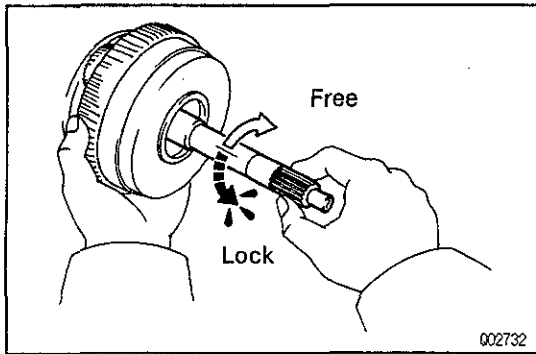


AT072-01



Z04681

OVERDRIVE GEAR UNIT DISASSEMBLY

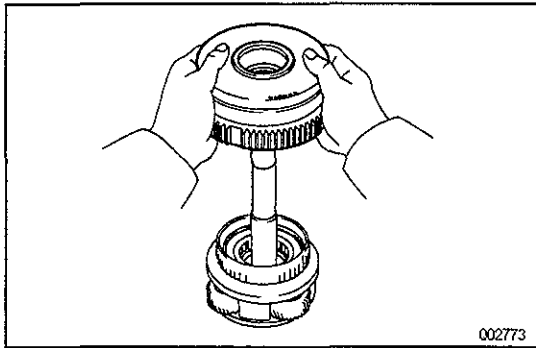


1. CHECK OPERATION OF ONE-WAY CLUTCH

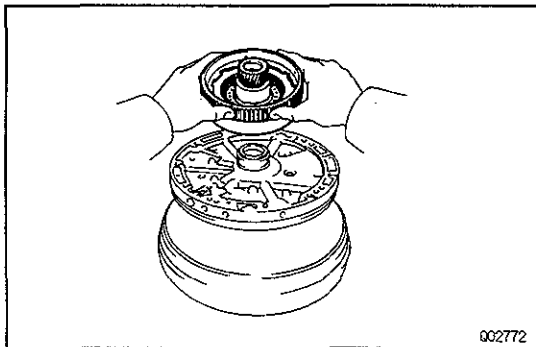
Hold the O/D direct clutch drum and turn the input shaft.

The input shaft should turn freely clockwise and should lock counterclockwise.

AT

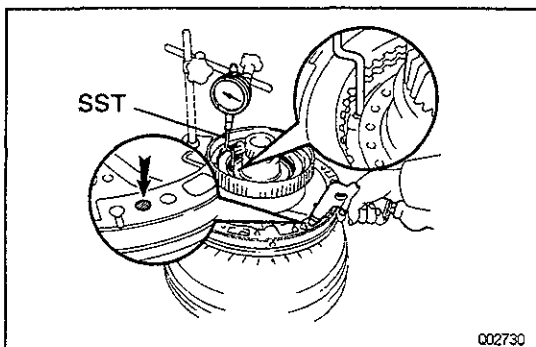


2. REMOVE OVERDRIVE DIRECT CLUTCH ASSEMBLY FROM OVERDRIVE PLANETARY GEAR



3. CHECK PISTON STROKE OF OVERDRIVE DIRECT CLUTCH

- (a) Place the oil pump onto the torque converter, and then place the O/D direct clutch assembly onto the oil pump.



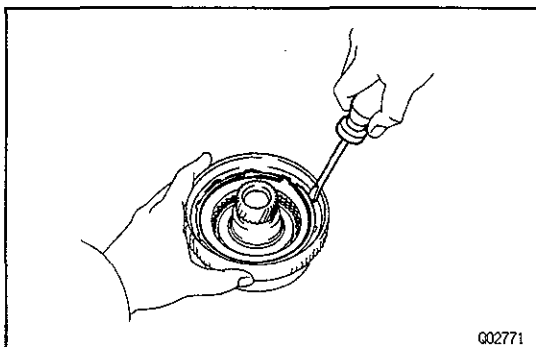
- (b) Using SST and a dial indicator, measure the piston stroke by applying and releasing the compressed air 392 – 785 kPa (4 – 8 kgf/cm², 57 – 114 psi) as shown.

SST 09350–36010(09350–06110)

Piston stroke:

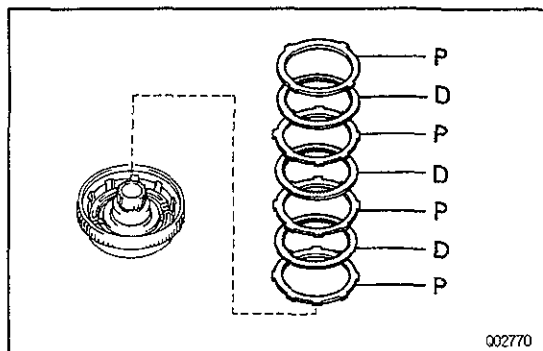
1.80–2.00 mm (0.0709–0.0787 in.)

If the piston stroke is not as specified, inspect the discs.

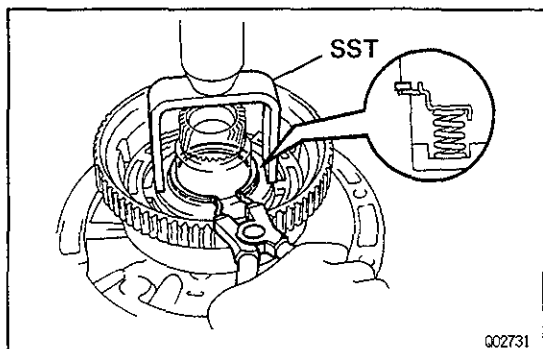


4. REMOVE FLANGE, PLATES AND DISCS

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

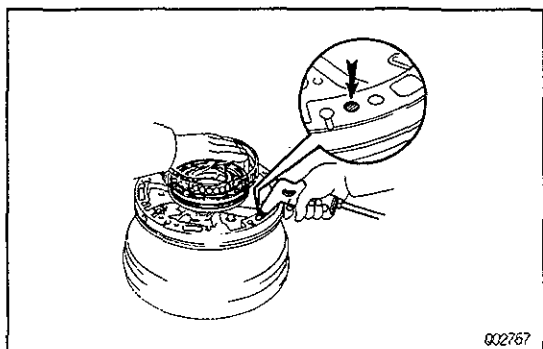


- (b) Remove the flange, three discs and three plates.



