

# FORWARD CLUTCH COMPONENTS

AT04V-01

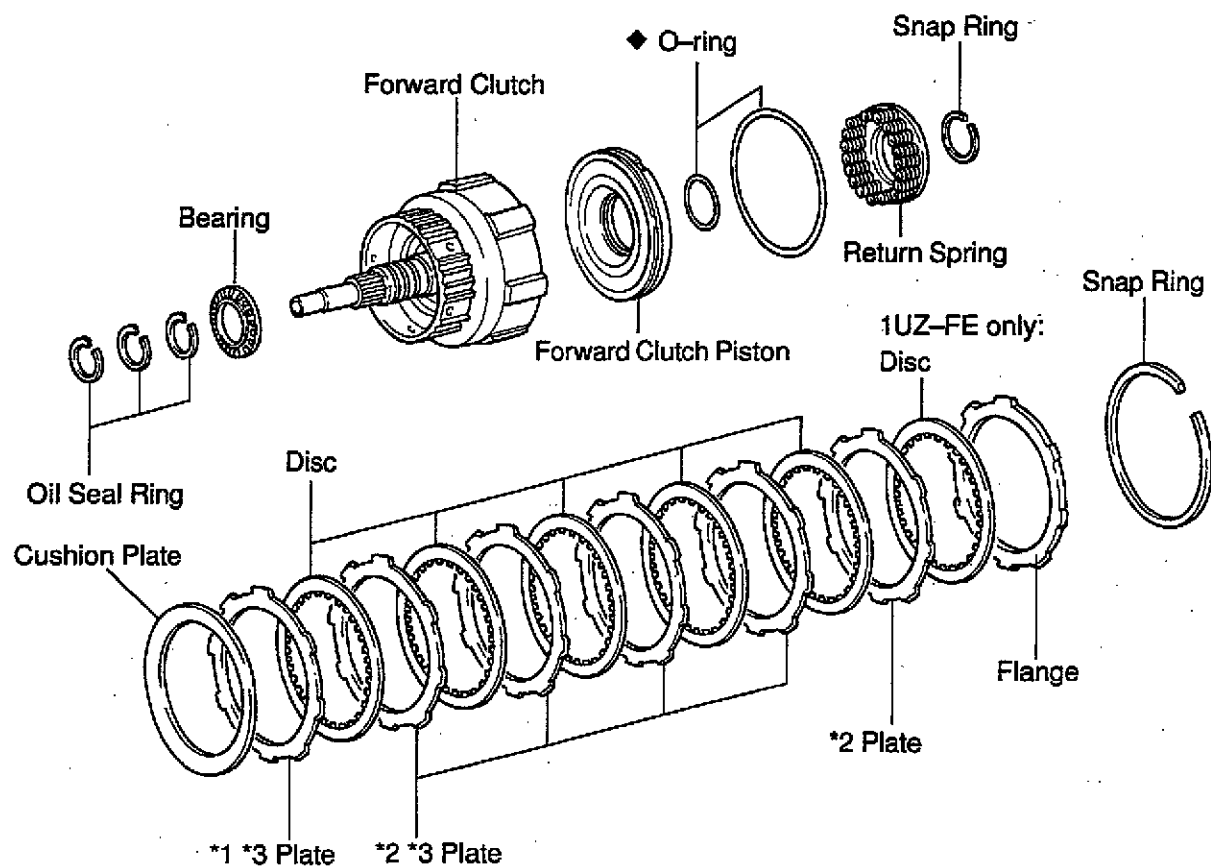


Plate thickness:

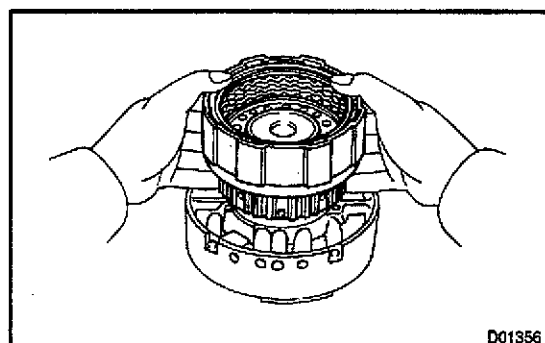
\*1 1UZ-FE: 1.4 mm (0.055 in.)

\*2 1UZ-FE: 1.8 mm (0.071 in.)

