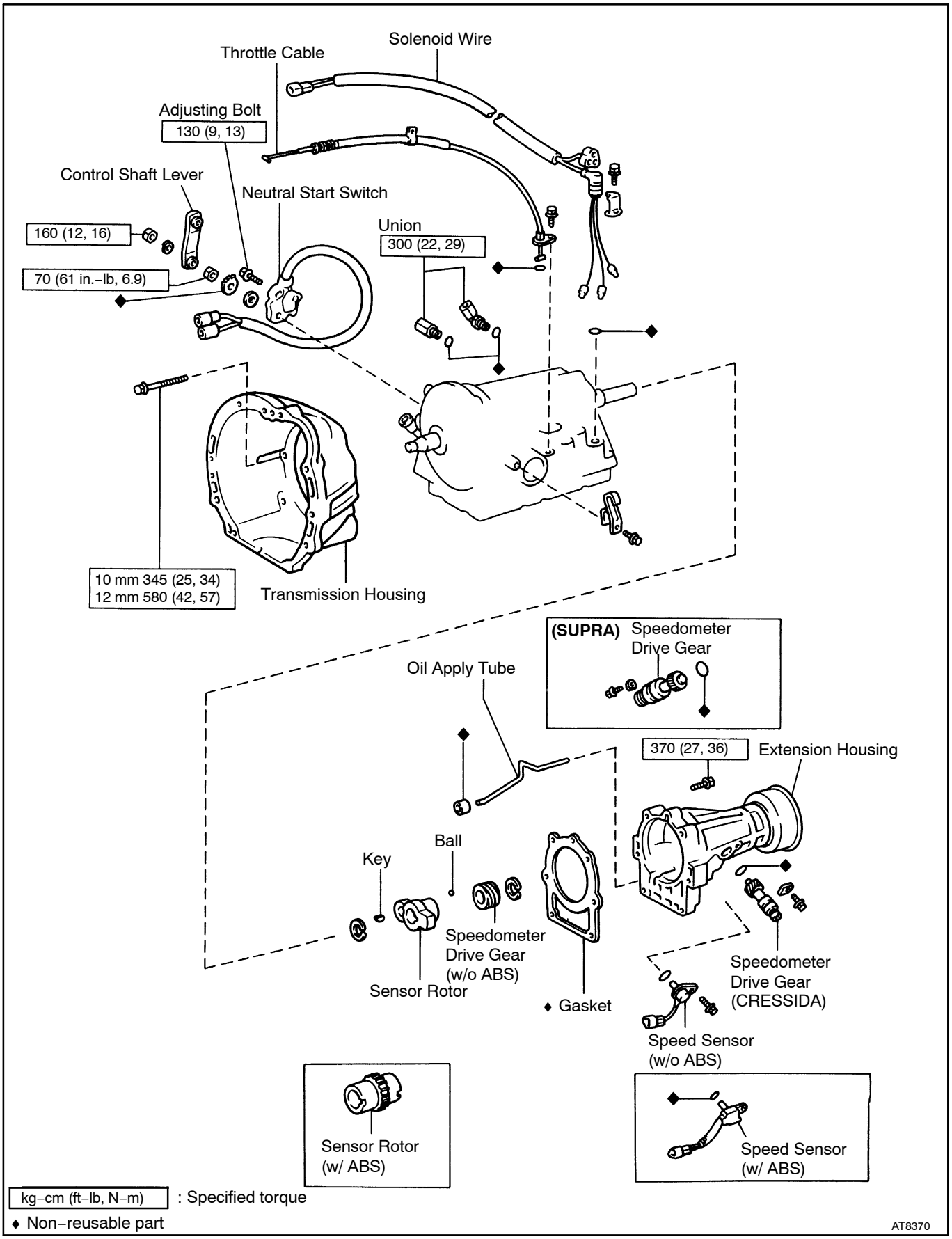
REMOVAL OF COMPONENT PARTS (A340E)

COMPONENTS (SUPRA and CRESSIDA)