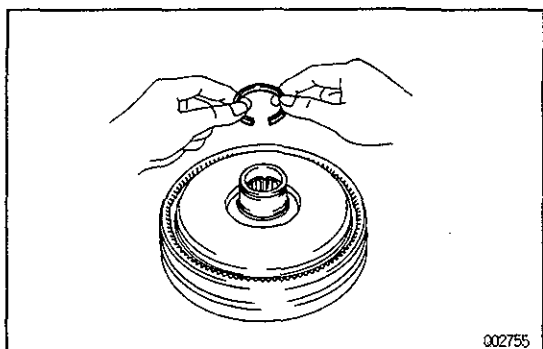
5. REMOVE PISTON RETURN SPRING

- (a) Place SST on the spring seat, and compress the return spring with a shop press.
SST 09350-36010(09350-06010)
- (b) Using snap ring pliers, remove the snap ring.
- (c) Remove the spring seat and twenty – four return springs.

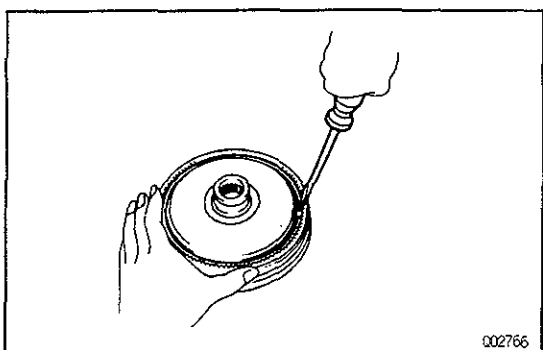


6. REMOVE OVERDRIVE DIRECT CLUTCH PISTON

- (a) Place the oil pump onto the torque converter, and then place the O/D direct clutch onto the oil pump.
- (b) Hold the clutch piston with hand, apply compressed air into the oil hole of the oil pump to remove the clutch piston.
- (b) Remove the two O-rings from the clutch piston.

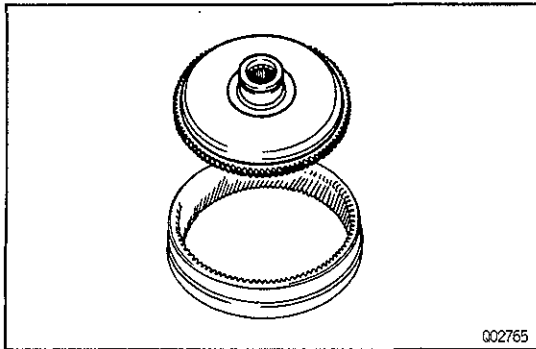


7. REMOVE OIL SEAL RING FROM RING GEAR FLANGE



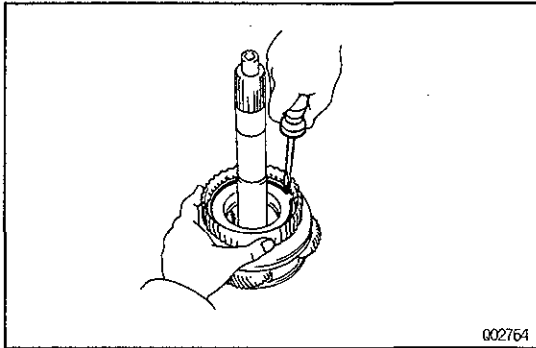
8. REMOVE RING GEAR FLANGE

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



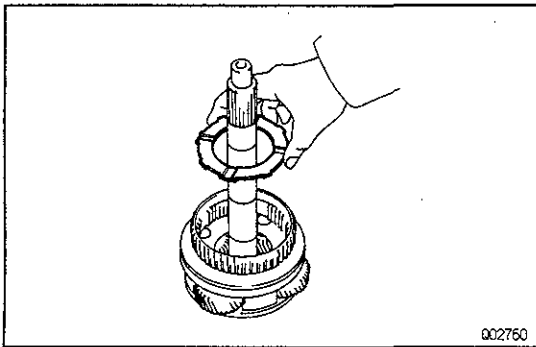
- (b) Remove the ring gear flange.

AT

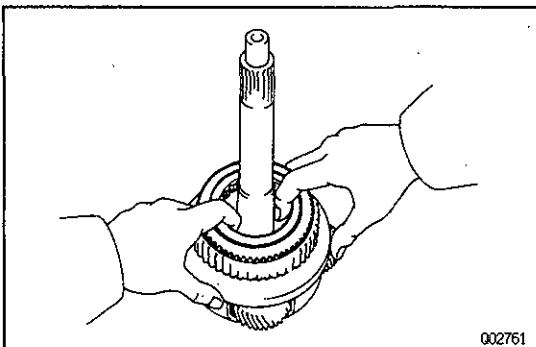


9. REMOVE ONE-WAY CLUTCH FROM OVERDRIVE PLANETARY GEAR

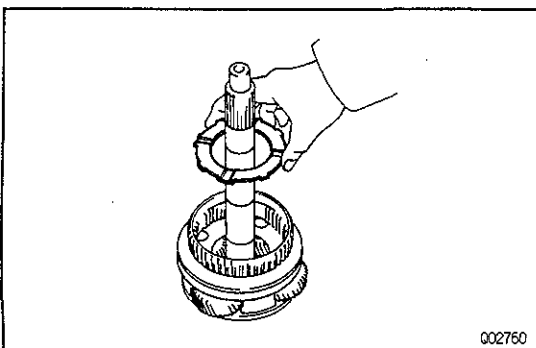
- (a) Using small screwdriver, remove the snap ring.



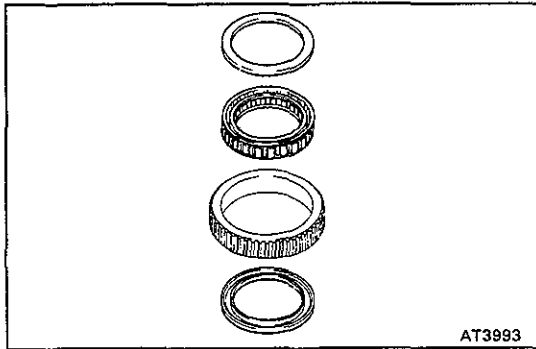
- (b) Remove the No.4 thrust washer.