\*3 2JZ-GE: 2.3 mm (0.091 in.)

◆ Non-reusable part

D01355

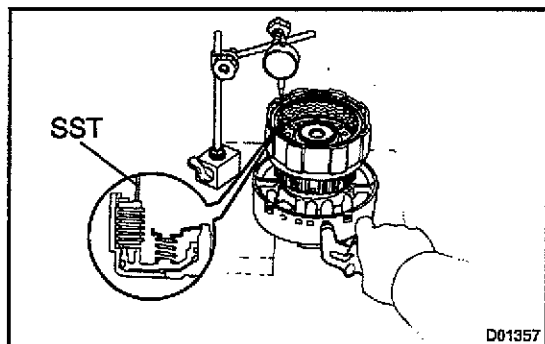


D01356

## DISASSEMBLY

### 1. PLACE FORWARD CLUTCH INTO O/D SUPPORT

- (a) Place wooden blocks, etc, to prevent forward clutch shaft from touching the work stand, and place the O/D support on them.
- (b) Place the forward clutch into the O/D support.



D01357

### 2. CHECK PISTON STROKE OF FORWARD CLUTCH

Using SST and a dial indicator, measure forward clutch piston stroke while applying and releasing compressed air (186 kPa, 1.9 kgf/cm<sup>2</sup>, 27 psi).

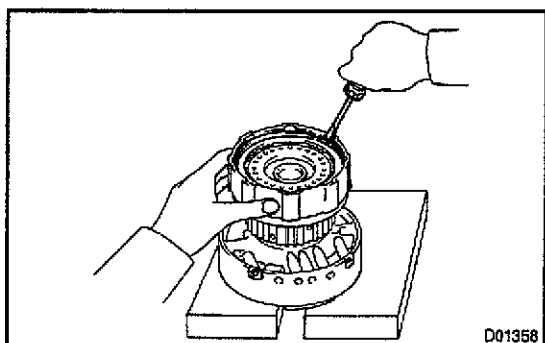
SST 09350-30020 (09350-06120)

**Piston stroke:**

**1UZ-FE: 0.70 – 1.00 mm (0.028 – 0.039 in.)**

**2JZ-GE: 0.60 – 0.90 mm (0.024 – 0.035 in.)**

If the clearance is non-standard, inspect the discs.



D01358

### 3. REMOVE FLANGE, PLATE AND DISC

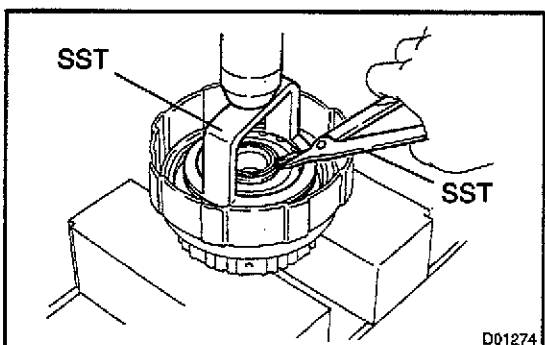
- (a) Using a screwdriver, remove the snap ring from the forward clutch drum.
- (b) Remove the flange, plates and discs.

**HINT:**

1UZ-FE: 6 plates and 6 discs

2JZ-GE: 5 plates and 5 discs

- (c) Remove the cushion plate.



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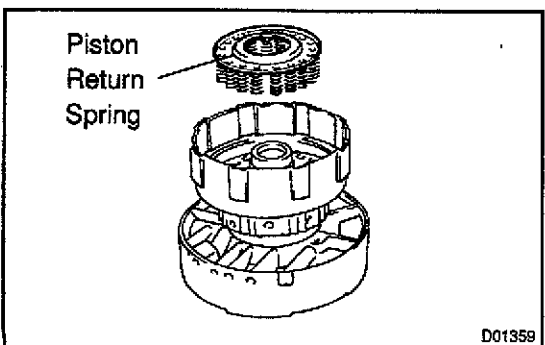
### 4. REMOVE PISTON RETURN SPRING

- (a) Place SST on the spring retainer and compress the return spring with a press.

