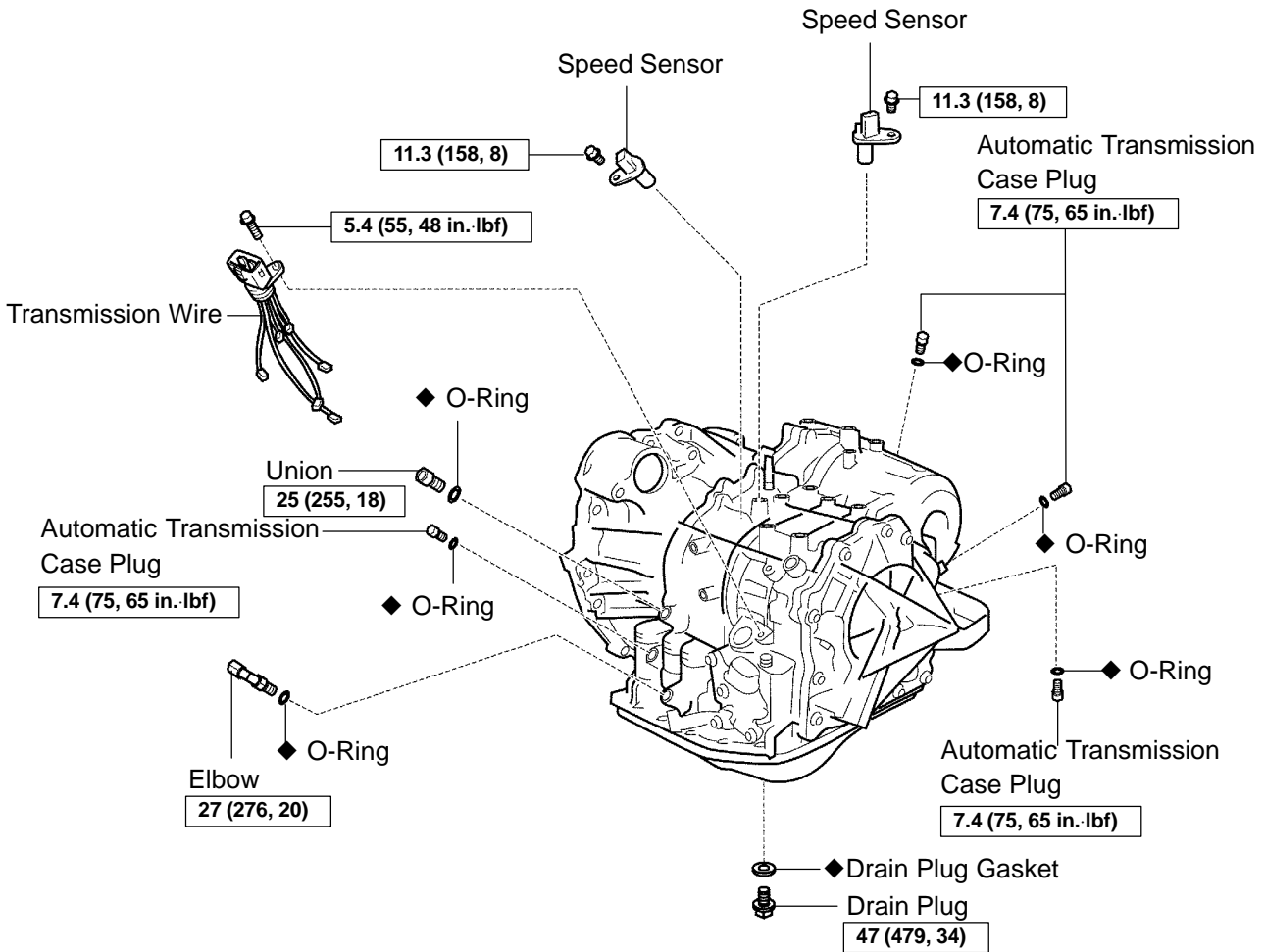


AUTOMATIC TRANSMISSION / TRANSAXLE (U151E/U151F) COMPONENTS

4010I-01

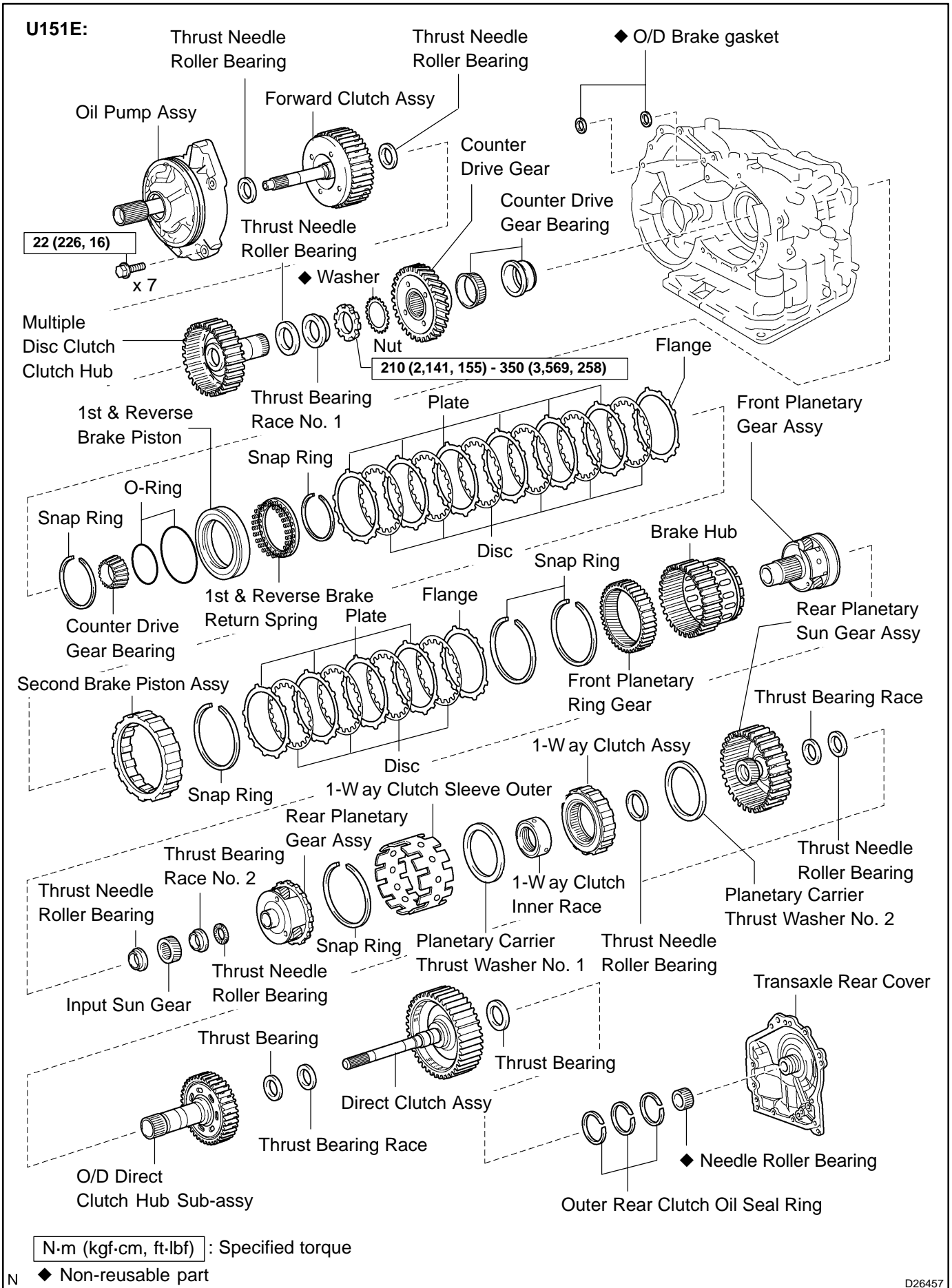
U151E:



