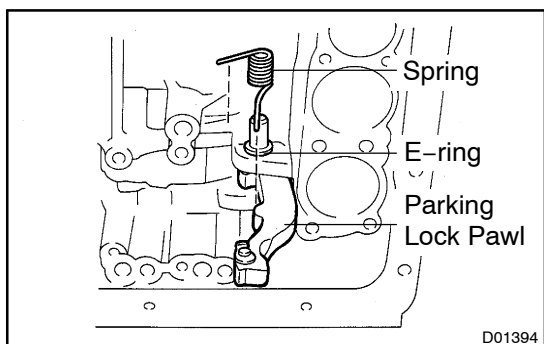
- (c) Install a new spacer to the manual valve lever.
- (d) Install the manual valve lever shaft to the transmission case through the manual valve lever.



- (e) Using a hammer, drive in a new spring pin.

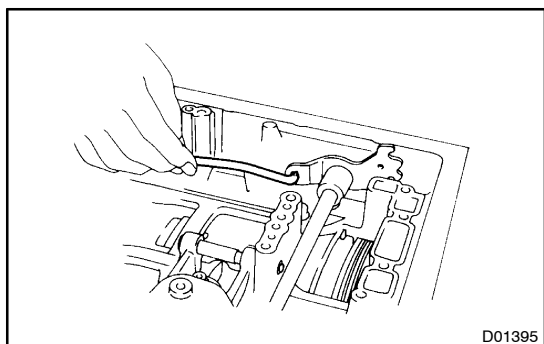


- (f) Match the manual valve lever indentation with the spacer hole and stake them together with the punch.
- (g) Make sure the shaft rotates smoothly.

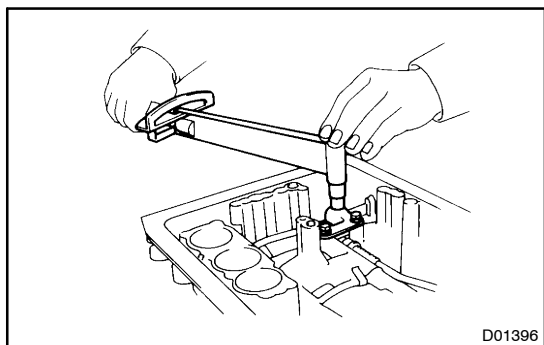


## 21. INSTALL PARKING LOCK PAWL AND ROD

- (a) Install the E-ring to the shaft.
- (b) Install the parking lock pawl, shaft and spring.

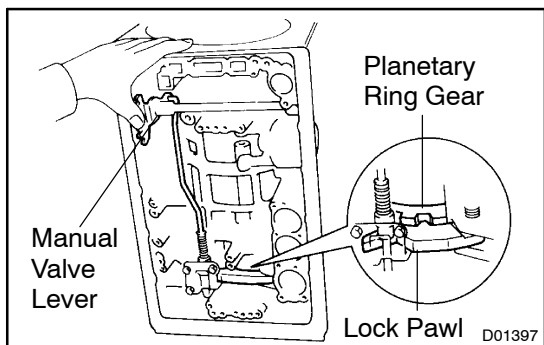


- (c) Connect the parking lock rod to the manual valve lever.

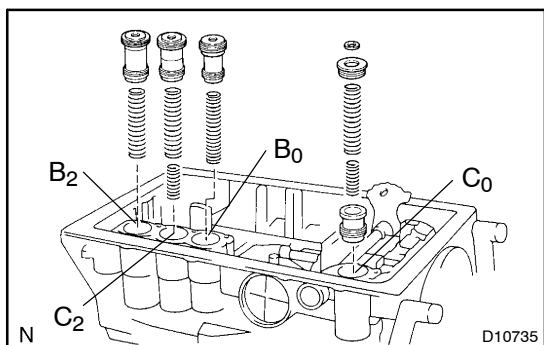


- (d) Place the parking lock pawl bracket onto the transmission case and torque the 3 bolts.

**Torque: 7.4 N·m (75 kgf·cm, 65 in.·lbf)**



- (e) Shift the manual valve lever to the P position, and confirm the planetary ring gear is correctly locked up by the lock pawl.