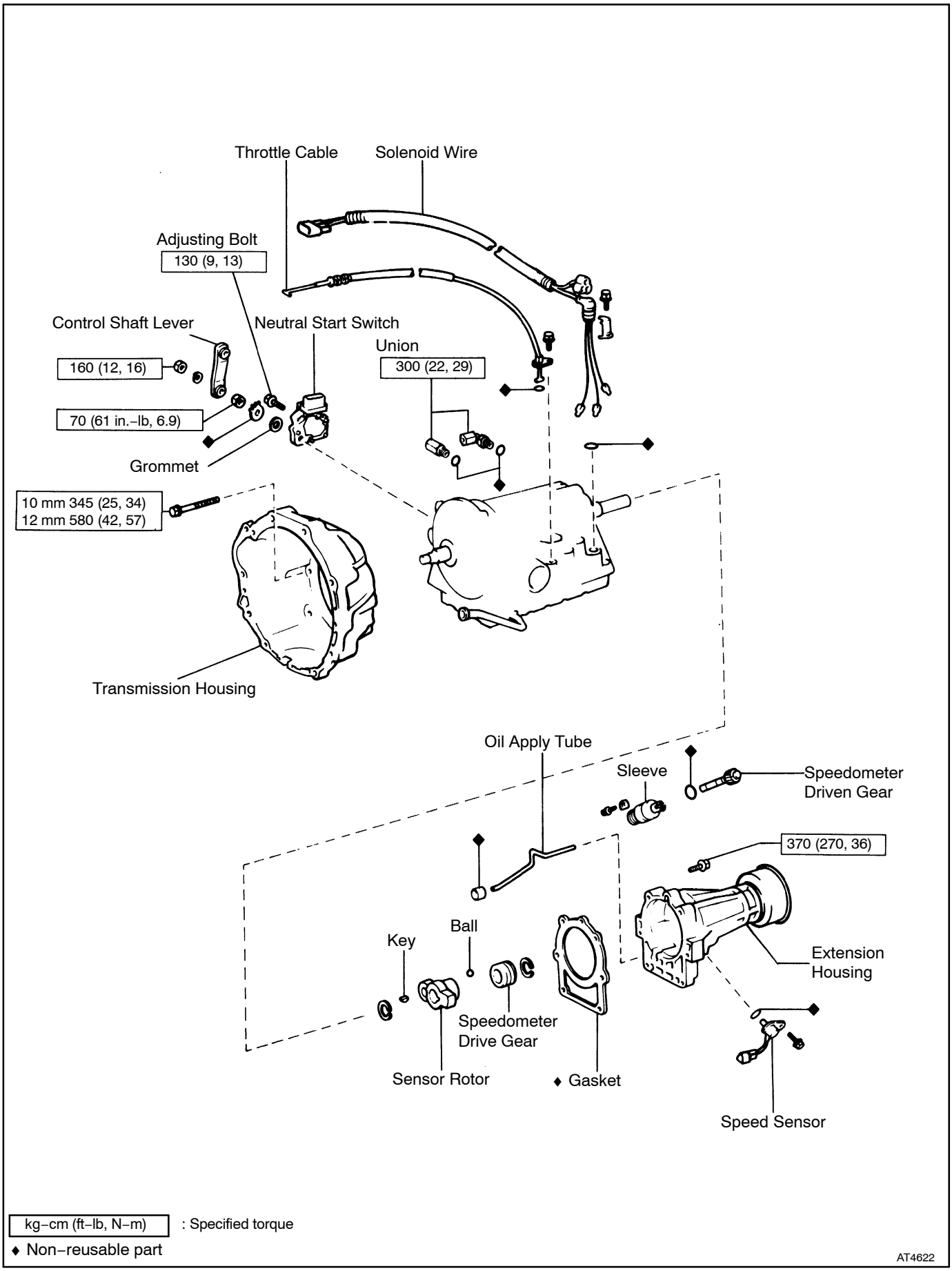


kg–cm (ft–lb, N–m) : Specified torque

♦ Non–reusable part

AT8370

COMPONENTS (TRUCK and 4 RUNNER)

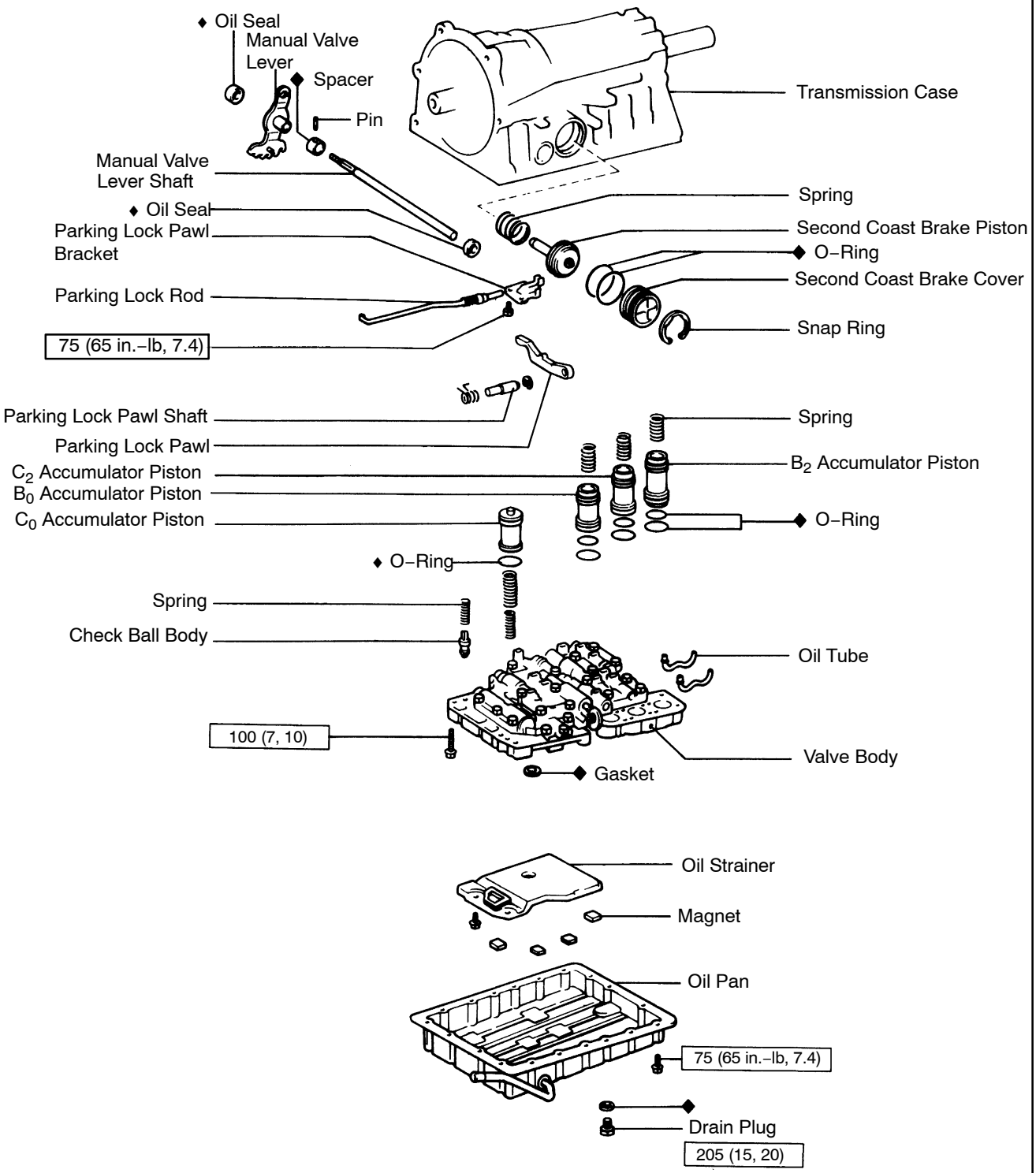


kg–cm (ft–lb, N–m) : Specified torque

♦ Non–reusable part

AT4622

COMPONENTS (Cont'd)