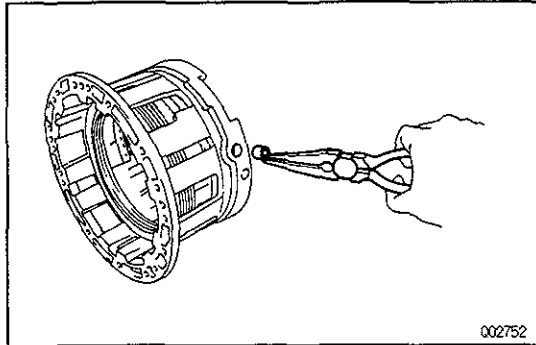
- (c) Remove the one-way clutch together with the outer race.



- (d) Remove the No.3 thrust washer.

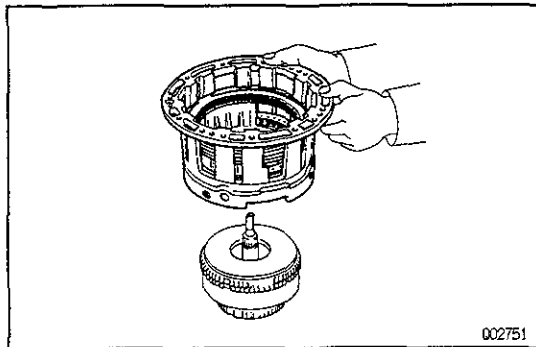


- (e) Remove the two retainers and one-way clutch from the outer race.



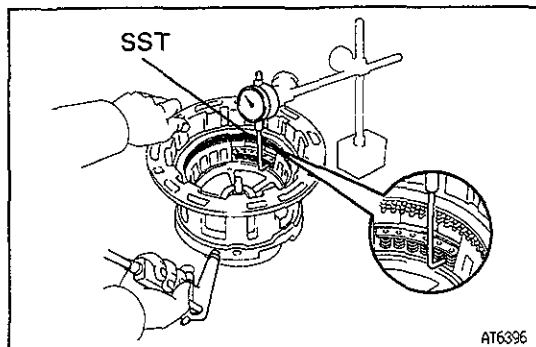
10. REMOVE RING RETAINERS

Using needle nose pliers, remove the three ring retainers from the oil holes of O/D case.



11. CHECK PISTON STROKE OF OVERDRIVE BRAKE

- (a) Place the O/D case assembly onto the rear clutch assembly.



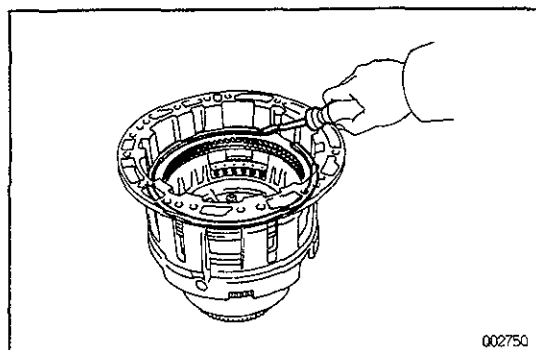
- (b) Using SST and a dial indicator, measure the piston stroke by applying and releasing the compressed air 392–785 kPa (4–8 kgf/cm², 57–114 psi) as shown.

SST 09350–36010(09350–06120)

Piston stroke:

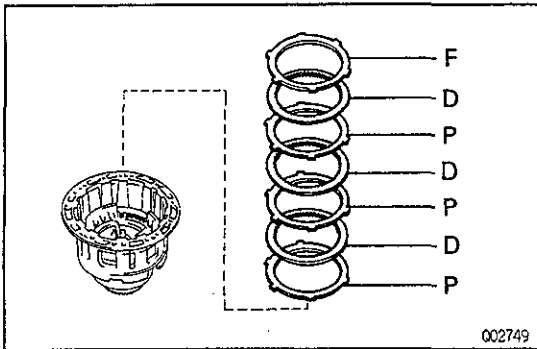
1.25–1.85 mm (0.0492–0.0728 in.)

If the piston stroke is greater than specified, inspect the discs.

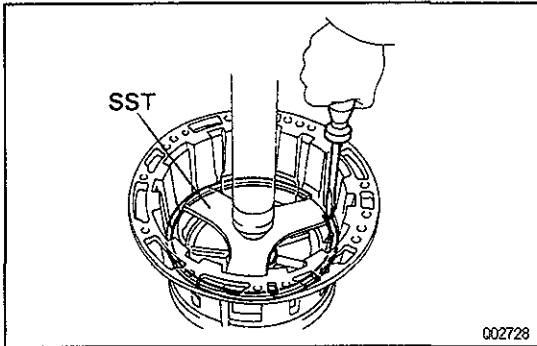


12. REMOVE FLANGE, DISCS AND PLATES

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

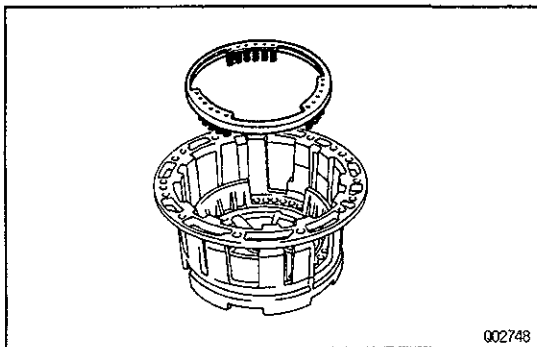


- (b) Remove the flange, three discs and three plates.