SST 09350-30020 (09350-07040)

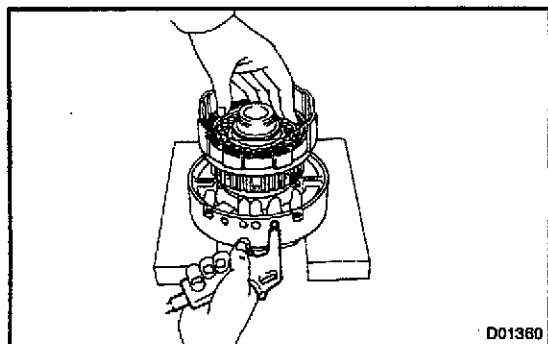
- (b) Using SST, remove the snap ring.

SST 09350-30020 (09350-07070)

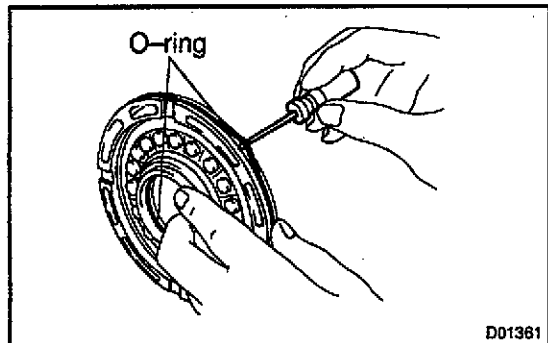


D01359

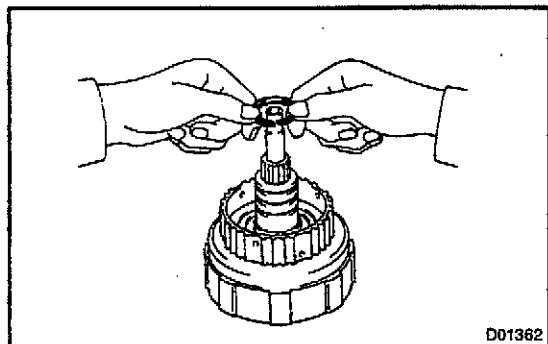
- (c) Remove the piston return spring.

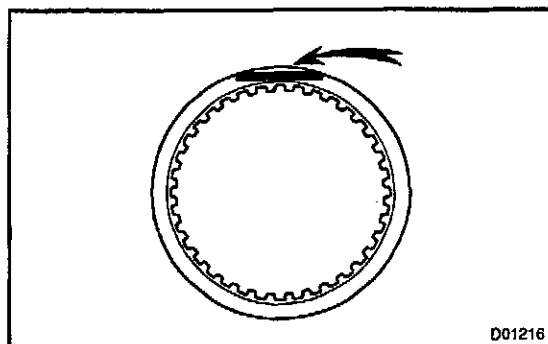
**5. REMOVE FORWARD CLUTCH PISTON**

- (a) Place the forward clutch drum onto the O/D support.
- (b) Hold the forward clutch piston with hand, apply compressed air (186 kPa, 1.9 kgf/cm<sup>2</sup>, 27 psi) to the O/D support to remove the forward clutch piston.
- (c) Remove the forward clutch piston.

**6. REMOVE 2 O-RINGS FROM PISTON**

Using a small screwdriver, remove the 2 O-rings.

**7. REMOVE 3 OIL SEAL RINGS FROM FORWARD CLUTCH**



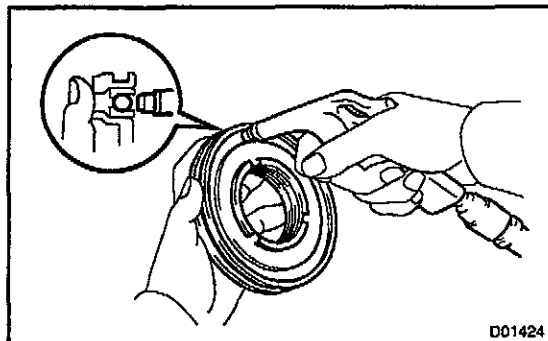
## INSPECTION

### 1. INSPECT DISC, PLATE AND FLANGE

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

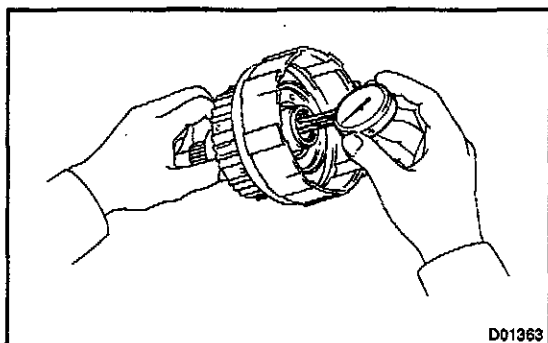
#### HINT:

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



### 2. CHECK FORWARD CLUTCH PISTON

- Check that the check ball is free by shaking the piston.
- Check that the valve does not leak by applying low-pressure compressed air.