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

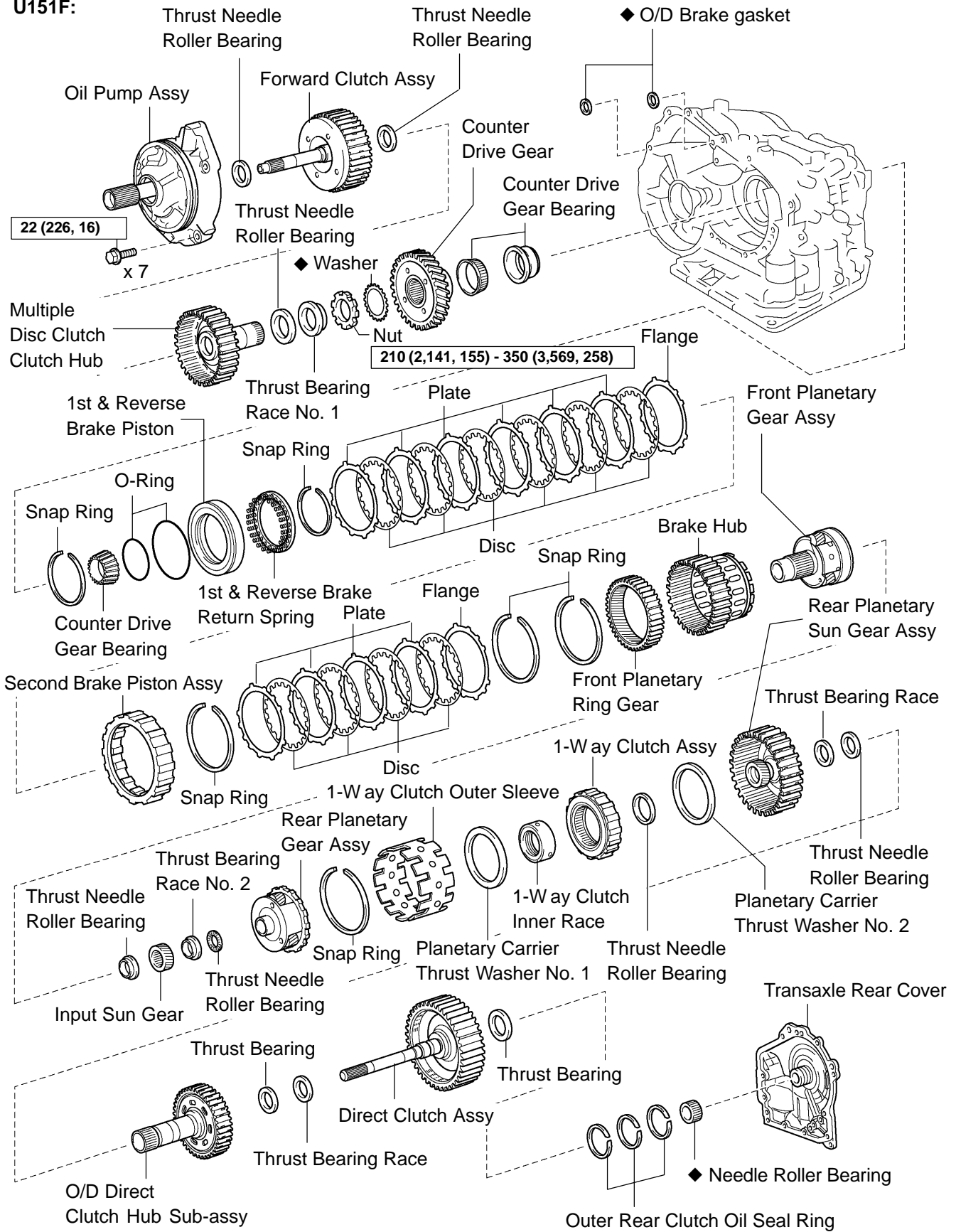
◆ Non-reusable part

C86320



D26457

U151F:



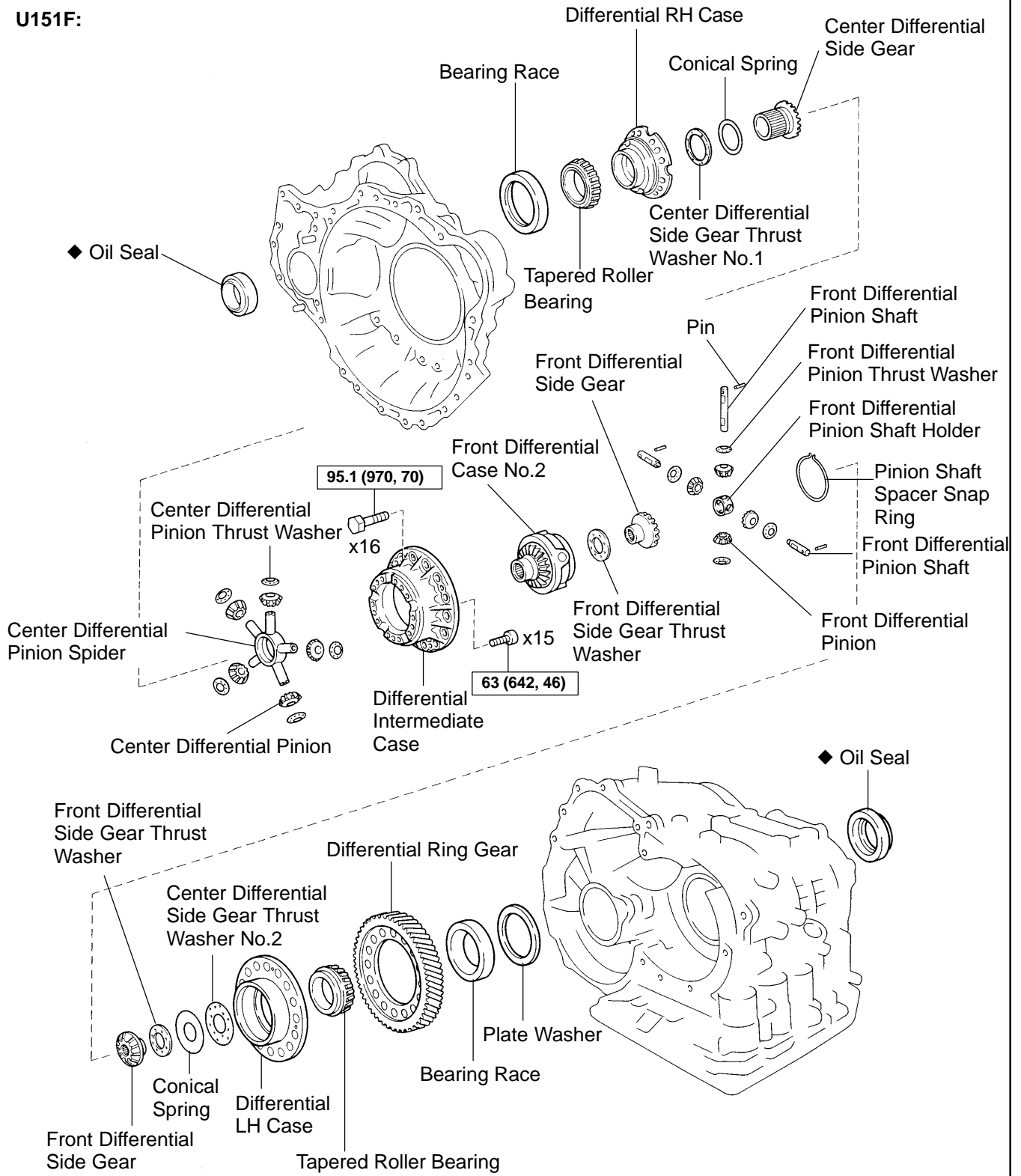
N-m (kgf-cm, ft-lbf) : Specified torque

◆ Non-reusable part

N

D26457

U151F:



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













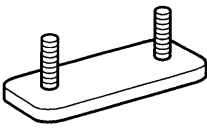
◆ Non-reusable part

D03707

STANDARD BOLT FOR AUTOMATIC TRANSAXLE REPAIR MANUAL

HOW TO DETERMINE BOLT STRENGTH

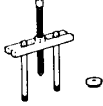


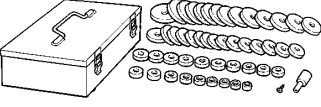







030JK-02

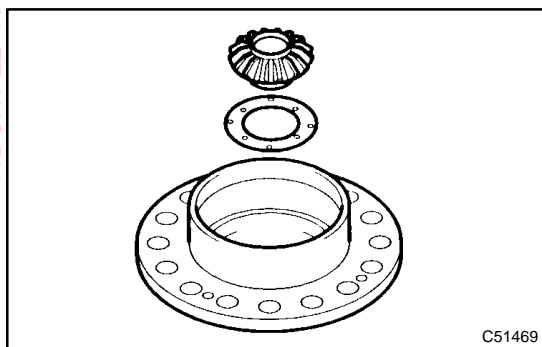
	Mark	Class		Mark	Class
Hexagon head bolt	 Bolt head No. 4- 5- 6- 7- 8- 9- 10- 11-	4T	Hexagon flange bolt w/ washer hexagon bolt	 4 Protruding lines	9T
		5T			
		6T	Hexagon flange bolt w/ washer hexagon bolt	 5 Protruding lines	10T
	 No mark	4T	Hexagon flange bolt w/ washer hexagon bolt	 6 Protruding lines	11T
Hexagon flange bolt w/ washer hexagon bolt	 No mark	4T	Stud bolt	 No mark	4T
Hexagon head bolt	 2 Protruding lines	5T			
Hexagon flange bolt w/ washer hexagon bolt	 2 Protruding lines	6T	Stud bolt	 Grooved	6T
Hexagon head bolt	 3 Protruding lines	7T			
Hexagon head bolt	 4 Protruding lines	8T	Welded bolt		4T

V06821

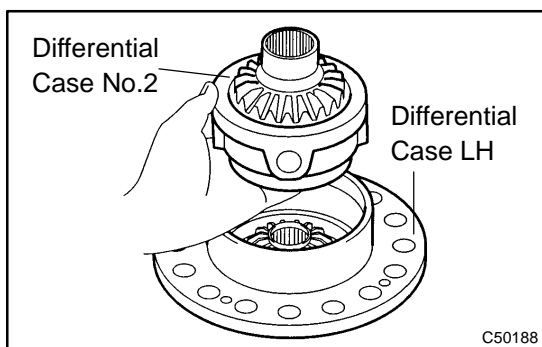
SERVICE SPECIFICATIONS - AUTOMATIC TRANSMISSION / TRANSAXLE

Direct clutch & O/D clutch		
Pack clearance		0.61 - 0.83 mm (0.02401 - 0.03268 in.)
Return spring free length		25.91 mm (1.0201 in.)
Flange thickness	Mark	
	0	2.5 mm (0.098 in.)
	1	2.6 mm (0.102 in.)
	2	2.7 mm (0.106 in.)
	3	2.8 mm (0.110 in.)
	4	2.9 mm (0.114 in.)
	5	3.0 mm (0.118 in.)
	6	3.1 mm (0.122 in.)
2nd brake		
Pack clearance		0.62 - 0.91 mm (0.0244 - 0.0358 in.)
Return spring free length		16.61 mm (0.6539 in.)
Flange thickness	Mark	
	1	3.0 mm (0.118 in.)
	2	3.1 mm (0.122 in.)
	3	3.2 mm (0.126 in.)
	4	3.3 mm (0.130 in.)
	5	3.4 mm (0.134 in.)
	6	3.5 mm (0.138 in.)
	7	3.6 mm (0.142 in.)
U/D clutch		
Pack clearance		1.51 - 1.71 mm (0.0594 - 0.0673 in.)
U/D clutch drum bushing inside diameter	STD	37.06 - 37.08 mm (1.4591 - 1.4598 in.)
	Max.	37.13 mm (1.4618 in.)
Return spring free length		17.14 mm (0.6752 in.)
Flange thickness	Mark	
	1	3.0 mm (0.118 in.)
	2	3.1 mm (0.122 in.)
	3	3.2 mm (0.126 in.)
	4	3.3 mm (0.130 in.)
	5	3.4 mm (0.134 in.)
U/D brake		
Pack clearance		1.81 - 2.20 mm (0.0713 - 0.0866 in.)
Return spring free length		14.04 mm (0.5528 in.)
Flange thickness	Mark	
	1	3.0 mm (0.118 in.)
	2	3.2 mm (0.126 in.)
	3	3.4 mm (0.134 in.)
1st & reverse brake		
Pack clearance		1.16 - 1.35 mm (0.0457 - 0.0531 in.)
Return spring free length		15.53 mm (0.6114 in.)
Flange thickness	Mark	
	1	1.8 mm (0.071 in.)
	2	1.9 mm (0.075 in.)
	3	2.0 mm (0.079 in.)
	4	2.1 mm (0.083 in.)
	5	2.2 mm (0.087 in.)
	6	2.3 mm (0.091 in.)
	7	2.4 mm (0.094 in.)
	8	2.5 mm (0.098 in.)