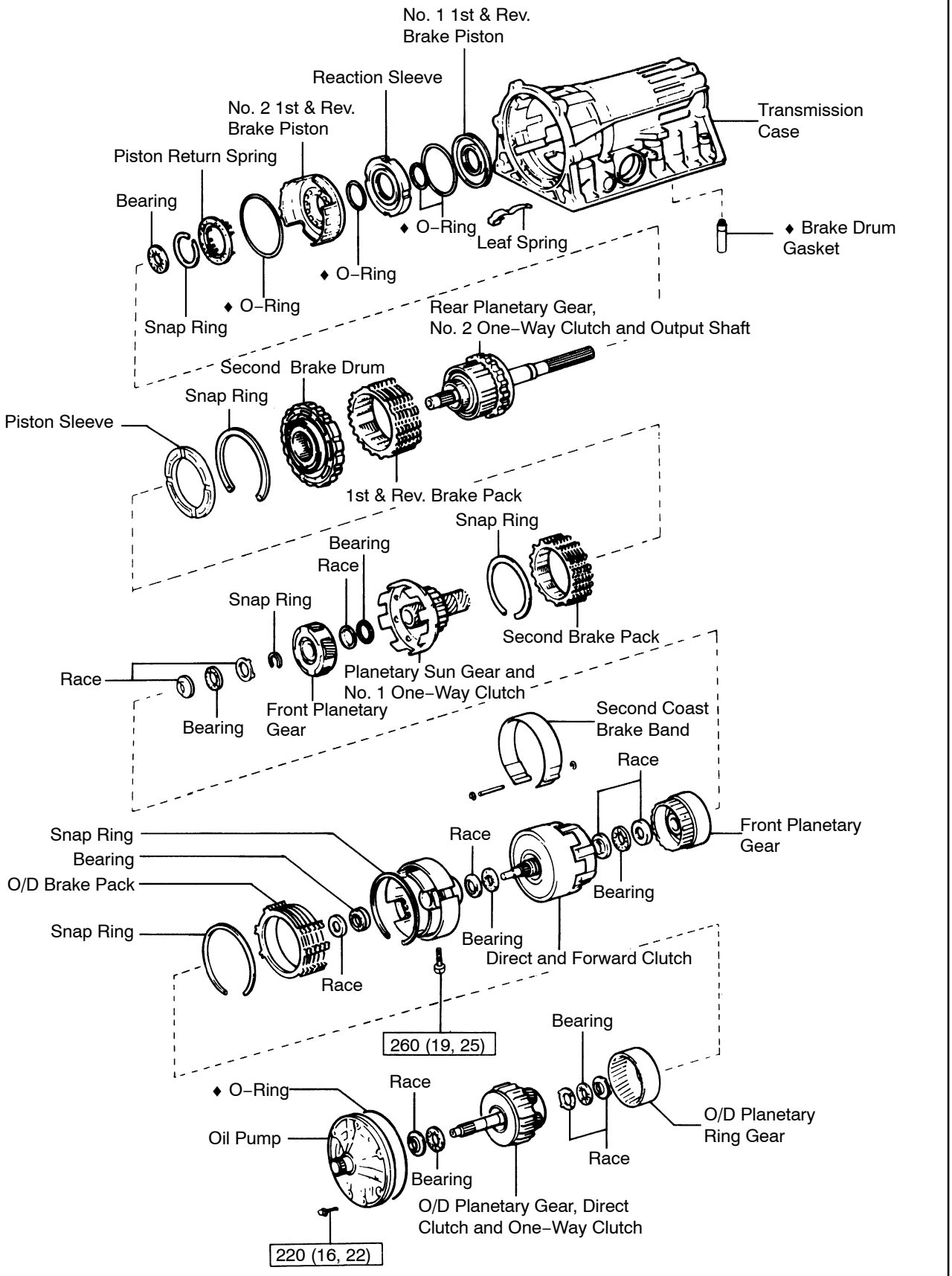


kg–cm (ft–lb, N–m) : Specified torque

♦ Non–reusable part

AT5884

COMPONENTS (Cont'd)



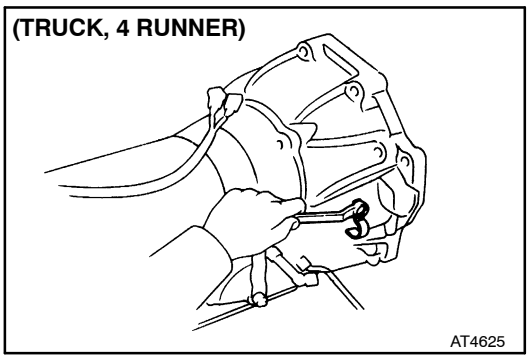
kg–cm (ft–lb, N–m) : Specified torque

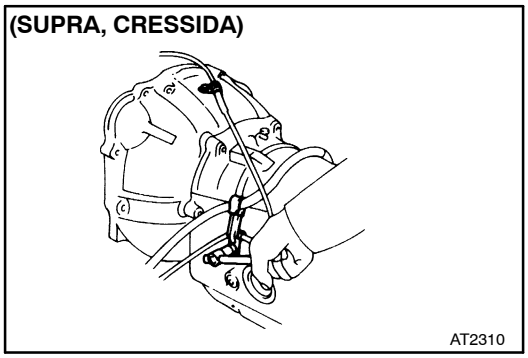
♦ Non–reusable part

AT5654

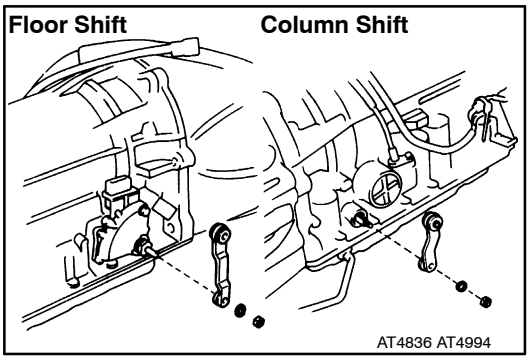
SEPARATE BASIC SUBASSEMBLY

1. REMOVE WIRE HARNESS CLAMP AND THROTTLE CABLE CLAMP





2. REMOVE TRANSMISSION CONTROL SHAFT LEVER

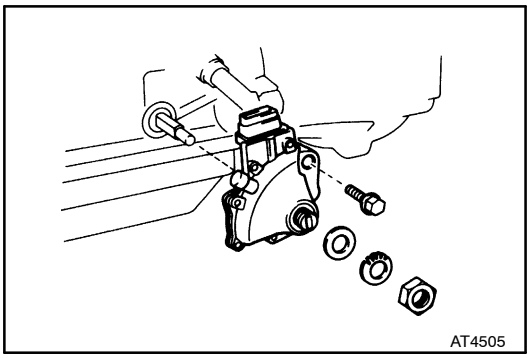


3. REMOVE NEUTRAL START SWITCH

(a) Unstake the lock washer.

(b) Remove the nut and bolt, and then remove the neutral start switch.