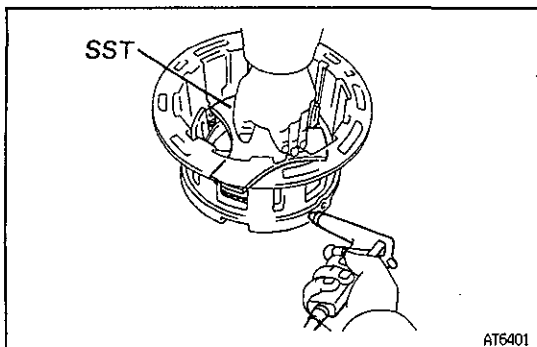


13. REMOVE PISTON RETURN SPRING

- (a) Place SST on the spring seat, and compress the return spring with a shop press.
SST 09350-36010(09350-06020)
- (b) Using screwdriver, remove the snap ring.

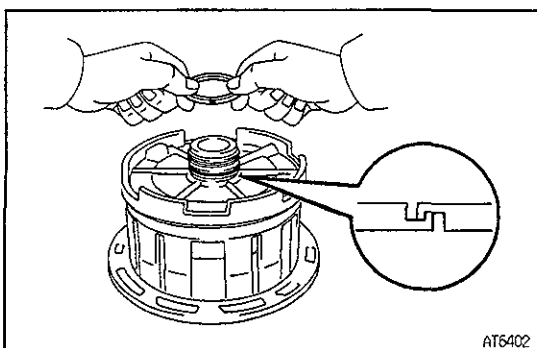


- (c) Remove the return spring.



14. REMOVE OVERDRIVE BRAKE PISTON

- (a) Place the return spring on the brake piston, and then place SST on the return spring.
SST 09350-36010(09350-06020)
- (b) Hold SST so it does not slant, and apply compressed air into the oil hole of the O/D case to remove the brake piston.
SST 09350-36010(09350-06020)
- (c) Remove the two O-rings from the brake piston.



15. REMOVE OIL SEAL RINGS

Remove the two oil seal rings from the O/D case.

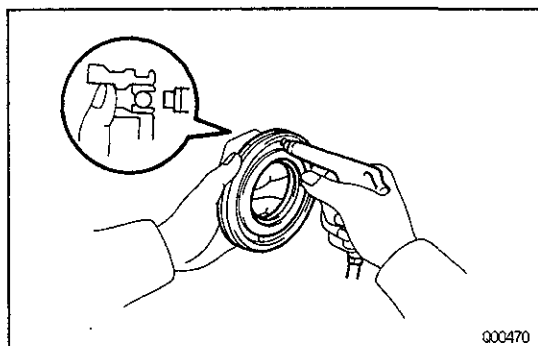
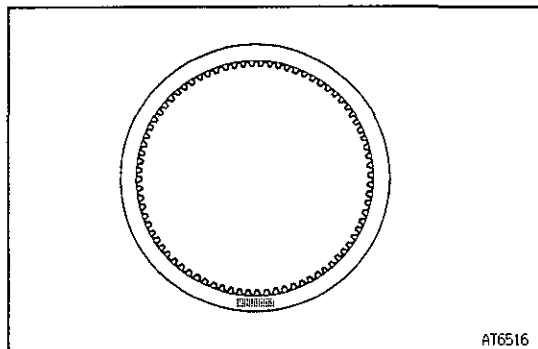
OVERDRIVE UNIT INSPECTION

1. INSPECT DISCS, PLATES AND FLANGE

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

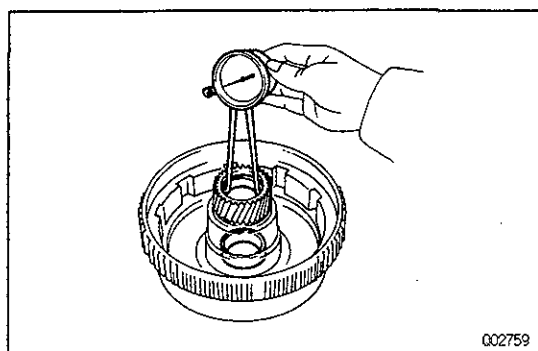
HINT:

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



2. INSPECT OVERDRIVE DIRECT CLUTCH PISTON

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



3. INSPECT BUSHINGS OF OVERDRIVE DIRECT CLUTCH DRUM

Using a dial indicator, measure the inside diameter

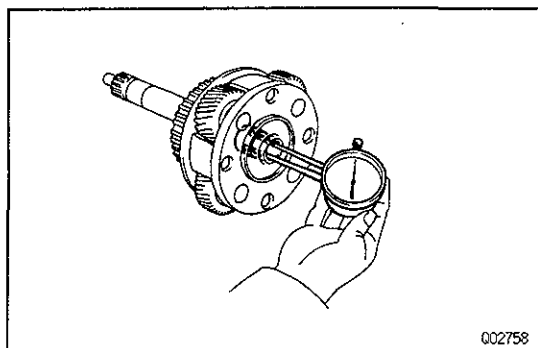
Standard inside diameter:

26.500–26.521 mm (1.0433–1.0441 in.)

Maximum inside diameter;

26.57 mm (1.0461 in.)

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



4. INSPECT BUSHINGS OF OVERDRIVE PLANETARY GEAR

Using a dial indicator, measure the inside diameter.

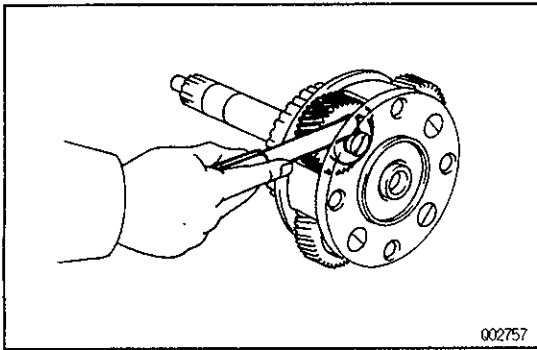
Standard inside diameter:

12.000–12.018 mm (0.4724–0.4731 in.)

Maximum inside diameter:

12.070 mm (0.4752 in.)

If the inside diameter is greater than maximum, replace the planetary gear.



5. INSPECT PLANETARY PINION GEAR THRUST CLEARANCE

Using a feeler gauge, measure the clearance between the pinions and carrier.