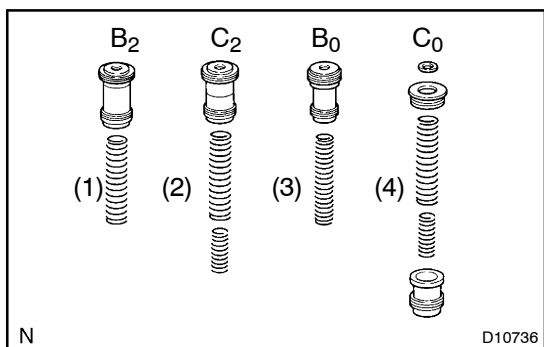


## 22. INSTALL ACCUMULATOR SPRINGS AND PISTONS

- (a) Coat new O-rings with ATF and install them to the pistons.  
(b) Install the 4 springs and 4 accumulator pistons to the holes.

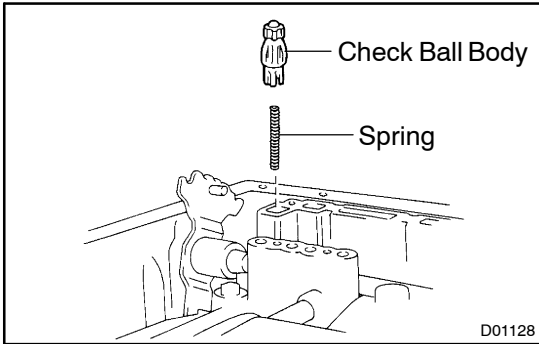
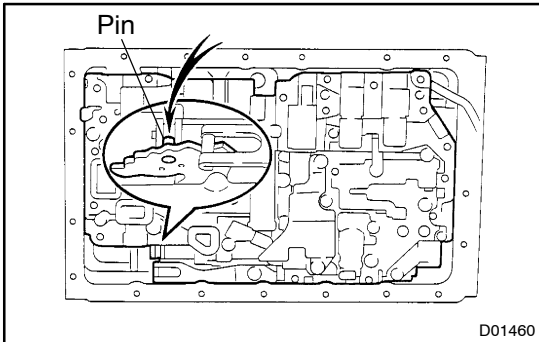
### HINT:

The pistons are marked in relief with either C<sub>0</sub>, B<sub>0</sub>, C<sub>2</sub> or B<sub>2</sub> to discriminate each other.

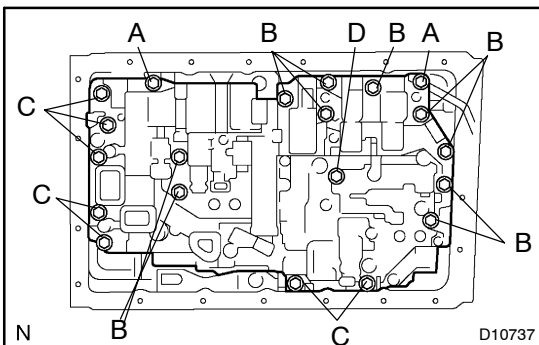


### Accumulator spring:

Spring		Free length Outer diameter mm (in.)	Color
(1) B <sub>2</sub>		80.91 (3.185) 19.97 (0.786)	Pink & white
(2) C <sub>2</sub>	Inner	41.00 (1.614) 14.10 (0.555)	Orange
	Outer	75.20 (2.960) 20.10 (0.791)	White & Blue
(4) B <sub>0</sub>		69.40 (2.732) 16.25 (0.640)	White
(5) C <sub>0</sub>	Inner	32.92 (1.296) 14.03 (0.552)	Red
	Outer	56.00 (2.204) 20.59 (0.811)	Light green

**23. INSTALL SPRING AND CHECK BALL BODY****24. INSTALL VALVE BODY**

- (a) Align the groove of the manual valve with the pin of the lever.



- (b) Install the 20 bolts.

**Torque: 9.8 N·m (100 kgf·cm, 7 ft·lbf)**

**HINT:**

Each bolt length is indicated below.