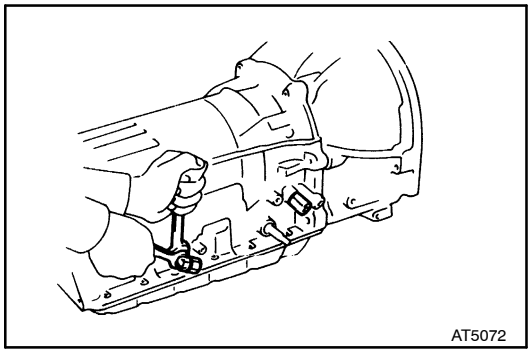
(c) Remove the lock washer and grommet.

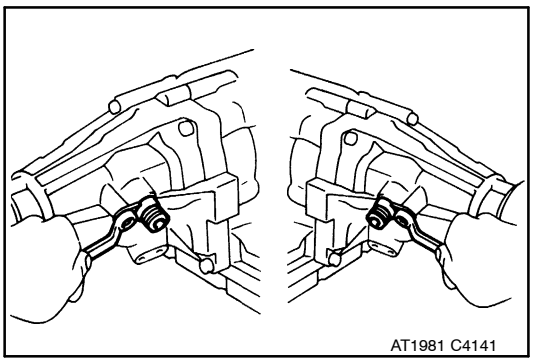


4. REMOVE UNIONS

(a) Remove the two unions.

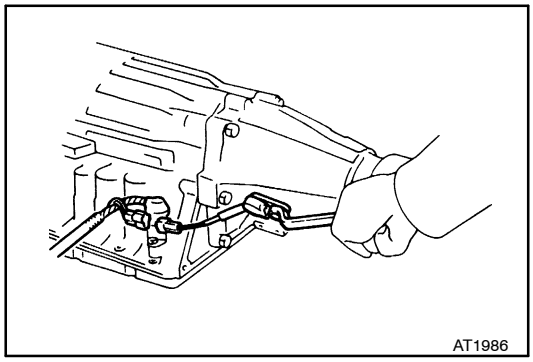
(b) Remove the O–rings from both unions.





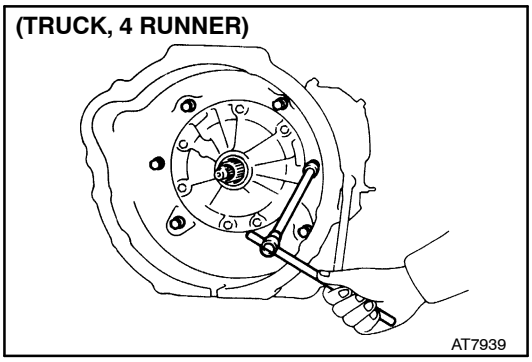
5. REMOVE SPEEDOMETER DRIVEN GEAR

(a) Remove the bolt and lock plate.
(b) Pull out the sleeve.
(c) Pull out the driven gear from the sleeve.
(d) Remove the O–ring from the sleeve.



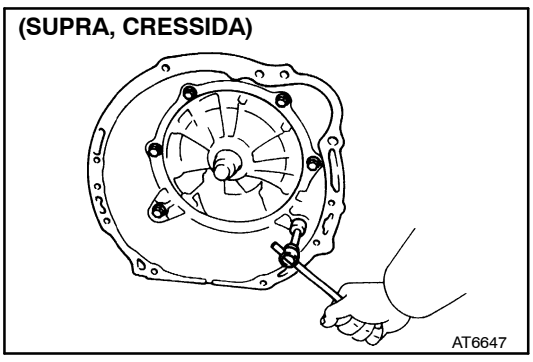
6. REMOVE SPEED SENSOR

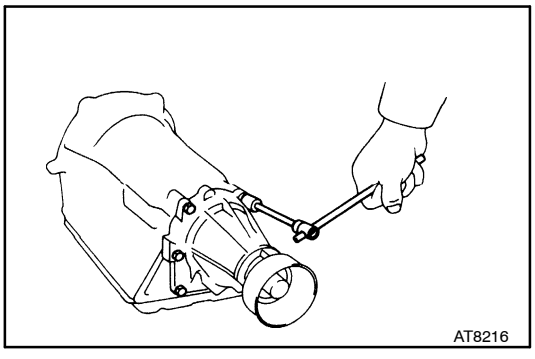
(a) Disconnect the connector.
(b) Remove the speed sensor.
(c) Remove the O–ring from it.



7. REMOVE TRANSMISSION HOUSING

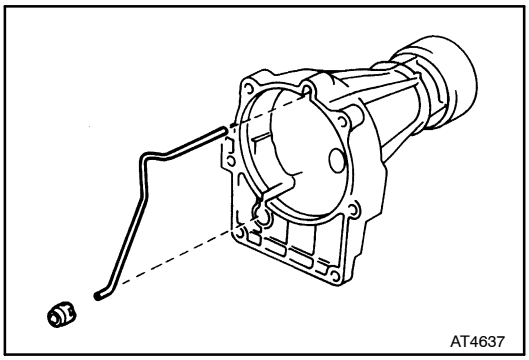
(a) Remove the six bolts.
(b) Remove the transmission housing.



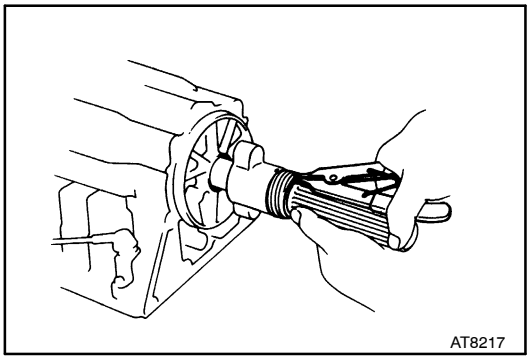


8. REMOVE EXTENSION HOUSING

(a) Remove the six bolts.
(b) Remove the extension housing.



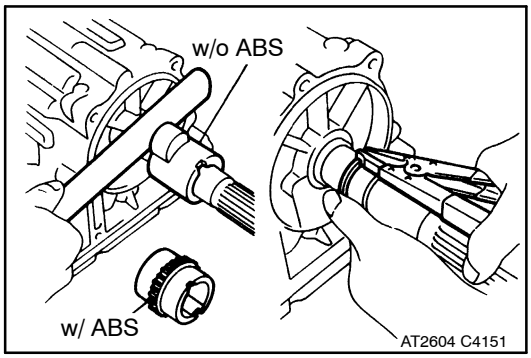
(c) Remove the oil apply tube and gasket from the extension housing.