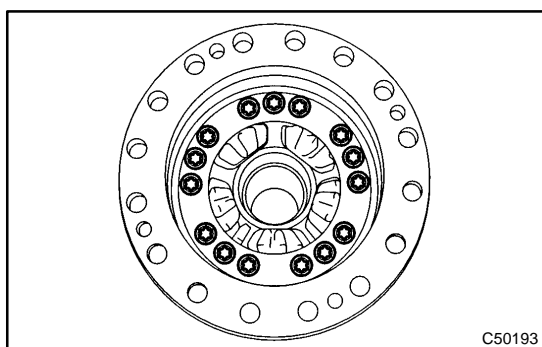
	09950-00030	Bearing Remover Attachment	FRONT ASSY(U151E) AUTOMATIC ASSY(U151E/U151F) UNDERDRIVE PLANETARY GEAR ASSY(U151E/U151F) FRONT ASSY(U151F)	DIFFERENTIAL TRANSAXLE DIFFERENTIAL
	09950-4001 1	Puller B Set	FRONT ASSY(U151E) AUTOMATIC ASSY(U151E/U151F) UNDERDRIVE PLANETARY GEAR ASSY(U151E/U151F)	DIFFERENTIAL TRANSAXLE DIFFERENTIAL
	(09957-04010)	Attachment	FRONT ASSY(U151E) AUTOMATIC ASSY(U151E/U151F) UNDERDRIVE PLANETARY GEAR ASSY(U151E/U151F)	DIFFERENTIAL TRANSAXLE DIFFERENTIAL
	09950-60010	Replacer Set	FRONT ASSY(U151E) AUTOMATIC ASSY(U151E/U151F) UNDERDRIVE PLANETARY GEAR ASSY(U151E/U151F) FRONT ASSY(U151F)	DIFFERENTIAL TRANSAXLE DIFFERENTIAL
	(09951-00230)	Replacer 23	AUTOMATIC ASSY(U151E/U151F)	TRANSAXLE
	(09951-00260)	Replacer 26	UNDERDRIVE PLANETARY GEAR ASSY(U151E/U151F)	
	(09951-00320)	Replacer 32	AUTOMATIC ASSY(U151E/U151F) UNDERDRIVE PLANETARY GEAR ASSY(U151E/U151F)	TRANSAXLE
	(09951-00450)	Replacer 45	AUTOMATIC ASSY(U151E/U151F)	TRANSAXLE
	(09951-00480)	Replacer 48	FRONT ASSY(U151F)	DIFFERENTIAL
	(09951-00490)	Replacer 49	FRONT ASSY(U151E)	DIFFERENTIAL
	(09951-00500)	Replacer 50	AUTOMATIC ASSY(U151E/U151F)	TRANSAXLE



- (j) Install the selected differential side gear thrust washer No. 2 LH and center differential planetary gear to the differential case LH.



- (k) Install the differential case No. 2 to the differential case LH again.

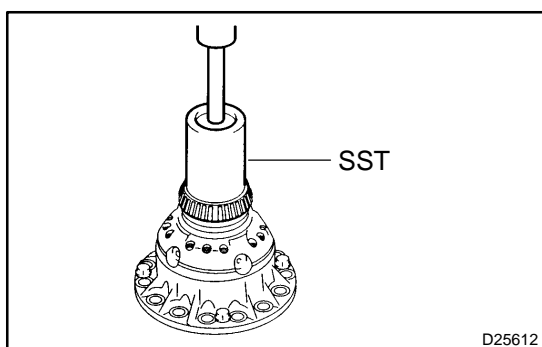


- (l) Install the adjusted differential case RH to the intermediate case and tighten the 15 bolts using a torx socket wrench (T50).

Torque: 63 N·m (642 kgf·cm, 46 ft·lbf)

NOTICE:

Align the matchmarks.



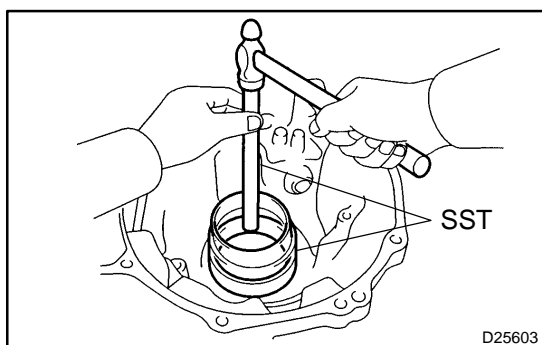
10. INSTALL FR DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

- (a) Using SST and a press, install the front differential case tapered roller bearing FR to the differential case.

SST 09950-70010 (09951-07100), 09649-17010

NOTICE:

Do not make a damage on the bearing cage during the bearing inner race installation.

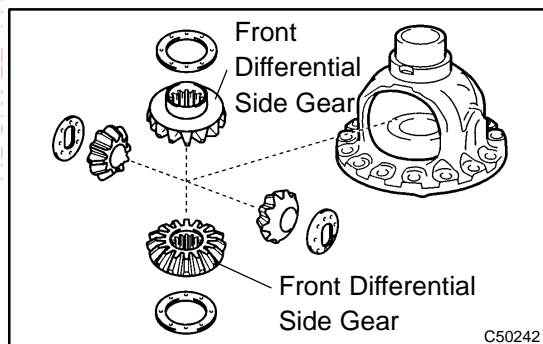


- (b) Using SST, install the outer race of the tapered roller bearing FR.

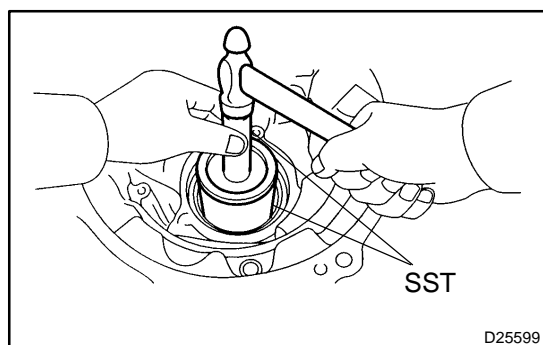
SST 09527-1701 1, 09950-60020 (09951-01030)

NOTICE:

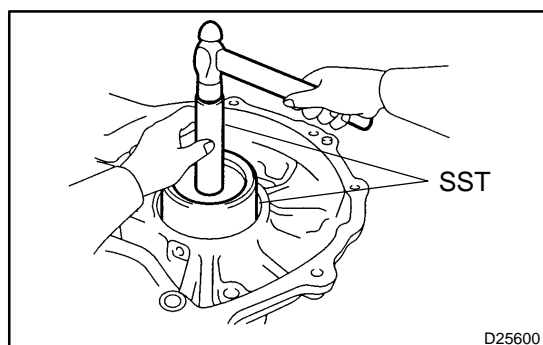
Clearance is not allowed between the plate washer and transaxle housing.

