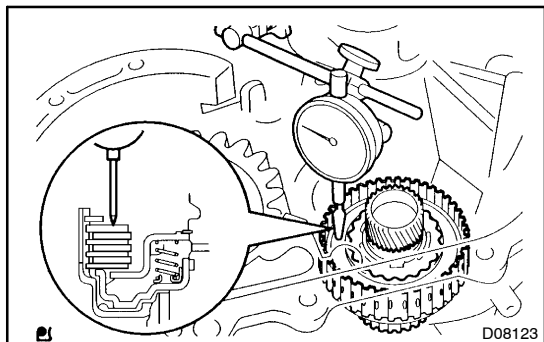


# UNDERDRIVE CLUTCH ASSY (U140E/U140F) OVERHAUL

4006J-01



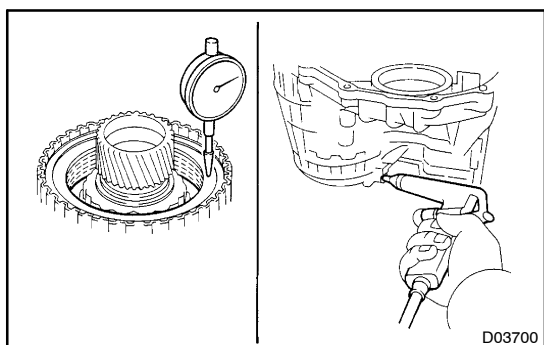
## 1. INSPECT UNDERDRIVE PACK CLEARANCE

- (a) Install the U/D clutch to the transaxle case.

### NOTICE:

**Be careful not to damage the oil seal rings.**

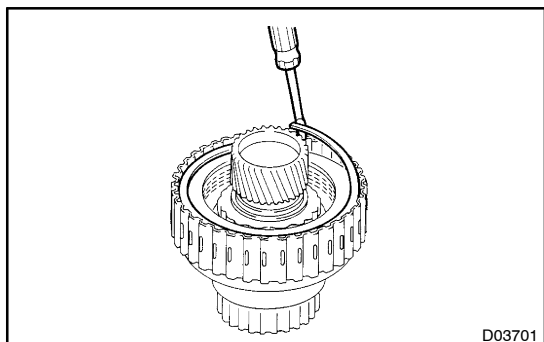
- (b) Install a dial indicator as shown in the illustration.



- (c) Measure the U/D clutch pack clearance while applying and releasing compressed air (392 kPa, 4.0 kgf/cm<sup>2</sup>, 57 psi).

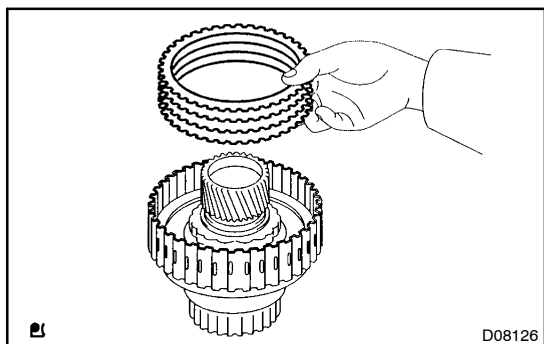
**Pack clearance: 1.51 – 1.90 mm (0.0594 – 0.0748 in.)**

If the pack clearance is non-standard, inspect the discs, plates and flange.



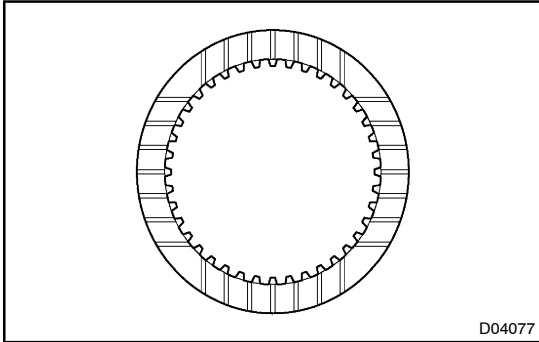
## 2. REMOVE UNDERDRIVE CLUTCH FLANGE NO.1 HOLE SNAP RING

- (a) Using a screwdriver, remove the U/D clutch flange No. 2 snap ring.