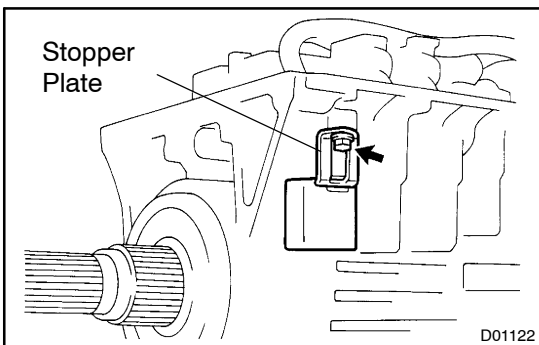
**Blot length:**

**Bolt A: 23 mm (0.866 in.)**

**Bolt B: 28 mm (1.102 in.)**

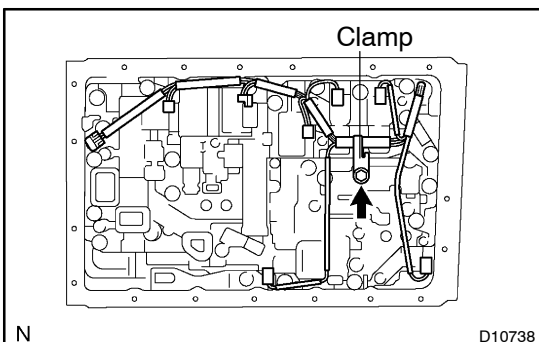
**Bolt C: 36 mm (1.417 in.)**

**Bolt D: 55 mm (2.165 in.)**

**25. INSTALL TRANSMISSION WIRE**

- (a) Coat a new O-ring with ATF and install it to the transmission wire.
- (b) Insert the transmission wire to the case and install the stopper plate with the bolt.

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

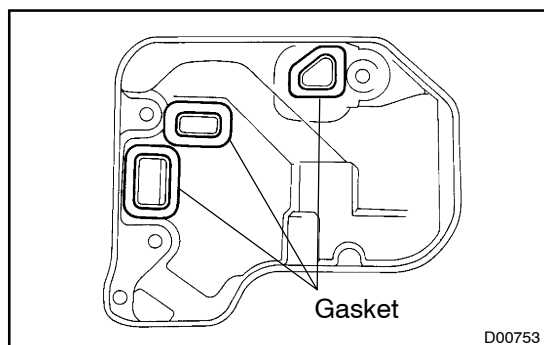


- (c) Connect the 7 solenoid connectors.

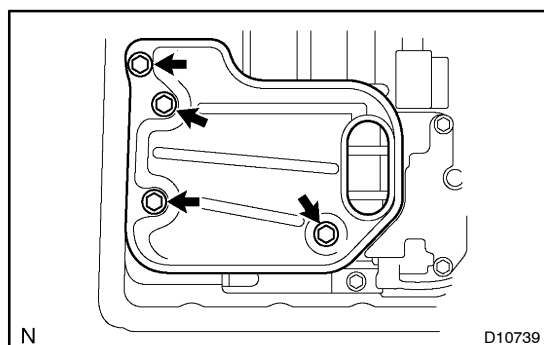
- (d) Install the ATF temperature sensor.

- (e) Install the clamp and bolt.

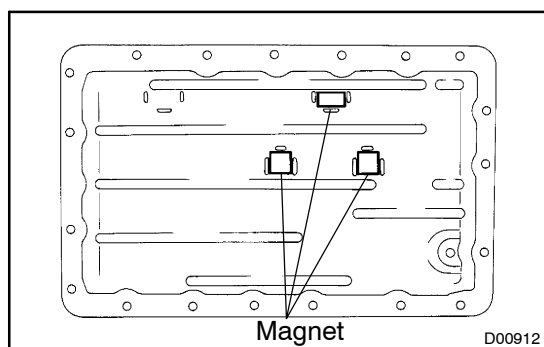
**Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)**

**26. INSTALL OIL STRAINER AND GASKET**

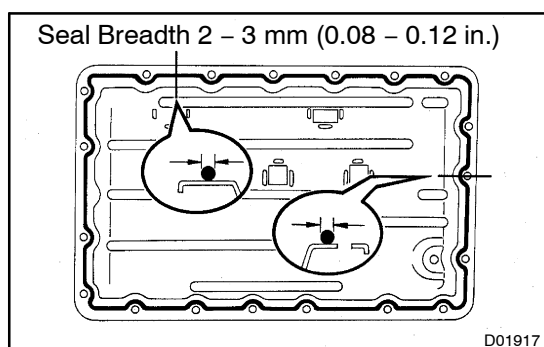
- (a) Install 3 new gaskets to oil strainer.