**6. REMOVE FRONT DIFFERENTIAL SIDE GEAR**

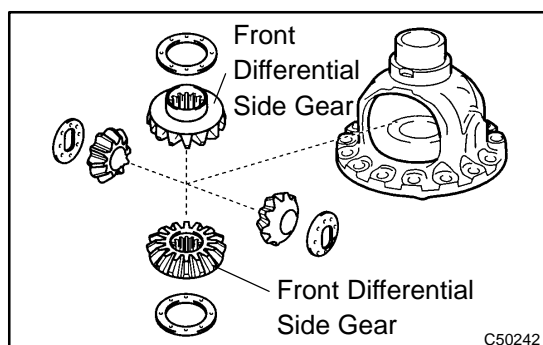
- (a) Remove the 2 front differential pinions, 2 pinion thrust washers, 2 front differential side gears and 2 side gear thrust washers from the differential case.

**7. REMOVE TRANSAXLE HOUSING OIL SEAL**

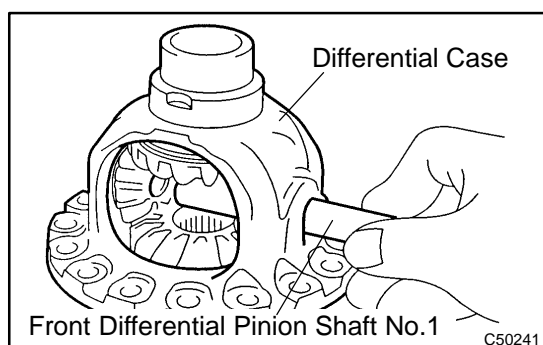
- (a) Using SST, remove the oil seal.
SST 09950-70010 (09951-07100), 09215-00013 (09215-00471)

**8. REMOVE DIFFERENTIAL SIDE BEARING RETAINER OIL SEAL**

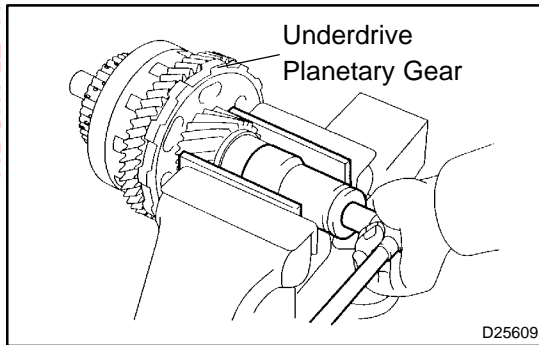
- (a) Using SST, remove the oil seal.
SST 09950-70010 (09951-07100), 09608-10010

**9. INSTALL FRONT DIFFERENTIAL SIDE GEAR**

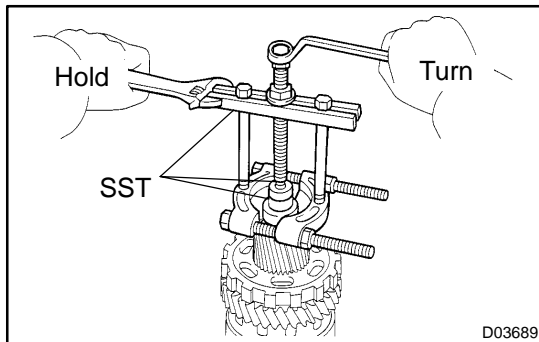
- (a) Apply the 2 front differential side gears, 2 side gear thrust washers, 2 front differential pinions and 2 pinion thrust washers with ATF and install them to the differential case.

**10. INSTALL FRONT DIFFERENTIAL PINION SHAFT NO.1**

- (a) Apply the front differential pinion shaft No.1 with ATF, install it to the differential case.

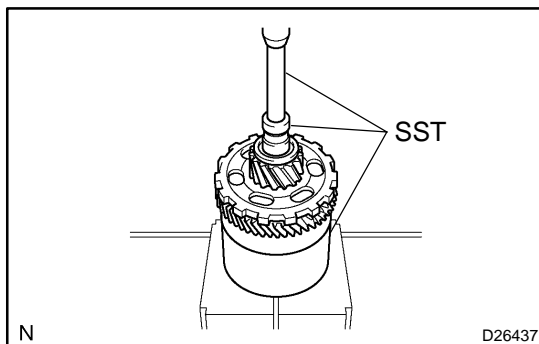


- (c) Using a socket wrench, remove the lock nut.

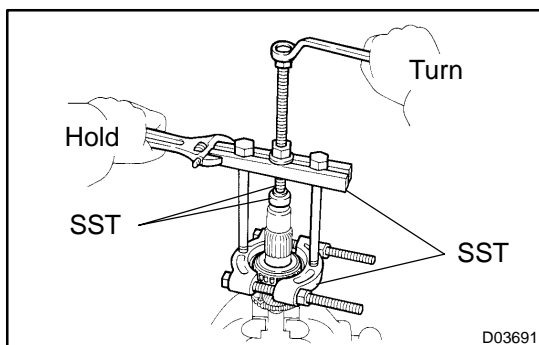


3. REMOVE CYLINDRICAL ROLLER BEARING RACE INNER

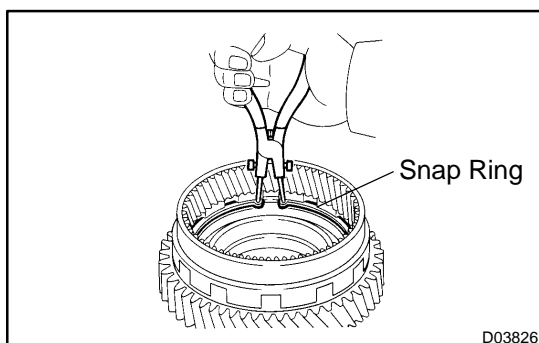
- (a) Using SST, remove the cylindrical roller bearing race inner.
SST 09950-00020, 09950-00030, 09950-60010
(09951-00320), 09950-40011 (09957-04010)



- ### 4. REMOVE UNDERDRIVE PLANETARY GEAR ASSY
- (a) Using SST and a press, remove the differential drive pinion, parking lock gear, counter driven gear with underdrive planetary ring gear and front tapered roller bearing.
SST 09950-60010 (09951-00320), 09387-00050