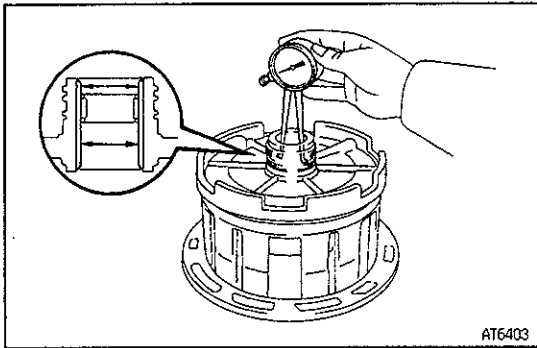
Standard clearance:

0.20–0.59 mm (0.0079–0.0232 in.)

Maximum clearance:

0.80 mm (0.0315 in.)

If the thrust clearance is greater than maximum, replace the planetary gear.



6. INSPECT BUSHING OF OVERDRIVE CASE

Using a dial indicator, measure the inside diameter.

Standard inside diameter:

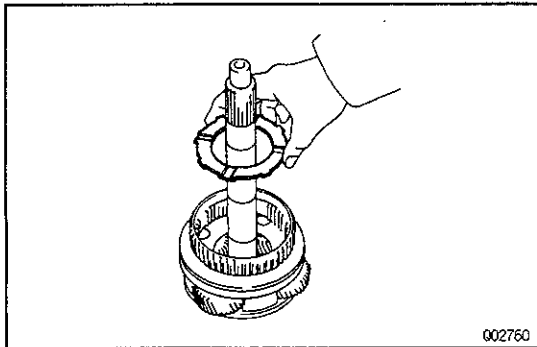
33.10–33.50 mm (1.3031–1.3189 in.)

Maximum inside diameter:

33.20 mm (1.3071 in.)

If the inside diameter is greater than the maximum, replace the O/D case.

AT

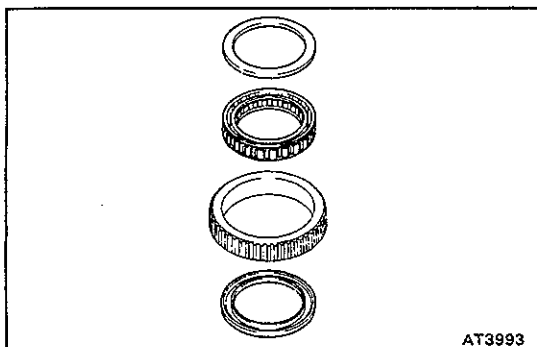


OVERDRIVE UNIT ASSEMBLY

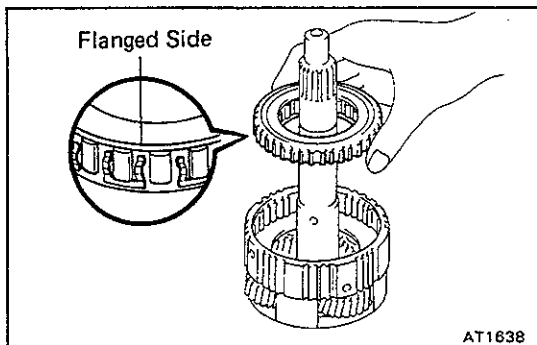
AT082--02

1. INSTALL ONE — WAY CLUTCH TO OVERDRIVE PLANETARY GEAR

- (a) Install the No.3 thrust washer, facing the grooved side upward.

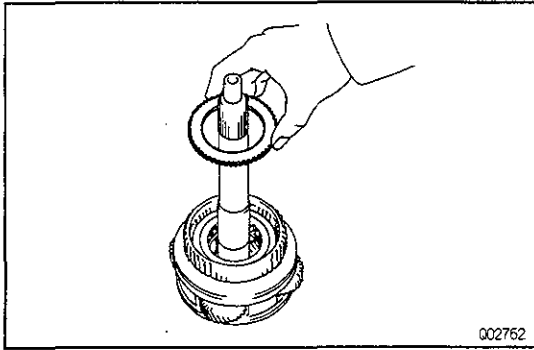


- (b) Install the one—way clutch and two retainers into the outer race.

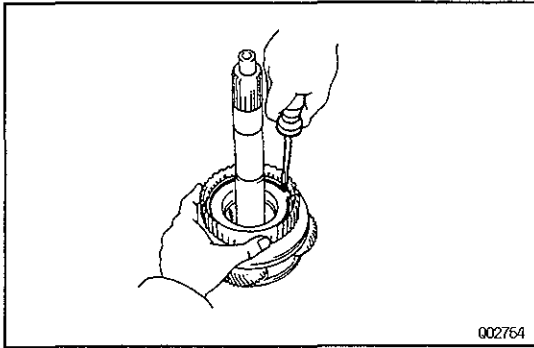


- (c) Install the one—way clutch and outer race assembly, facing the flanged side of the one—way clutch upward.

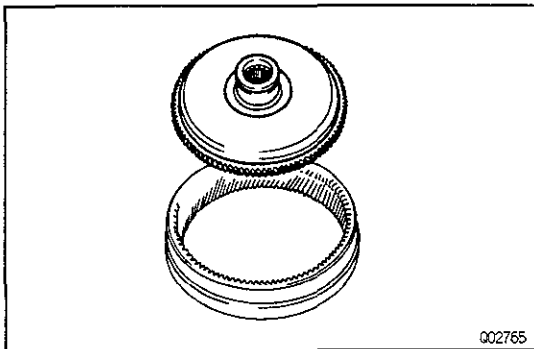
AT



(d) Install the No.4 thrust washer.

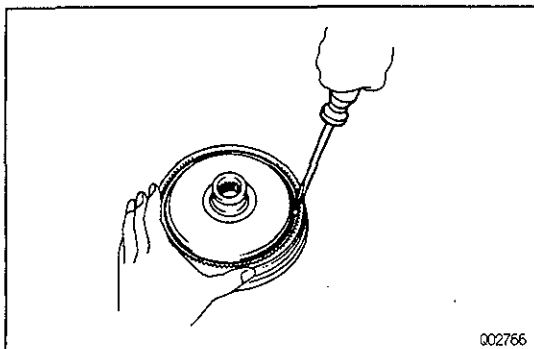


(e) Using a screwdriver, install the snap ring.