- (b) Install the oil strainer with the 4 bolts.  
**Torque: 9.8 N·m (100 kgf·cm, 7 ft·lbf)**

**27. INSTALL OIL PAN**

- (a) Install the 3 magnets in the oil pan.

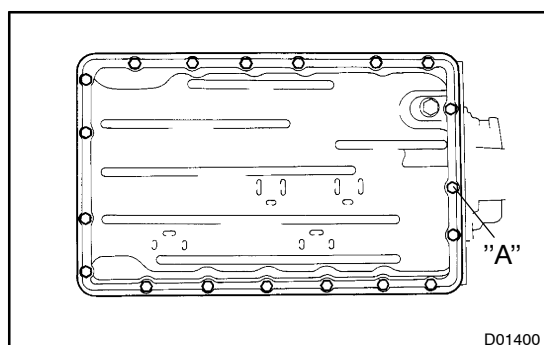


- (b) Remove any FIPG material and be careful not to drop oil on the contacting surfaces of the transmission case and oil pan.

- (c) Apply FIPG to the oil pan.

**FIPG:**

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



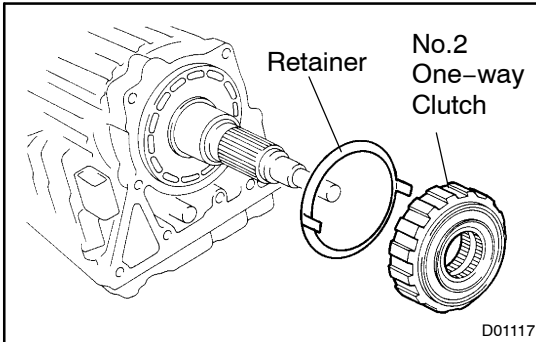
- (d) Install and torque the 19 bolts.

**Torque: 7.4 N·m (75 kgf·cm, 65 in·lbf)**

**HINT:**

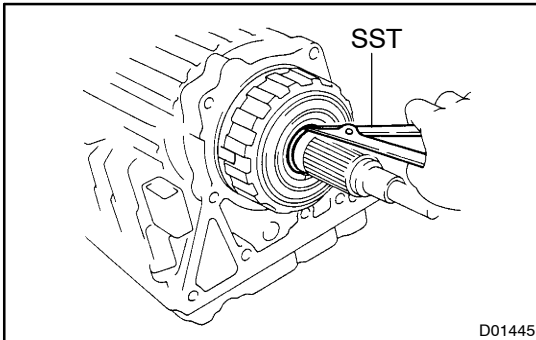
Replace the only "A" bolt with a new one.



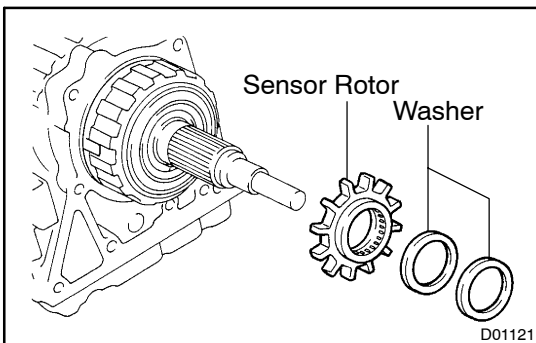


## 28. INSTALL ONE-WAY CLUTCH

- (a) Install the retainer and the No.2 one-way clutch.

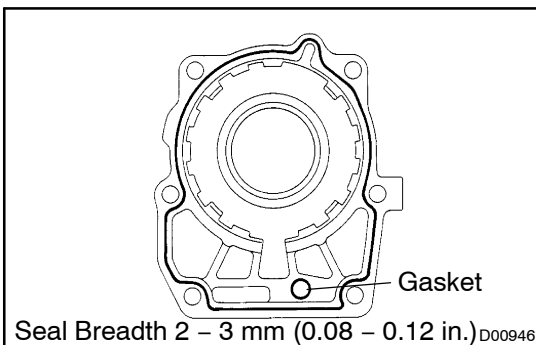


- (b) Using SST, install the snap ring.  
SST 09350-30020 (09350-07070)



## 29. INSTALL VEHICLE SPEED SENSOR ROTOR

Install the vehicle speed sensor rotor and 2 washers.



## 30. INSTALL EXTENSION HOUSING

- (a) Install the gasket from the extension housing.