9. REMOVE SPEEDOMETER DRIVE GEAR AND BALL

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

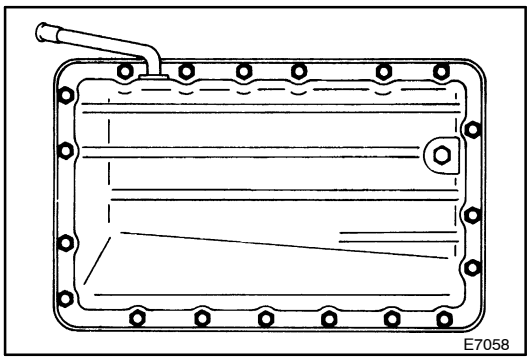
(b) Remove the speedometer drive gear and ball.



10. REMOVE SENSOR ROTOR AND KEY

(a) Remove the sensor rotor and key.

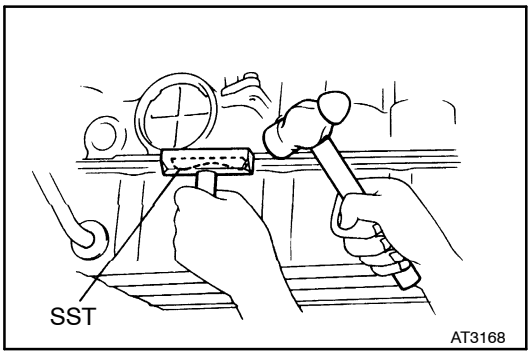
(b) Using snap ring pliers, remove the snap ring.



11. REMOVE OIL PAN

NOTICE: Do not turn the transmission over as this will contaminate the valve body with any foreign matter at the bottom of the pan.

(a) Remove the nineteen bolts.

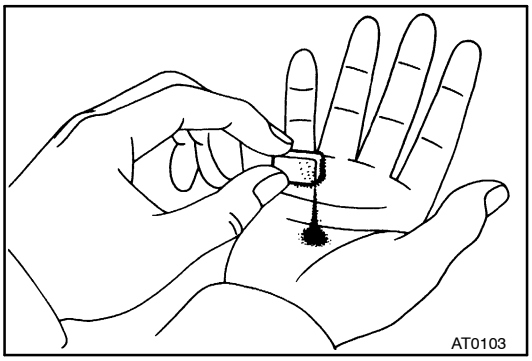


(b) Install the blade of SST between the transmission case and oil pan, cut off applied sealer.

SST 09032–00100

NOTICE: Be careful not to damage the oil pan flange.

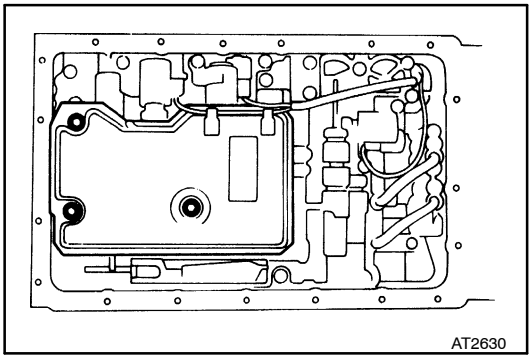
(c) Remove the pan by lifting the transmission case.



12. EXAMINE PARTICLES IN PAN

Remove the magnets and use them to collect steel particles. Carefully lock at the foreign matter and particles in the pan and on the magnets to anticipate the type of wear you will find in the transmission.

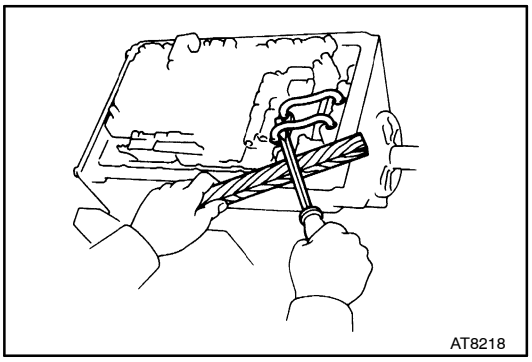
Steel (magnetic) . . . . . bearing, gear and clutch plate wear
Brass (non–magnetic) . . bushing wear



13. REMOVE OIL STRAINER AND GASKETS

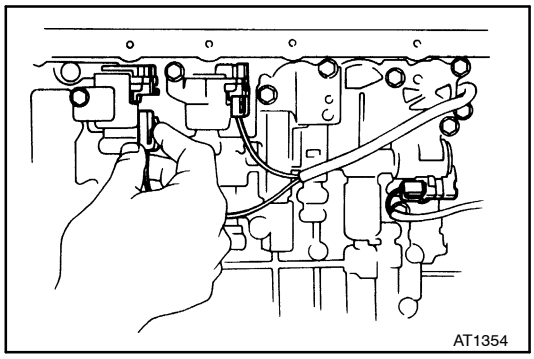
(a) Remove the three bolts holding the oil strainer to the valve body.

(b) Remove the oil strainer and two gaskets.



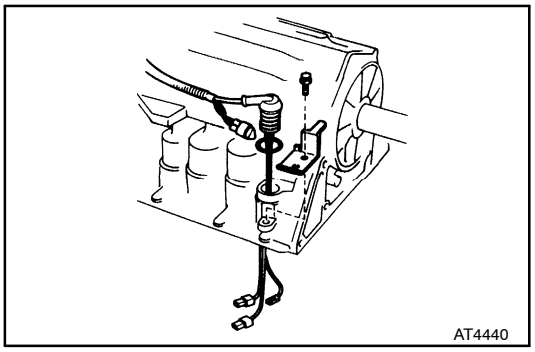
14. REMOVE OIL TUBES

Pry up both tube ends with a large screwdriver and remove the two tubes.



15. REMOVE SOLENOID WIRING

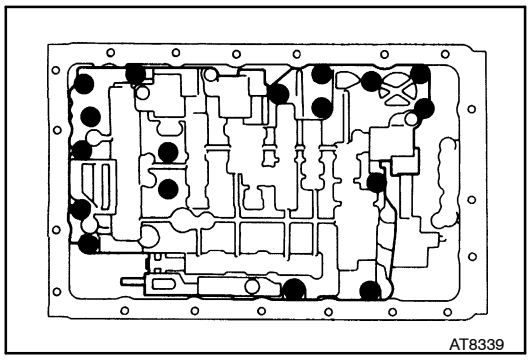
(a) Disconnect the three connectors from No. 1, No. 2 and lock–up solenoid.