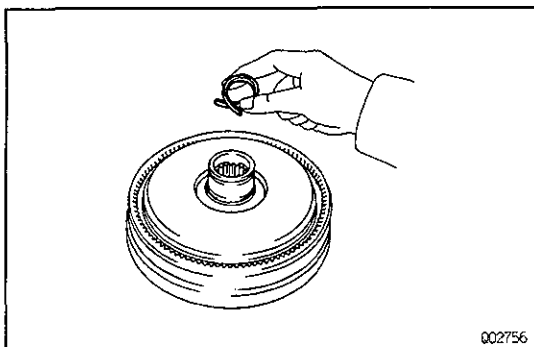


2. INSTALL RING GEAR FLANGE TO OVERDRIVE PLANETARY RING GEAR

(a) Install the gear flange as shown.



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

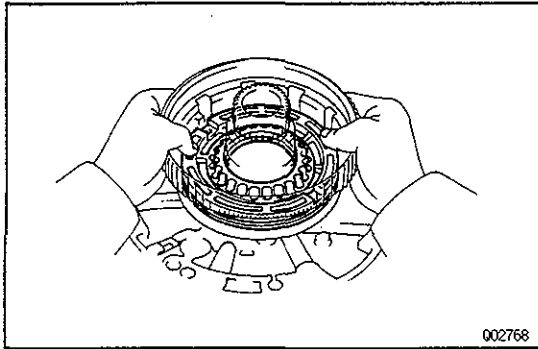


3. INSTALL OIL SEAL RING

Coat the oil seal ring with ATF, and install it to the ring gear flange.

NOTICE: Do not spread the ring ends more than necessary.

HINT: After installing the oil seal ring, check that it moves smoothly.

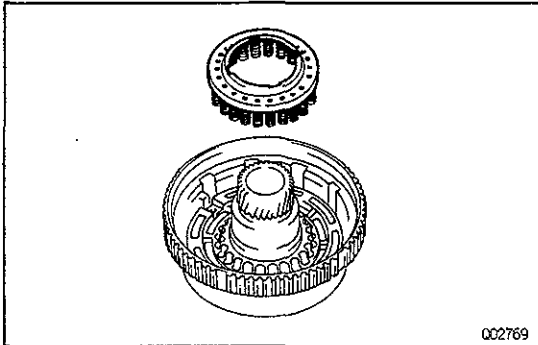


4. INSTALL OVERDRIVE DIRECT CLUTCH PISTON

- (a) Coat new O—rings with ATF, and install them on the clutch piston.
- (b) Push in the clutch piston into the clutch drum with both hands.

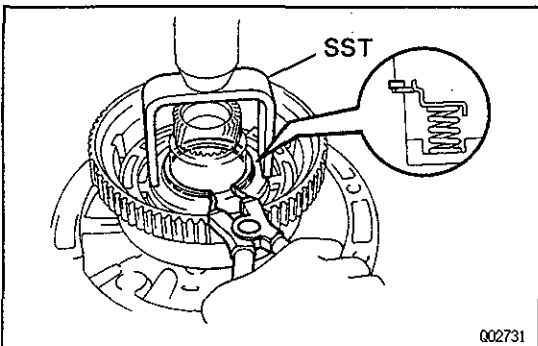
NOTICE: Be careful not to damage the O—rings.

AT



5. INSTALL PISTON RETURN SPRING

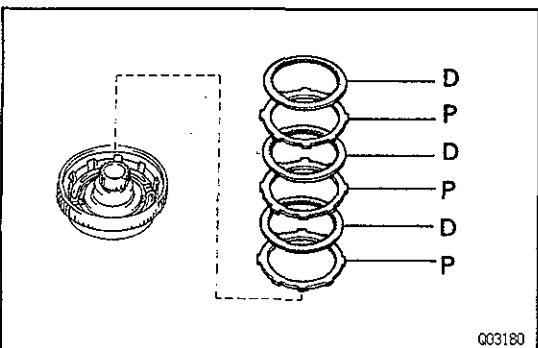
- (a) Place the piston return spring on the clutch piston.



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

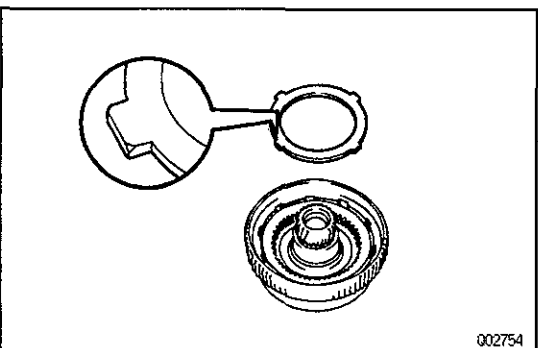
SST 09350—36010(09350—06010)

- (c) Using snap ring pliers, install the snap ring.
HINT: Be sure the end gap of the snap ring is not aligned with the spring retainer claw.

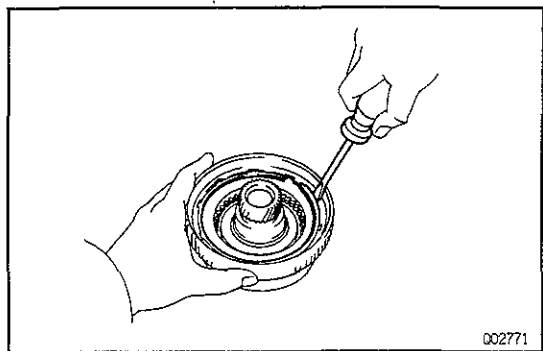


6. INSTALL PLATES, DISCS AND FLANGE

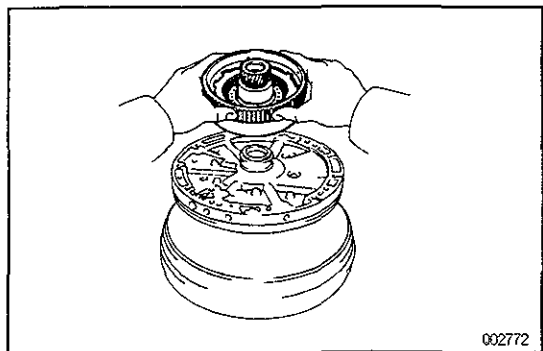
- (a) Install the three plates and three discs in order:
P = Plate D = Disc
P—D—P—D—P—D



- (b) Install the flange, fasing the rounded edge upward.