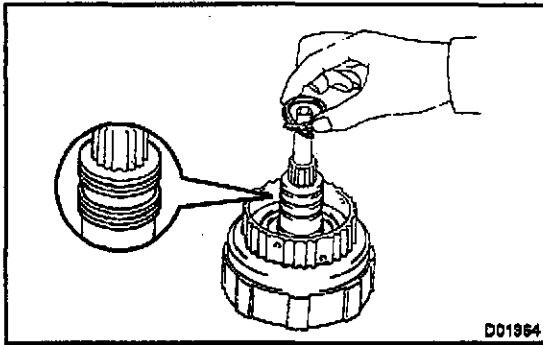


### 3. CHECK FORWARD CLUTCH DRUM BUSHING

Using a dial indicator, measure the inside diameter of the forward clutch drum bushing.

**Maximum inside diameter: 20.08 mm (0.790 in.)**

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



## REASSEMBLY

### 1. INSTALL OIL SEAL RING

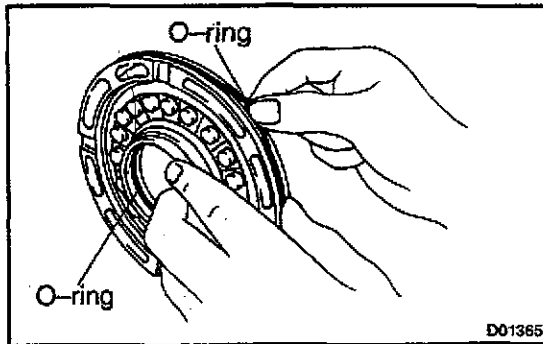
- (a) Coat the 3 oil seal rings with ATF.
- (b) Install the 3 oil seal rings to the forward clutch drum groove, then snug them down by squeezing their ends together.

#### NOTICE:

**Do not spread the ring ends more than necessary.**

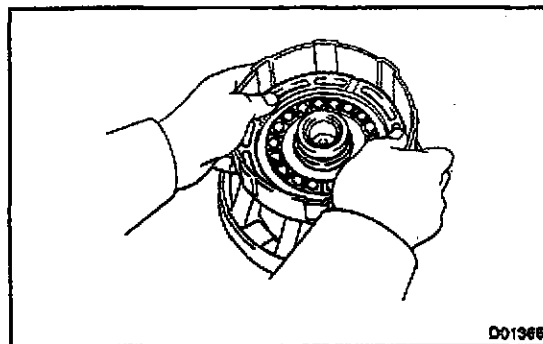
#### HINT:

After installing the oil seal rings, check that they rotate smoothly.

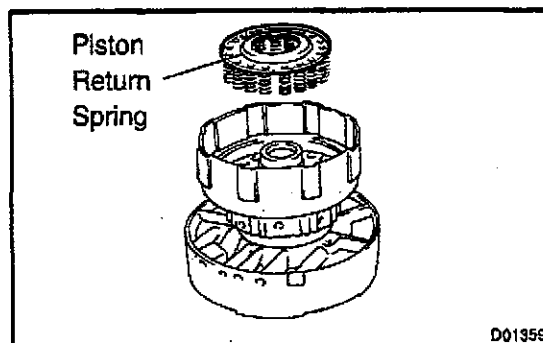


### 2. INSTALL FORWARD CLUTCH PISTON

- (a) Coat 2 new O-rings with ATF and install them on the forward clutch piston.

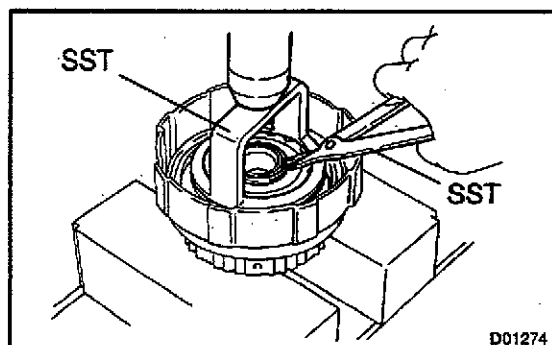


- (b) Being careful not to damage the O-rings, press the clutch piston into the forward clutch drum with both hands.