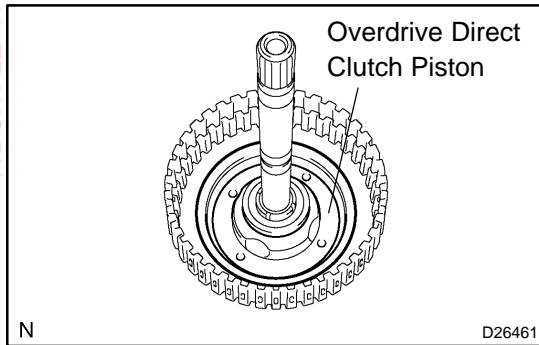


- (b) Clamp the underdrive planetary gear in soft jaw vise.
(c) Using SST, remove the rear tapered roller bearing from the underdrive planetary gear.
SST 09950-00020, 09950-00030, 09950-60010
(09951-00320), 09950-40011 (09957-04010)



5. REMOVE UNDERDRIVE PLANETARY RING GEAR

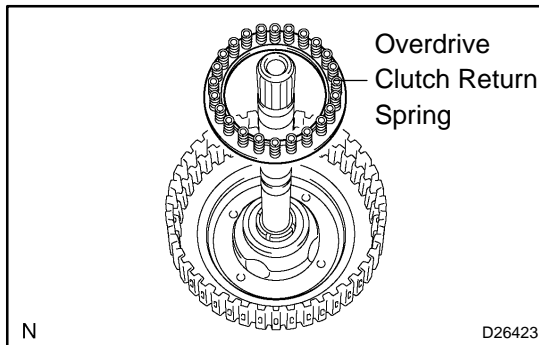
- (a) Using a snap ring pliers, remove the snap ring.

**14. INSTALL OVERDRIVE DIRECT CLUTCH PISTON**

- (a) Apply the overdrive direct clutch piston with ATF, and install it to the direct clutch drum.

NOTICE:

Be careful not to damage the lip seal of the direct clutch piston.

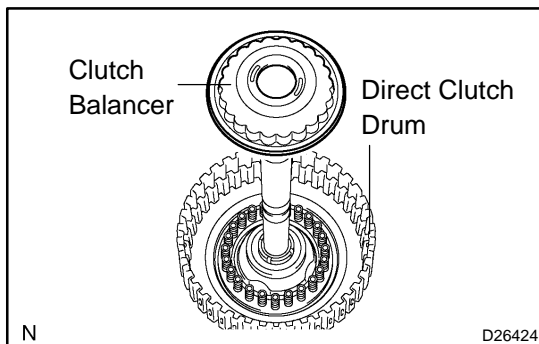
**15. INSTALL OVERDRIVE CLUTCH RETURN SPRING SUB-ASSY**

- (a) Install the piston return spring to the direct clutch drum.

NOTICE:

Installing the spring sub-assembly, check all of the springs are fit in the piston correctly.

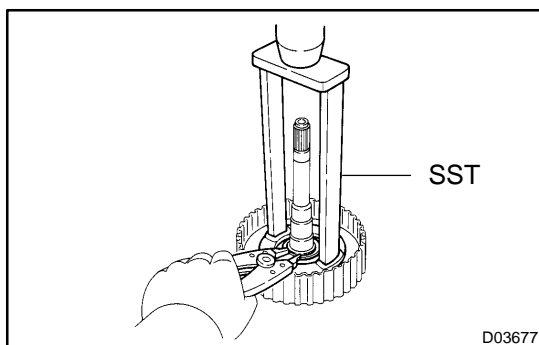
- (b) Coat the clutch balancer with ATF.



- (c) Install the clutch balancer to the direct clutch drum.

NOTICE:

- **Be careful not to damage the lip seal of the direct clutch balancer.**
- **Install the clutch balancer carefully not to have a pinching and any other defects at the sealing lip.**
- **Apply enough ATF to the sealing lip prior to assembling.**



- (d) Place SST on the clutch balancer and compress the piston return spring with a press.

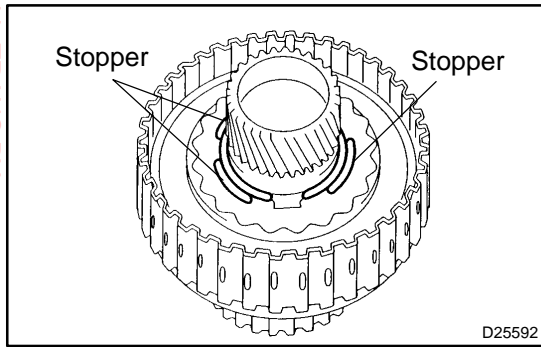
SST 09387-00020

- (e) Using a snap ring expander, install the snap ring to the direct clutch drum.

- (f) Be sure the end gap of the snap ring is not aligned with the spring retainer claw.

NOTICE:

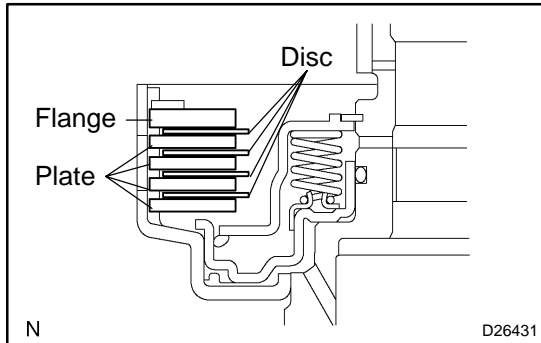
- **Stop the press when the spring sheet is lowered to the place 1 - 2 mm (0.039 - 0.078 in.) from the snap ring groove.**
- **This prevents the spring sheet from being deformed.**
- **Do not expand the snap ring excessively.**



(g) Set the end gap of the snap ring in the underdrive clutch drum shown in the illustration.

NOTICE:

The end gap of the snap ring should not coincide with any of the stopper.

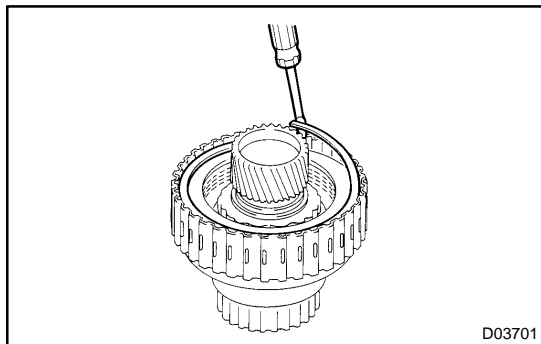


13. INSTALL UNDERDRIVE CLUTCH DISC NO.1

- (a) Apply the 4 discs with ATF.
- (b) Install the 4 plates, 4 discs and flange to the underdrive clutch drum.