HINT:

Take care not to drop the gasket.

- (b) Clean the threads of the bolts and case with white gasoline.

- (c) Apply FIPG to the extension housing.

**FIPG:**

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

- (d) Install the extension housing with new 6 bolts.

**Torque: 34 N·m (345 kgf·cm, 25 ft·lbf)**

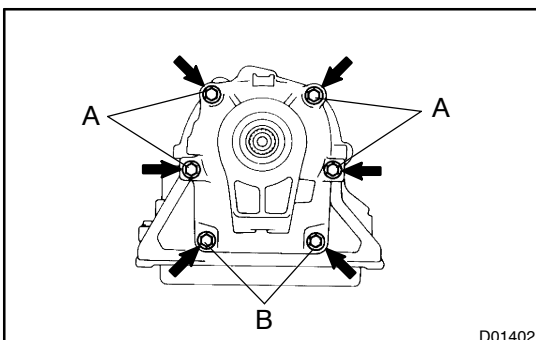
HINT:

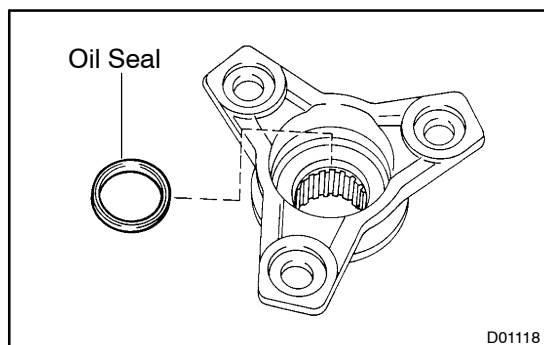
Each bolt length is indicated below.

**Bolt length:**

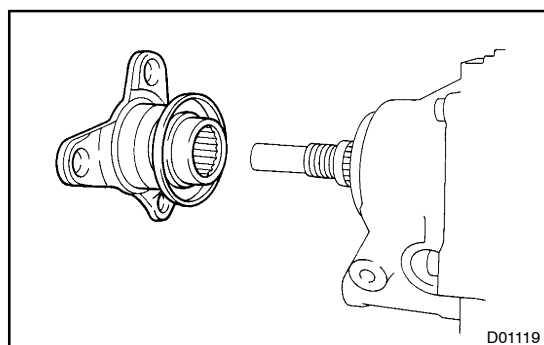
**Bolt A: 45 mm (1.772 in.)**

**Bolt B: 35 mm (1.378 in.)**

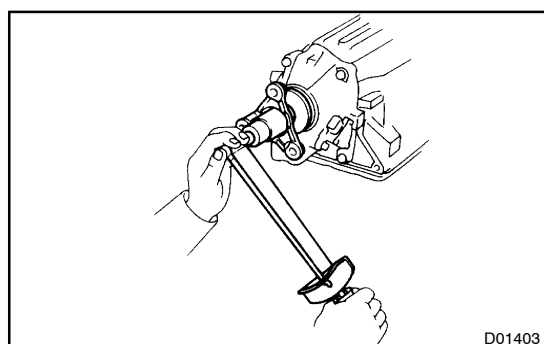


**31. INSTALL TRANSMISSION OUTPUT FLANGE**

- (a) Using SST, install a new oil seal to the output flange.  
 SST 09950-60010 (09951-00350)  
 09950-70010 (09951-07100)



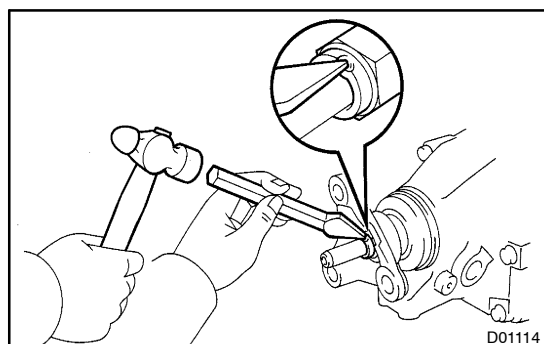
- (b) Install the output flange.



- (c) Using a deeper socket wrench of 30 mm, install a new nut.  
**Torque: 126 N·m (1,280 kgf·cm, 92 ft·lbf)**

**HINT:**

Shift the manual valve lever to the P position.