## 3. REMOVE UNDERDRIVE CLUTCH DISC NO.1

- (a) 1MZ-FE:  
Remove the flange, 4 discs and 4 plates from the U/D clutch drum.
- (b) 2AZ-FE:  
Remove the flange, 3 discs and 3 plates from the U/D clutch drum.

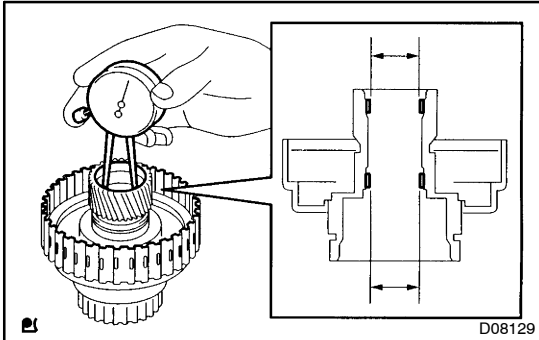


#### 4. INSPECT UNDERDRIVE CLUTCH DISC NO.1

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

**HINT:**

- If the lining of the disc is peeling off or discolored, or even if a part of the printed mark is defaced, replace all discs.
- Before assembling new discs, soak them in ATF for at least 15 minutes.



#### 5. INSPECT UNDERDRIVE CLUTCH DRUM SUB-ASSY

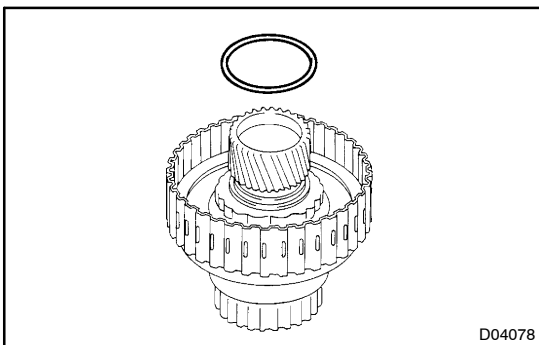
- (a) Using a dial indicator, measure the inside diameter of the U/D clutch drum bushing.

**Standard drum bushing:**

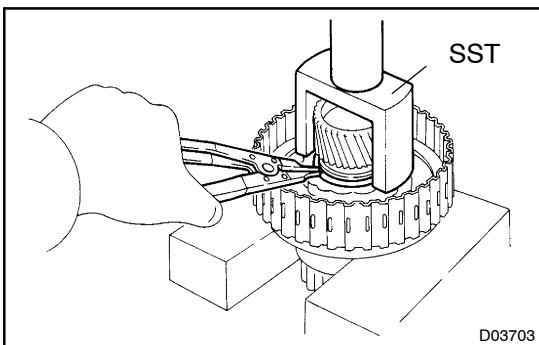
**37.06 – 37.08 mm (1.4591 – 1.4598 in.)**

**Maximum drum bushing: 37.13 mm (1.4618 in.)**

If the inside diameter is greater than the maximum, replace the U/D clutch drum.



#### 6. REMOVE UNDERDRIVE CLUTCH DRUM O-RING



#### 7. REMOVE UNDERDRIVE CLUTCH PISTON SET

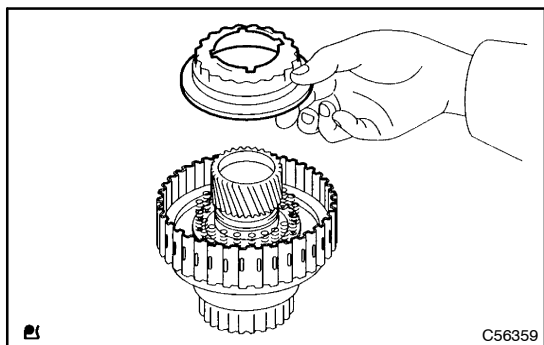
- (a) Place SST on the clutch balancer and compress the spring with a press.