NOTICE:

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

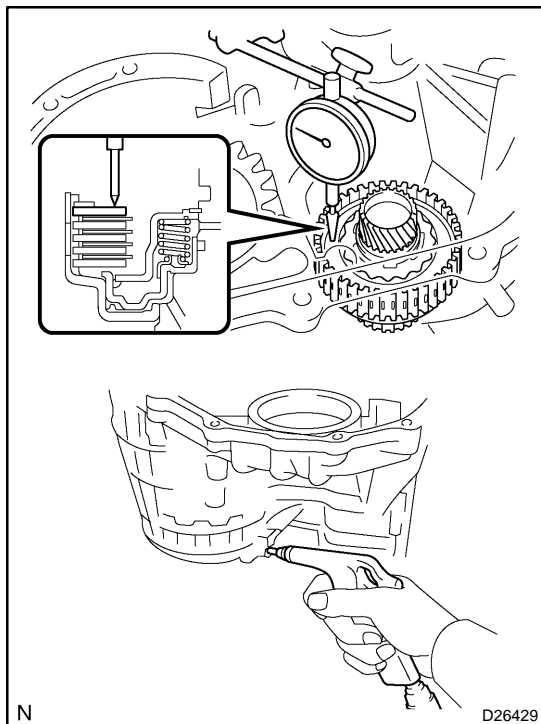


14. INSTALL UNDERDRIVE CLUTCH FLANGE NO.2 HOLE SNAP RING

- (a) Using a screwdriver, install the underdrive clutch flange No.2 hole snap ring.
- (b) Check that the end gap of snap ring is not aligned with one of the cutouts.

NOTICE:

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



15. INSPECT UNDERDRIVE PACK CLEARANCE

- (a) Install the underdrive clutch to the transaxle case.

NOTICE:

Be careful not to damage the oil seal ring.

- (b) Set a dial indicator as shown in the illustration.
- (c) Measure the underdrive clutch piston stroke while applying and releasing compressed air (392 kPa, 4.0 kgf/cm², 57 psi).

Park clearance: 1.51 - 1.71 mm (0.0594 - 0.0673 in.)

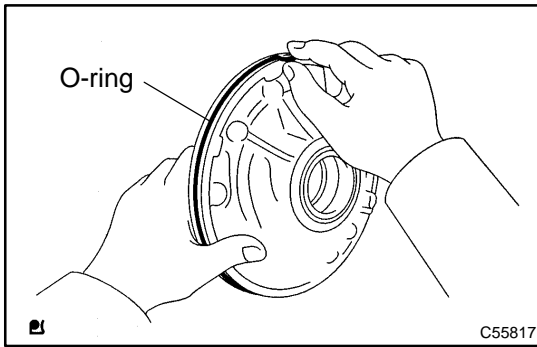
If the pack clearance is less than the minimum, parts may have been assembled incorrectly, so check and reassemble again. If the pack clearance is not within standard, select another flange.

HINT:

There are 5 flanges in different thickness.

Flange thickness: mm (in.)

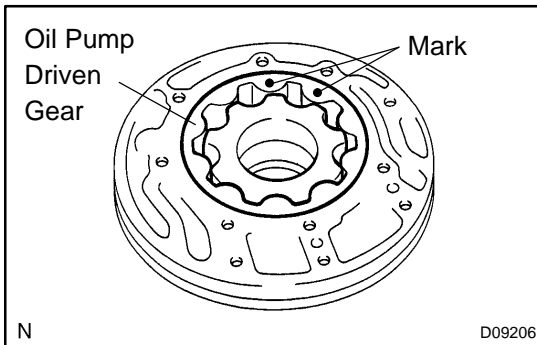
Mark	Thickness	Mark	Thickness
1	3.0 (0.118)	4	3.1 (0.122)
2	3.2 (0.126)	5	3.3 (0.130)
3	3.4 (0.134)	-	-

**12. INSTALL FRONT OIL PUMP BODY O-RING**

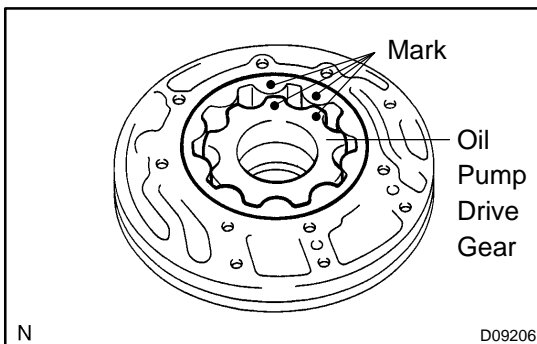
- (a) Coat the new O-ring with ATF, install it to the oil pump body.

NOTICE:

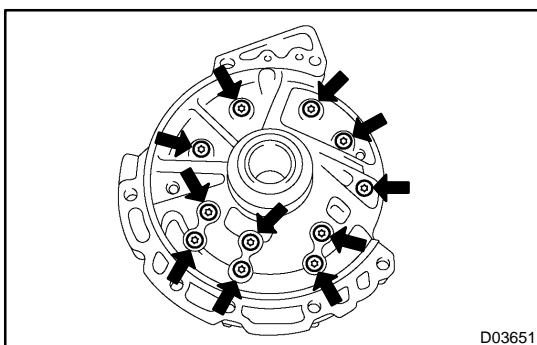
Assemble the O-ring carefully not to have a twist and a pinching. Moreover, apply enough ATF to the O-ring prior to assembling.

**13. INSTALL FRONT OIL PUMP DRIVEN GEAR**

- (a) Coat the front oil pump driven gear with ATF, install it to the oil pump body with the marked side up.

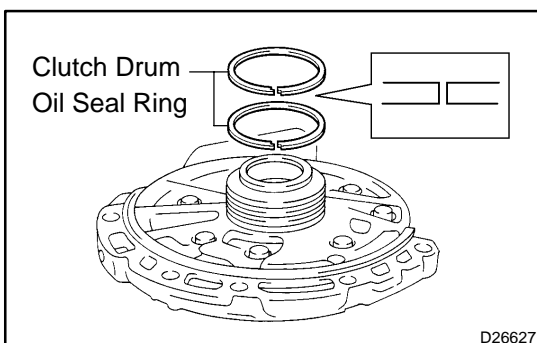
**14. INSTALL FRONT OIL PUMP DRIVE GEAR**

- (a) Coat the front oil pump drive gear with ATF, install it to the oil pump body with the marked side up.

**15. INSTALL STATOR SHAFT ASSY**

- (a) Set the stator shaft aligned with each bolt hole.
 (b) Using a torx socket (T30), install the 11 bolts.

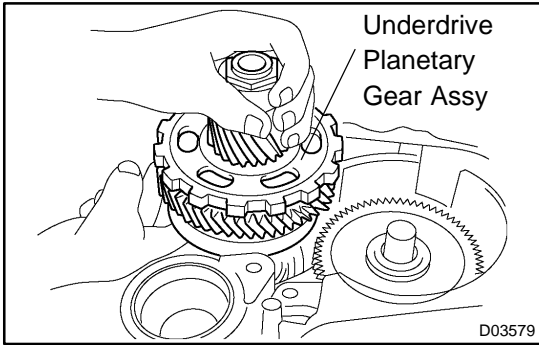
Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)

**16. INSTALL CLUTCH DRUM OIL SEAL RING**

- (a) Coat the 2 new clutch drum oil seal rings with ATF.
 (b) Install the 2 new clutch drum oil seal rings.