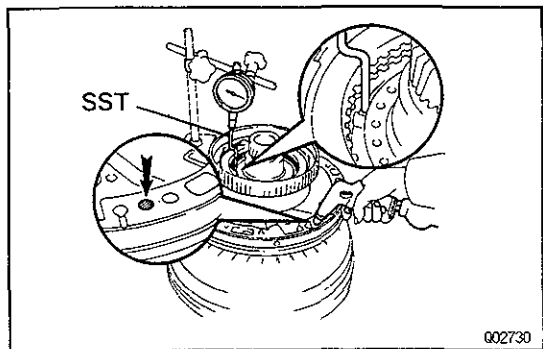


- (c) Using a screwdriver, install the snap ring.
HINT: Be sure the end gap of the snap ring is not aligned with the cutout portion of the clutch drum.



7. CHECK PISTON STROKE OF OVERDRIVE DIRECT CLUTCH

- (a) Place the oil pump onto the torque converter, and then place the O/D direct clutch assembly onto the oil pump.

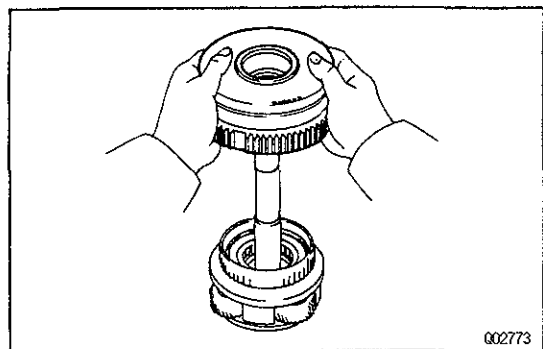


- (b) Using SST and a dial indicator, measure the piston stroke by applying and releasing the compressed air 392–785 kPa (4–8 kgf/cm², 57–114 psi) as shown. SST 09350–36010(09350–06110)

Piston stroke:

1.80–2.00 mm (0.0709–0.0787 in.)

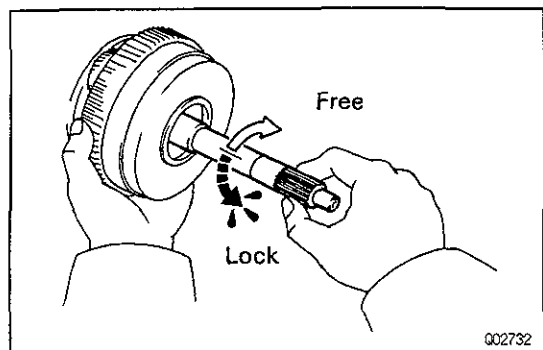
If the piston stroke is less than specified, parts may have been assembled incorrectly, check and reassembled again.



8. INSTALL OVERDRIVE DIRECT CLUTCH ASSEMBLY

Install the direct clutch assembly onto the O/D planetary gear.

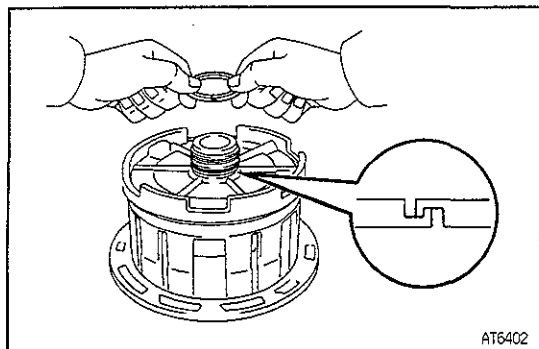
HINT: Mesh the spline of the O/D planetary gear with the flukes of the discs by rotating and pushing the O/D direct clutch counterclockwise.



9. CHECK OPERATION OF ONE-WAY CLUTCH

Hold the O/D direct clutch drum and turn the input shaft.

The input shaft should turn freely clockwise and should lock counterclockwise.



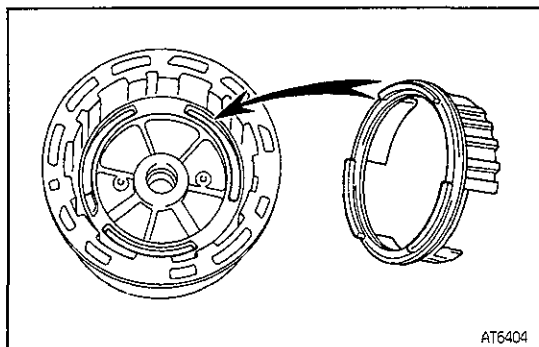
10. INSTALL OIL SEAL RINGS

- (a) Coat the two oil seal rings with ATF.
- (b) Contract the oil seals, and install them onto the O/D case.

NOTICE: Do not spread the ring ends more than necessary.

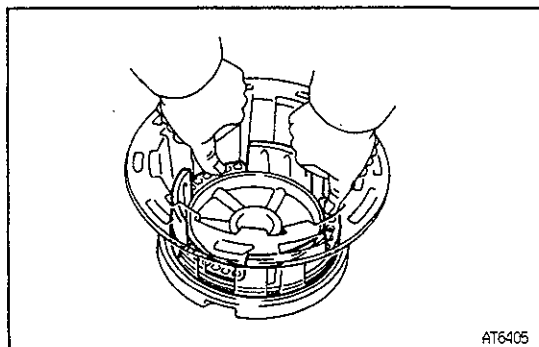
HINT: After installing the oil seal rings, check that they rotate smoothly.

AT



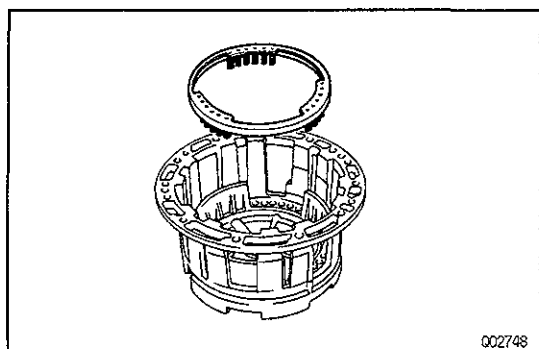
11. INSTALL OVERDRIVE BRAKE PISTON

- (a) Coat new two O—rings with ATF, and install them on the brake piston.
- (b) Align the protrusions of the brake piston with the grooves of the O/D case.