(b) Remove the stopper plate from the case.

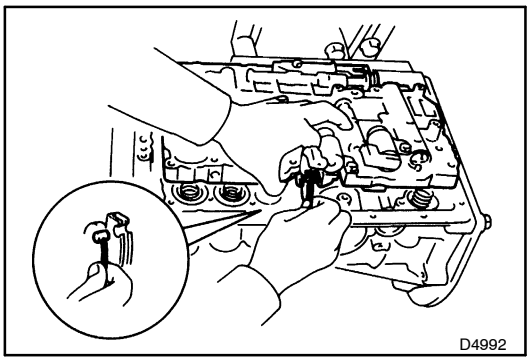
(c) Pull out the solenoid wiring from the transmission case.

(d) Remove the O–ring from the grommet.

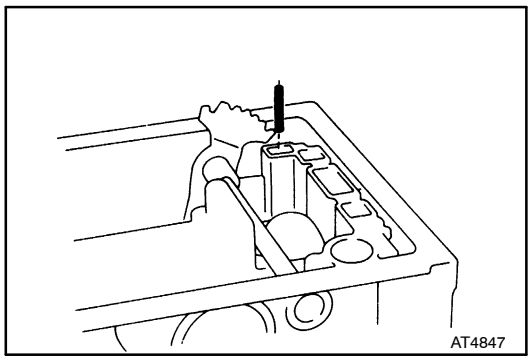


16. REMOVE VALVE BODY

(a) Remove the seventeen bolts.

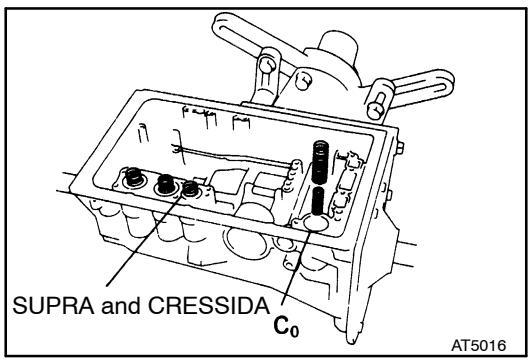


(b) Disconnect the throttle cable from the cam and remove the valve body.

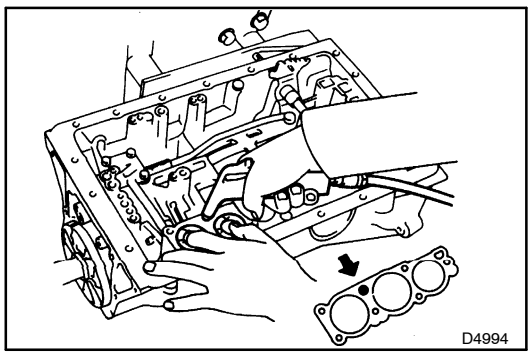


17. REMOVE CHECK BALL BODY, ACCUMULATOR SPRINGS AND PISTONS

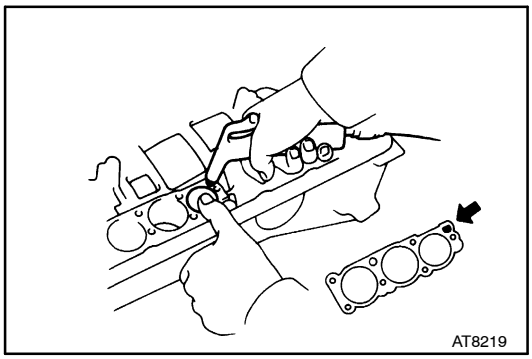
(a) Remove the check ball body and spring.



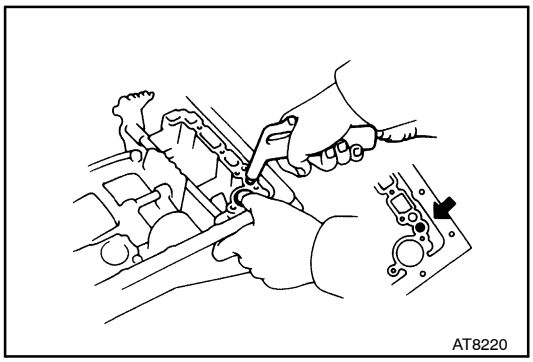
(b) Remove the two springs from the C_0 accumulator piston.



(c) Applying compressed air to the oil hole, remove B_2 and C_2 accumulator pistons and two or three springs.

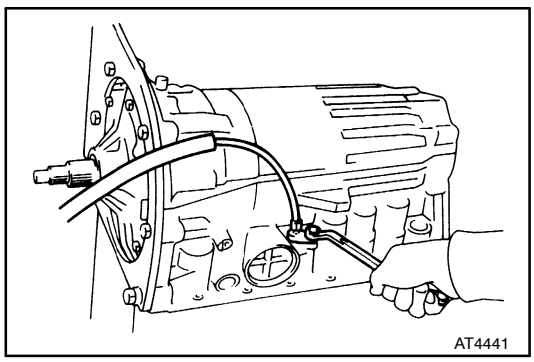


(d) Applying compressed air to the oil hole, remove the B_0 accumulator piston and spring.



(e) Applying compressed air to the oil hole, remove the C_0 accumulator piston.

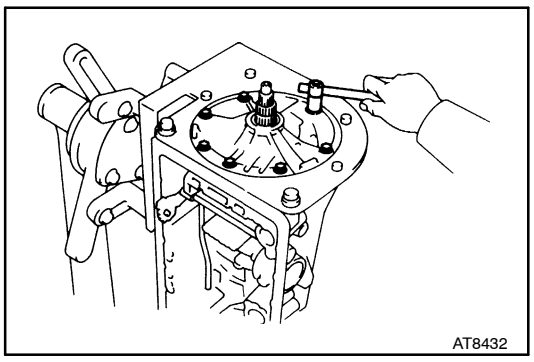
(f) Remove the O–ring from each piston.



18. REMOVE THROTTLE CABLE

(a) Remove the retaining bolt and pull out the throttle cable.