SST 09350-32014 (09351-32070)

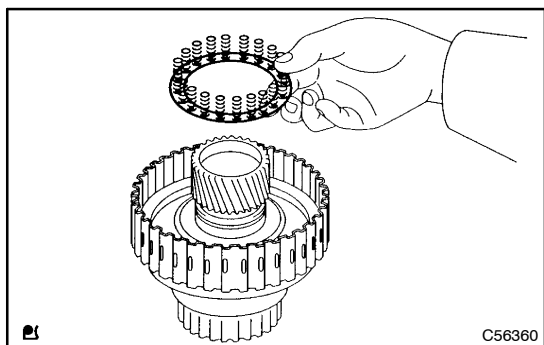
- (b) Using a snap ring expander, remove the snap ring.

**NOTICE:**

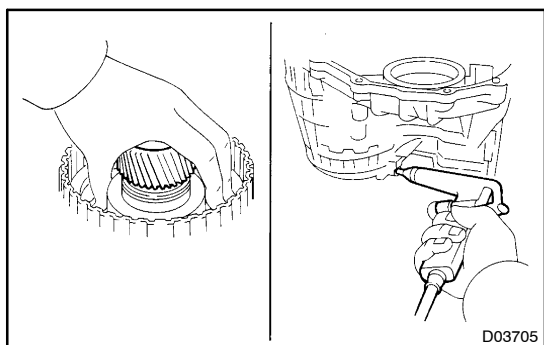
- **Stop the press when the spring sheet is lowered to the place 1 – 2 mm (0.039 – 0.078 in.) from the snap ring groove.**
- **This prevents the spring sheet from being deformed.**
- **Do not expand the snap ring excessively.**



- (c) Remove the clutch balancer from the U/D clutch drum.



- (d) Remove the piston return spring from the U/D clutch drum.

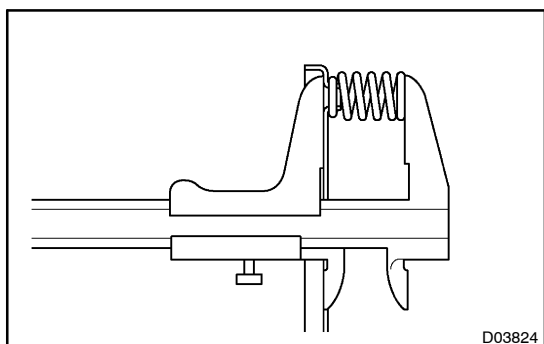


- (e) Install the U/D clutch to the transaxle case.

**NOTICE:**

**Be careful not to damage the oil seal rings.**

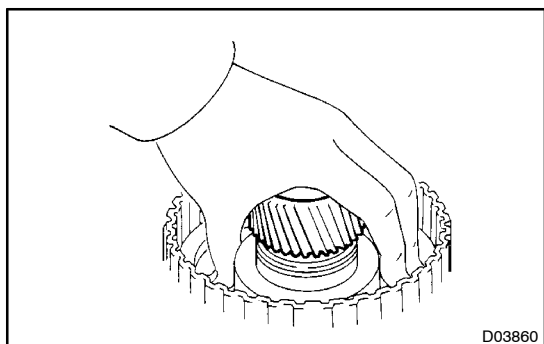
- (f) Holding the U/D clutch piston with your hand, apply compressed air (392 kPa, 4.0 kgf/cm<sup>2</sup>, 57 psi) to the transaxle case to remove the U/D clutch piston.



**8. INSPECT UNDERDRIVE CLUTCH RETURN SPRING SUB-ASSY**

- (a) Using vernier calipers, measure the free length of the spring together with the spring seat.