NOTICE:

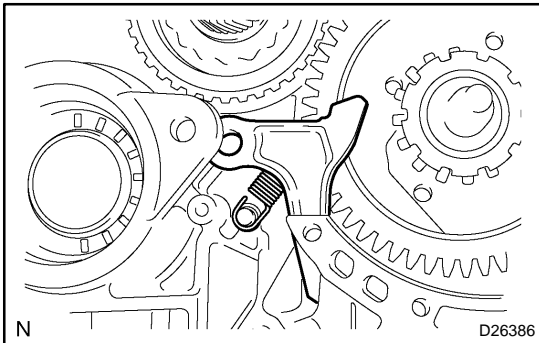
Do not expand the ring ends excessively.



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

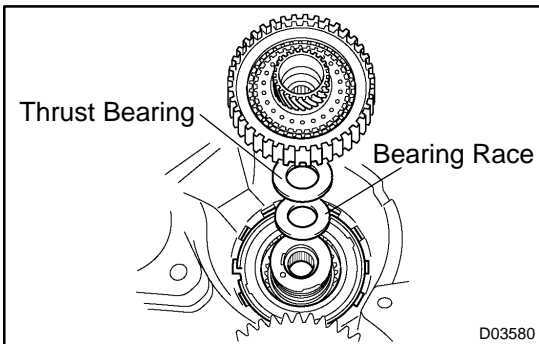
NOTICE:

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



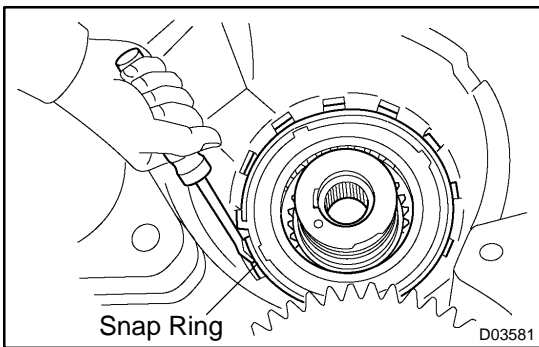
40. REMOVE PARKING LOCK PAWL

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



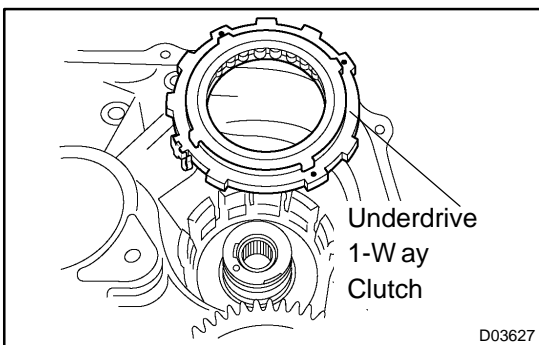
41. REMOVE UNDERDRIVE CLUTCH ASSY

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



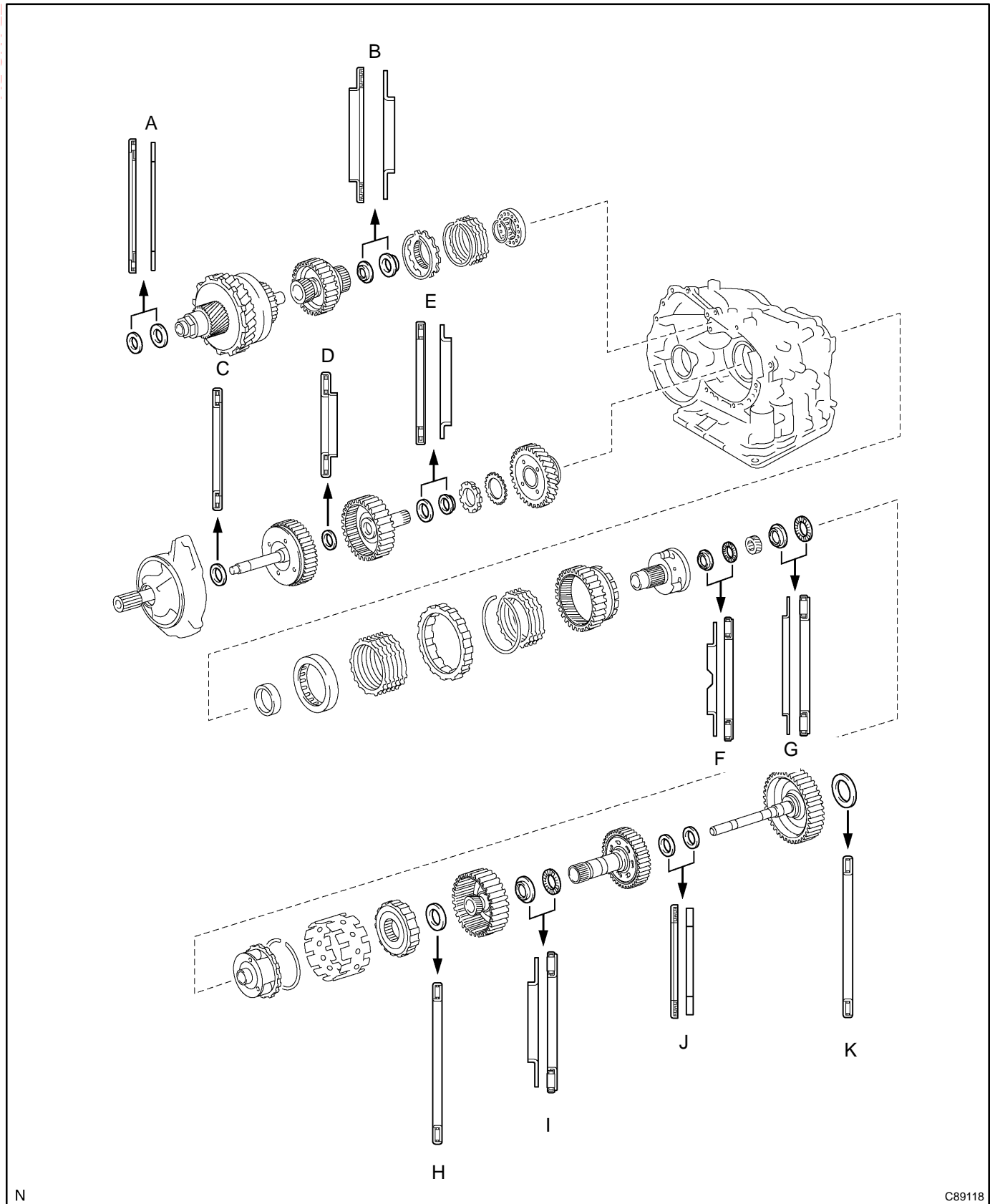
42. REMOVE UNDERDRIVE 1 WAY CLUTCH ASSY

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



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

82. BEARING POSITION



N

C89118