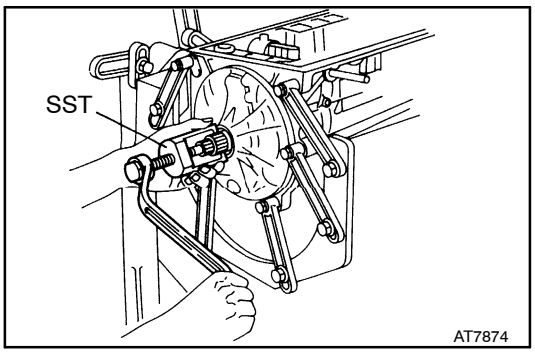
(b) Remove the O–ring from the cable.



19. REMOVE OIL PUMP

(a) Stand up the transmission.

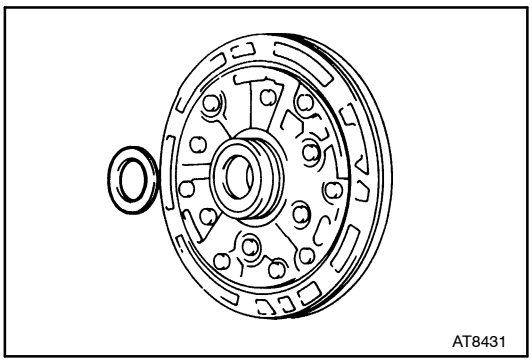
(b) Remove the seven bolts holding the oil pump to the transmission case.



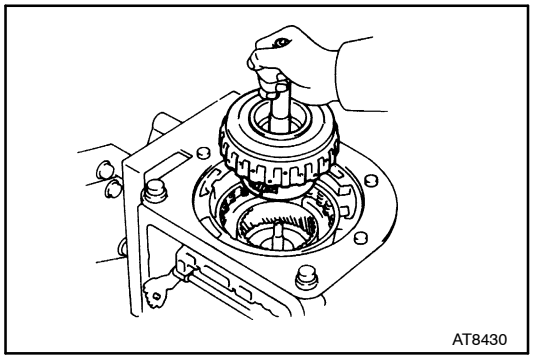
(c) Using SST, remove the oil pump.

SST 09610–20012

(d) Remove the O–ring from it.

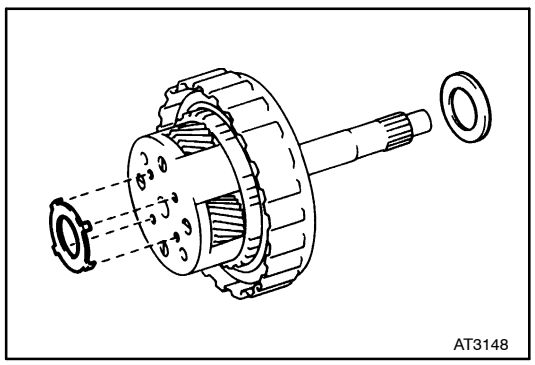


(e) Remove the race from the oil pump.

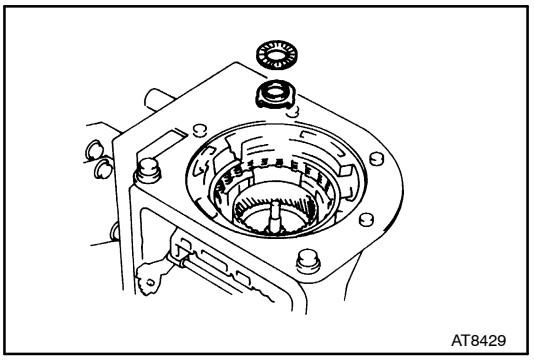


20. REMOVE OVERDRIVE PLANETARY GEAR UNIT WITH OVERDRIVE DIRECT CLUTCH AND ONE–WAY CLUTCH

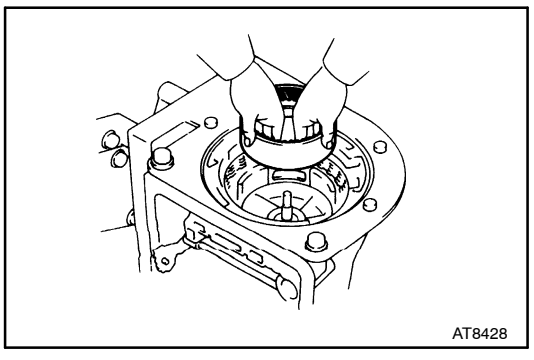
(a) Remove the overdrive planetary gear with the overdrive direct clutch and one–way clutch from the transmission case.



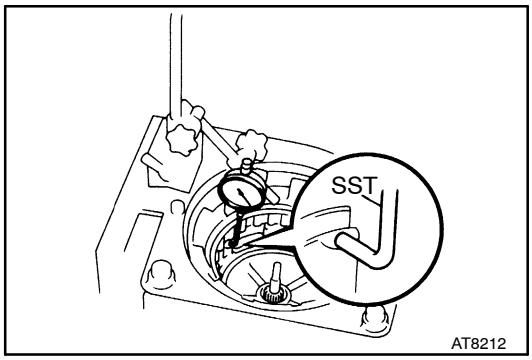
(b) Remove the race and assembled bearing and race.



(c) Remove the bearing and race.



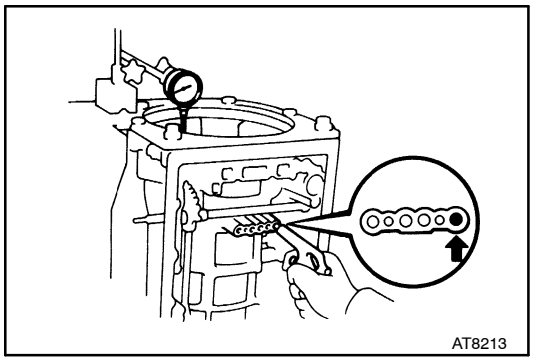
(d) Remove the overdrive planetary ring gear from the transmission case.



21. CHECK PISTON STROKE OF OVERDRIVE BRAKE

(a) Place SST and a dial indicator onto the overdrive brake piston as shown in the figure.