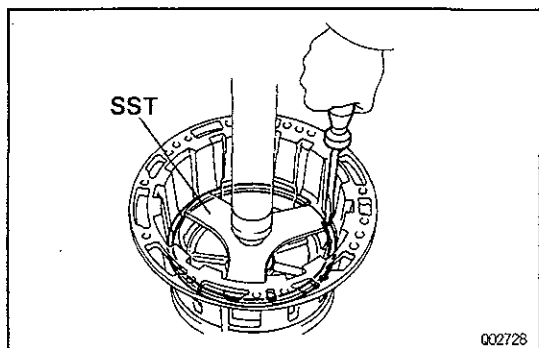
- (c) Push in the brake piston into the O/D case with both hands.

NOTICE: Be careful not to damage the O—rings.



12. INSTALL PISTON RETURN SPRING

- (a) Place the return spring on the brake piston.

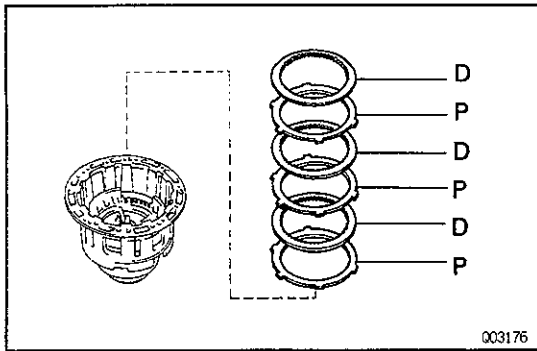


- (b) Place SST on the spring on the spring seat, and compress the return spring with a shop press. SST 09350—36010(09350—06020)

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

HINT: Be sure the end gap of the snap ring is not aligned with the cutout portion of the O/D case.

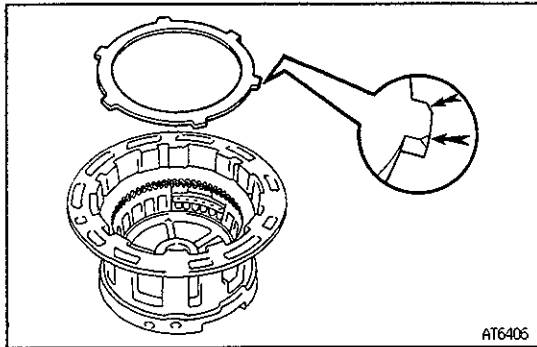
AT

**13. INSTALL PLATES, DISCS AND FLANGE**

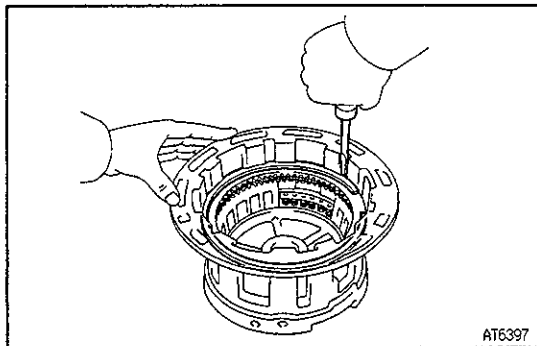
- (a) Install the three plates and three discs in order:

P = Plate D = Disc

P-D-P-D-P-D

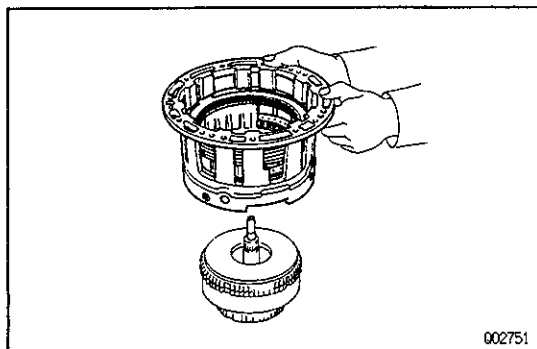


- (b) Install the flange, facing the rounded edge upward.

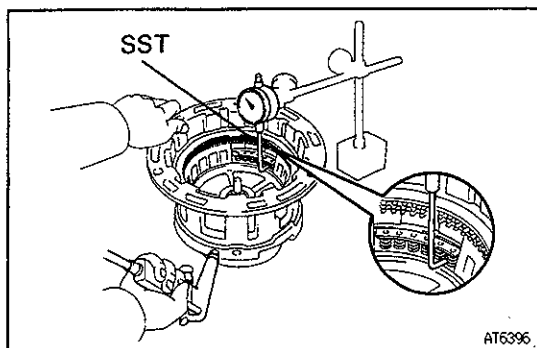


- (c) Using a screwdriver, install the snap ring.

HINT: Be sure the end gap of the snap ring is not aligned with the cutout portion of the O/D case.

**14. CHECK PISTON STROKE OF OVERDRIVE BRAKE**

- (a) Place the O/D case assembly onto the rear clutch assembly.

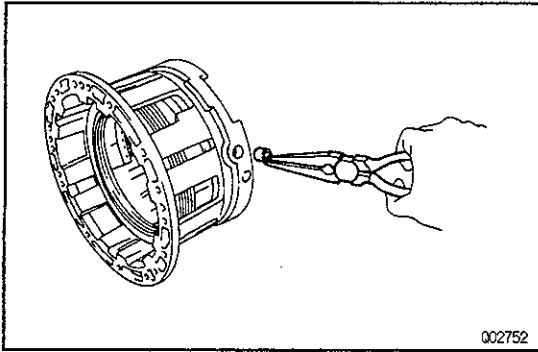


- (b) Using SST and a dial indicator, measure the piston stroke by applying and releasing the compressed air 392–785 kPa (4–8 kgf/cm², 57–114 psi) as shown. SST 09350–36010(09350–06120)

Piston stroke:

1.25–1.85 mm (0.0492–0.0728 in.)

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

**15. INSTALL RING RETAINERS**

Using needle nose pliers, install the three ring retainers into the oil holes of the O/D case.