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

**32. REMOVE TRANSMISSION CASE FROM OVERHAUL ATTACHMENT****33. INSTALL TRANSMISSION HOUSING**

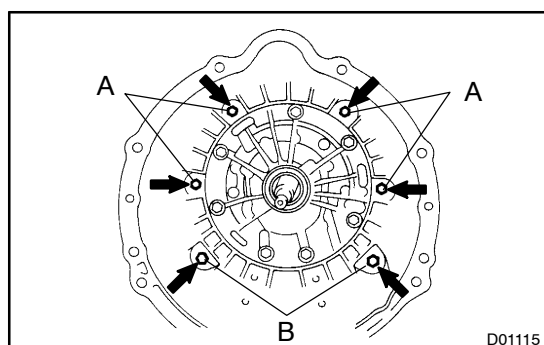
- (a) Clean the threads of the bolts and case with white gasoline.
- (b) Apply seal packing or equivalent to the 6 bolts.  
**Seal packing:**  
**Part No. 08833-00070, THREE BOND 1324 or equivalent.**

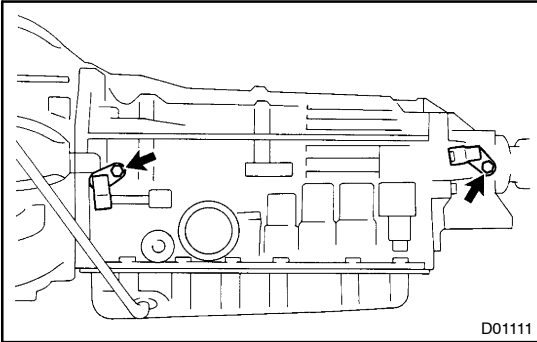
- (c) Install the transmission housing with the 6 bolts.

**Torque:**

**A (14 mm bolt): 34 N·m (345 kgf·cm, 25 ft·lbf)**

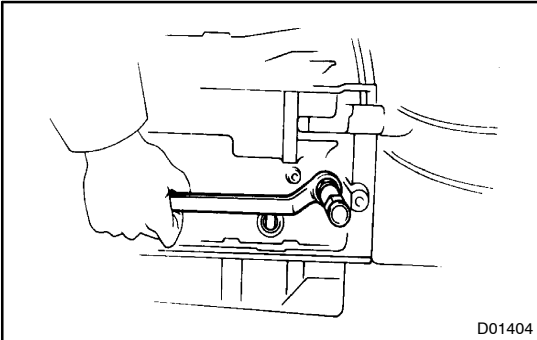
**B (17 mm bolt): 57 N·m (580 kgf·cm, 42 ft·lbf)**



**34. INSTALL VEHICLE SPEED SENSORS**

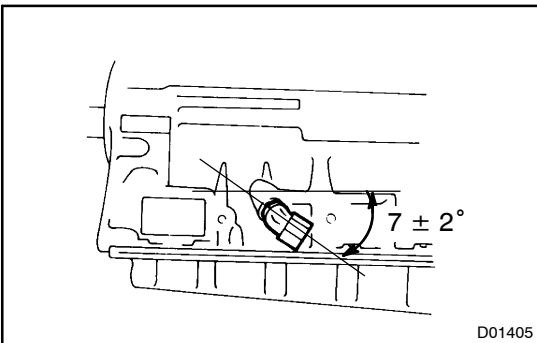
- (a) Coat 2 new O-rings with ATF and install it to the speed sensor.
- (b) Install the 2 vehicle speed sensors.
- (c) Install the bolts.

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

**35. INSTALL UNION AND ELBOW**

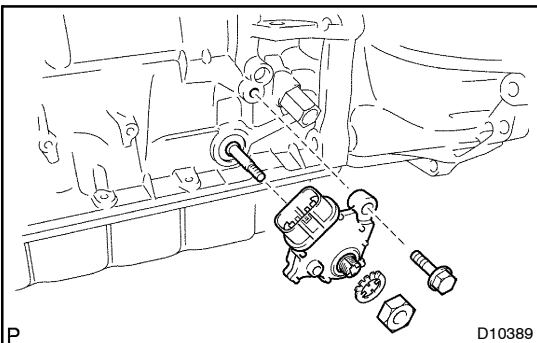
- (a) Coat 2 new O-rings with ATF, install them to union and elbow.
- (b) Install the union.

**Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)**



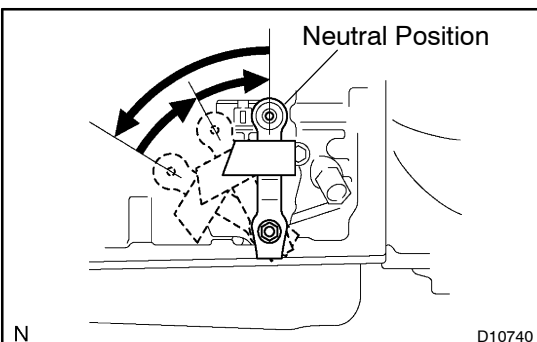
- (c) Install the elbow.

**Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)**

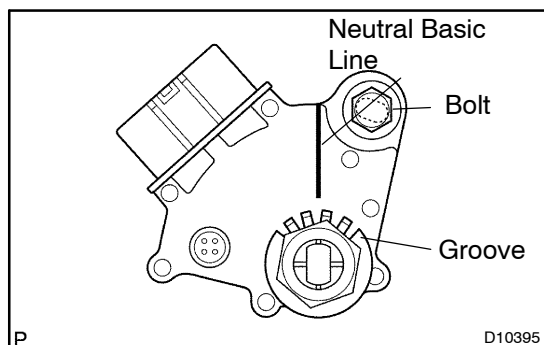
**36. INSTALL PARK/NEUTRAL POSITION SWITCH**

- (a) Install the park/neutral position switch onto the manual valve lever shaft and temporarily install the adjusting bolt.
- (b) Install the new lock washer. Install and torque the nut.

**Torque: 6.9 N·m (70 kgf·cm, 61 in.·lbf)**

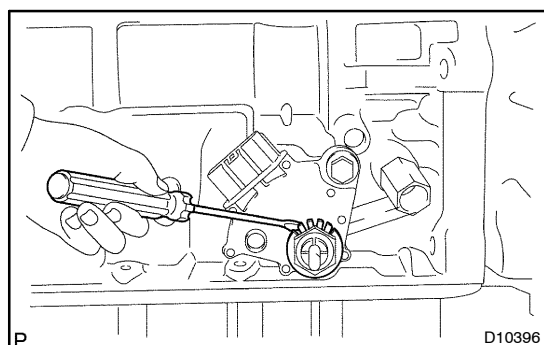


- (c) Using the control shaft lever, fully turn the manual lever shaft back and return 2 notches. It is now in neutral.



- (d) Align the neutral basic line with the switch groove, and tighten the adjusting bolt.

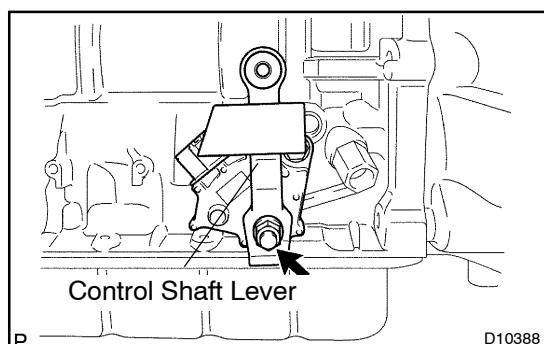
**Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)**



- (e) Using a screwdriver, bend the tabs of the lock washer.

**HINT:**

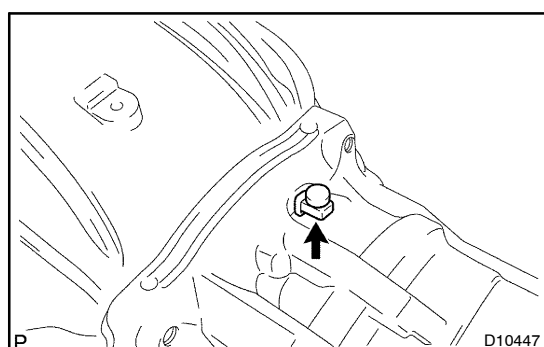
Bend at least 2 of the lock washer tabs.



### 37. INSTALL CONTROL SHAFT LEVER

Install the washer and nut to the control shaft lever.

**Torque: 16 N·m (160 kgf·cm, 12 ft·lbf)**



### 38. INSTALL BREATHER PLUG

Install the breather plug.