### 3. INSTALL PISTON RETURN SPRING

- (a) Install the piston return spring.



- (b) Place SST on the spring retainer, and compress the return spring with a press.

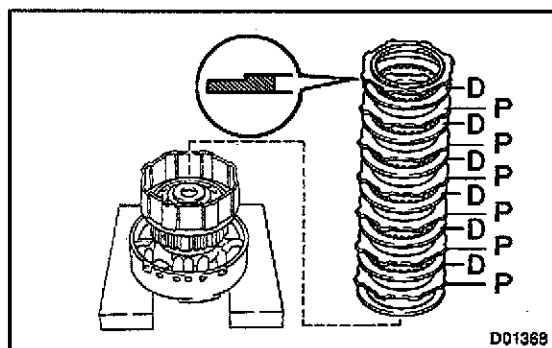
SST 09350-30020 (09350-07040)

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

SST 09350-30020 (09350-07070)

**NOTICE:**

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



**4. INSTALL PLATE, DISC AND FLANGE**

- (a) Install the cushion plate.

- (b) Install the plates and discs.

**HINT:**

1UZ-FE: 6 plates and 6 discs

Only the thickness of the plate on the bottom is 1.4 mm (0.055 in.) and the other plates is 1.8 mm (0.071 in.).

2JZ-GE: 5 plates and 5 discs

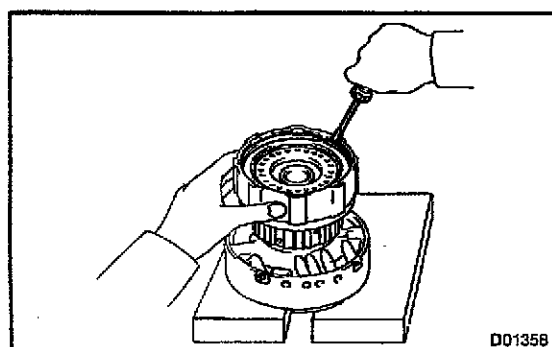
The thickness of all plates is 2.3 mm (0.091 in.).

- (c) Then install the flange, with the flat end facing downward.

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

1UZ-FE: P - D - P - D - P - D - P - D - P - D - P - D

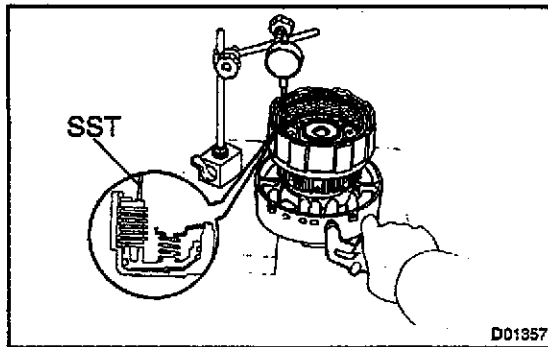
2JZ-GE: P - D - P - D - P - D - P - D - P - D



- (d) Install the snap ring with a screwdriver.

**NOTICE:**

Be sure the end gap of the snap ring is not aligned with the cutout portion of the forward clutch drum.



## 5. CHECK PISTON STROKE OF FORWARD CLUTCH

- (a) Using SST and a dial indicator, measure the forward clutch piston stroke while applying and releasing compressed air (186 kPa, 1.9 kgf/cm<sup>2</sup>, 27 psi).

SST 09350-30020 (09350-06120)

### Piston stroke:

1UZ-FE: 0.70 – 1.00 mm (0.028 – 0.039 in.)

2JZ-GE: 0.60 – 0.90 mm (0.024 – 0.035 in.)

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

If the clearance is non-standard, select another flange.

### HINT:

There are 6 different flanges in thickness.

### Flange thickness

No.	Thickness	No.	Thickness
42	4.0 (0.157)	45	3.4 (0.134)
44	3.8 (0.150)	60	3.2 (0.126)
62	3.6 (0.142)	61	3.0 (0.118)