**Standard free length: 17.14 mm (0.6752 in.)**

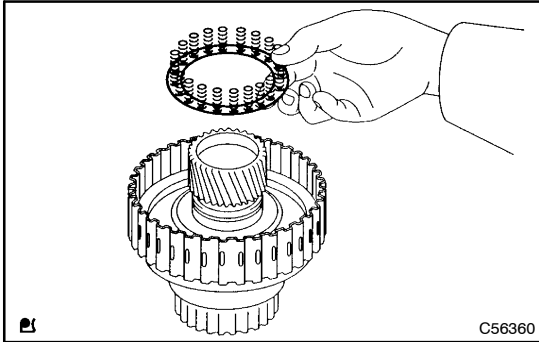


**9. INSTALL UNDERDRIVE CLUTCH PISTON SET**

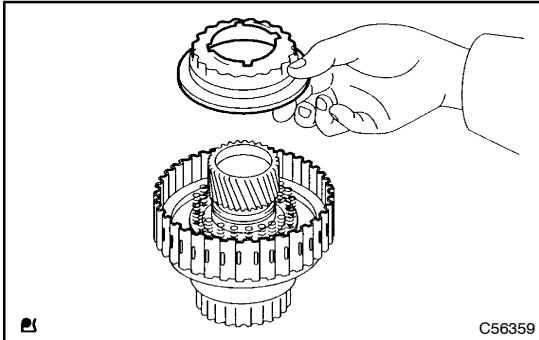
- (a) Coat the U/D clutch piston with ATF, install it to the U/D clutch piston drum.

**NOTICE:**

**Be careful not to damage the O-ring.**



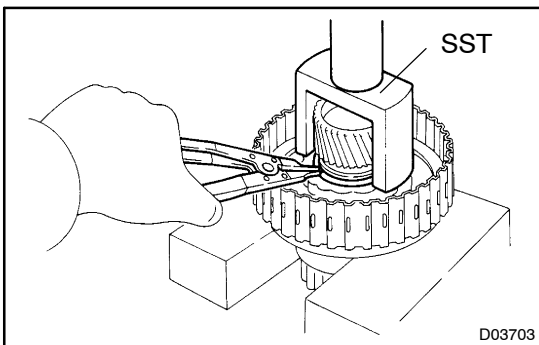
(b) Install the piston return spring to the U/D clutch drum.



(c) Install the clutch balancer to the U/D clutch drum.

**NOTICE:**

**Be careful not to damage the lip seal of the clutch balancer.**



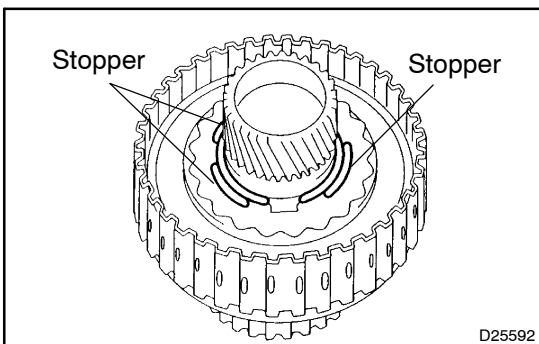
(d) Place SST on the clutch balancer and compress the piston return spring with a press.

SST 09350-32014 (09351-32070)

(e) Using a snap ring expander, install the snap ring to the U/D clutch drum.

**NOTICE:**

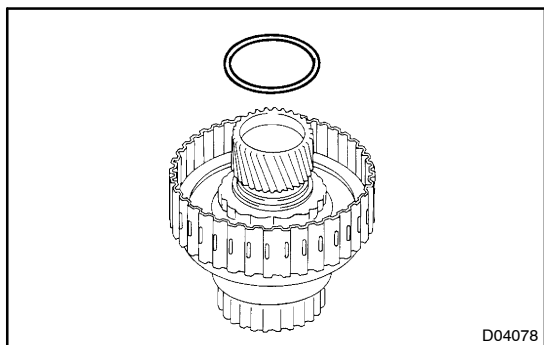
- **Be sure the end gap of the snap ring is not aligned with the clutch balancer's claw.**
- **Stop the press when the spring sheet is lowered to the place 1 – 2 mm (0.039 – 0.078 in.) from the snap ring groove.**
- **This prevents the spring sheet from being deformed.**
- **Do not expand the snap ring excessively.**



(f) Set the end gap of the snap ring in the U/D clutch drum shown in the illustration.

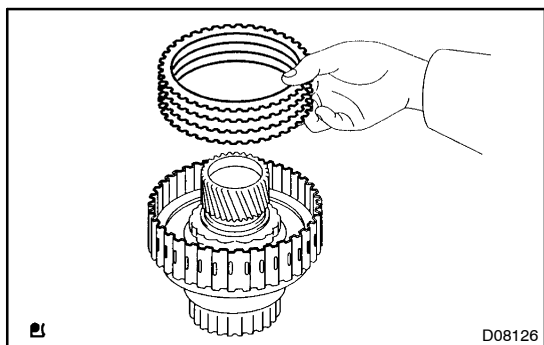
**NOTICE:**

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



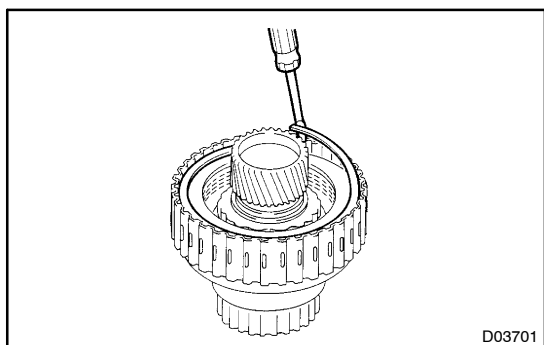
## 10. INSTALL UNDERDRIVE CLUTCH DRUM O-RING

- (a) Coat the new O-ring with ATF, install it to the U/D clutch drum.



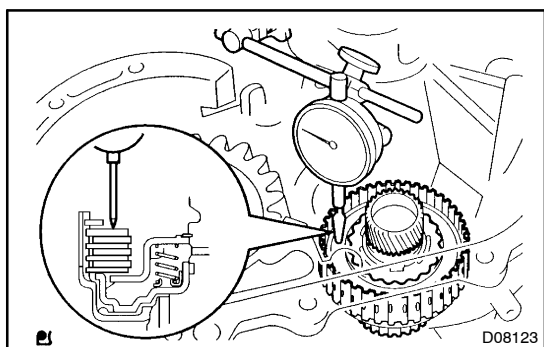
## 11. INSTALL UNDERDRIVE CLUTCH DISC NO.1

- (a) 1MZ-FE:  
Install the 4 plates, 4 discs and flange to the U/D clutch drum.
- (b) 1MZ-FE:  
Install the 3 plates, 3 discs and flange to the U/D clutch drum.



## 12. INSTALL UNDERDRIVE CLUTCH FLANGE NO.1 HOLE SNAP RING

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



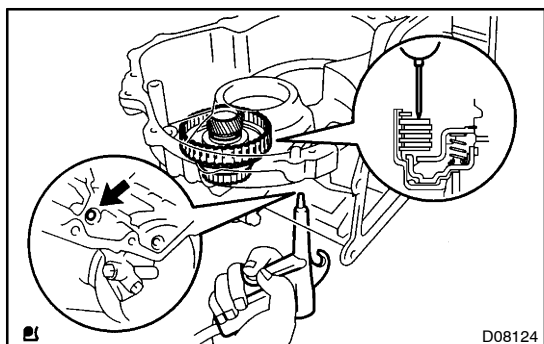
## 13. INSPECT UNDERDRIVE PACK CLEARANCE

- (a) Install the U/D clutch to the transaxle case.

### NOTICE:

**Be careful not to damage the oil seal rings.**

- (b) Set a dial indicator as shown in the illustration.



- (c) Measure the U/D clutch piston stroke while applying and releasing compressed air (392 kPa, 4.0 kgf/cm<sup>2</sup>, 57 psi).

**Park clearance: 1.51 – 1.90 mm (0.0594 – 0.0748 in.)**

If the pack clearance is less than the minimum, parts may have been assembled incorrectly, so check and reassemble again. If the park clearance is non-standard, select another flange.

### HINT:

There are 3 flanges in different thickness.

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

No.	Thickness	No.	Thickness
1	3.0 (0.118)	3	3.4 (0.134)
2	3.2 (0.126)	-	-