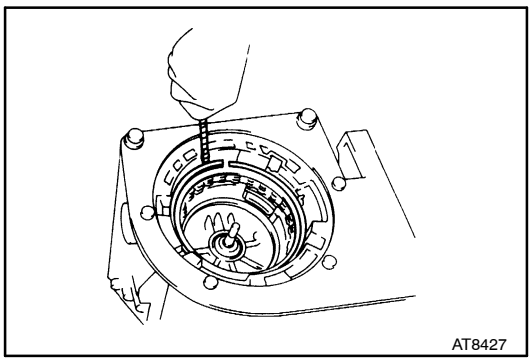
SST 09350–30020 (09350–06120)



(b) Measure the stroke applying and releasing the compressed air (4 – 8 kg/cm^2, 57 – 114 psi or 392 – 785 kPa) as shown in the figure.

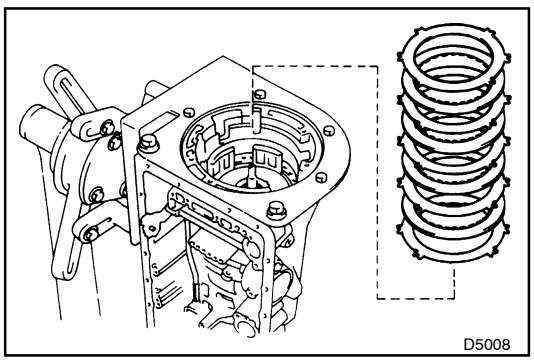
Piston stroke:
(7M–GTE)
1.75 – 2.05 mm (0.0689 – 0.0807 in.)
(Others)
1.40 – 1.70 mm (0.0551 – 0.0669 in.)

If the values are nonstandard, inspect the discs.
(See page AT–61)



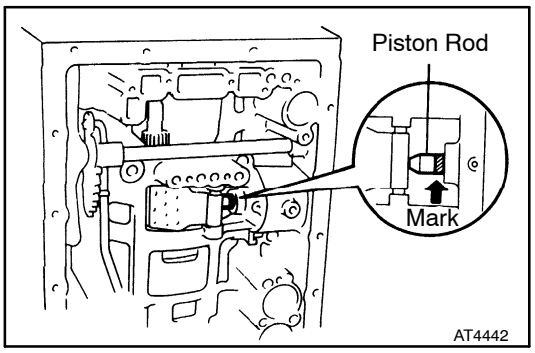
22. REMOVE FLANGES, PLATES AND DISCS OF OVERDRIVE BRAKE

(a) Remove the snap ring.



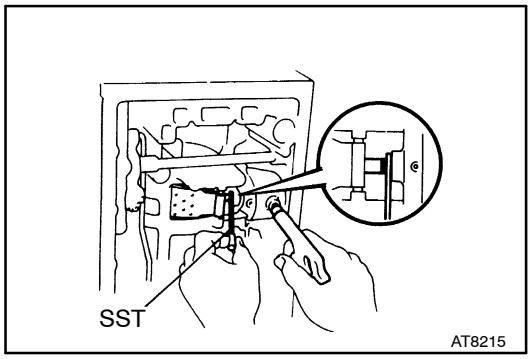
(b) Remove the flanges, plates and discs as a set.

(7M–GTE)
Two flanges, four plates and five discs
(Others)
Two flanges, three plates and four discs
The method of inspection, refer to AT–61.



23. CHECK PISTON ROD STROKE OF SECOND COAST BRAKE

(a) Place a mark on the second coast brake piston rod as shown in the figure.

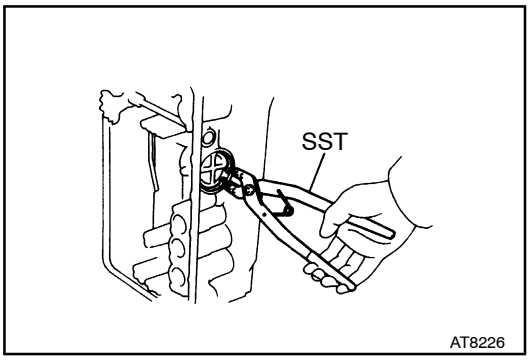


(b) Using SST, measure the stroke applying the compressed air (4 – 8 kg /cm^2, 57 – 114 psi or 392 – 785 kPa) as shown in the figure.

SST 09240–00020

Piston rod stroke: 1.5 – 3.0 mm (0.059 – 0.118 in.)

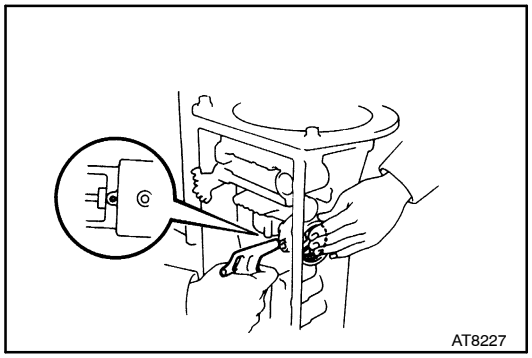
If the values are nonstandard, inspect the brake band. (See page AT–76)



24. REMOVE SECOND COAST BRAKE COVER, PISTON ASSEMBLY AND SPRING

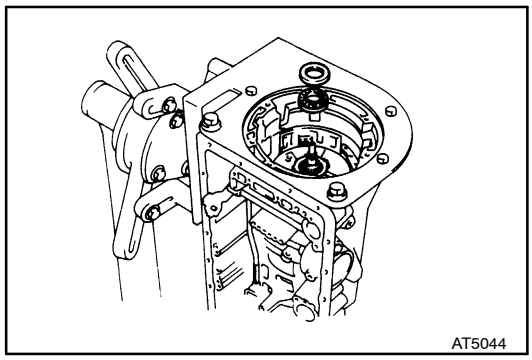
(a) Using SST, remove the snap ring.

SST 09350–30020 (09350–07060)



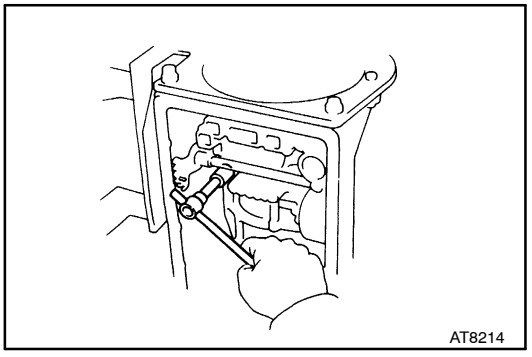
(b) Applying compressed air to the oil hole, remove the second coast brake cover, piston assembly and spring.

(c) Remove the two O–rings from the cover.

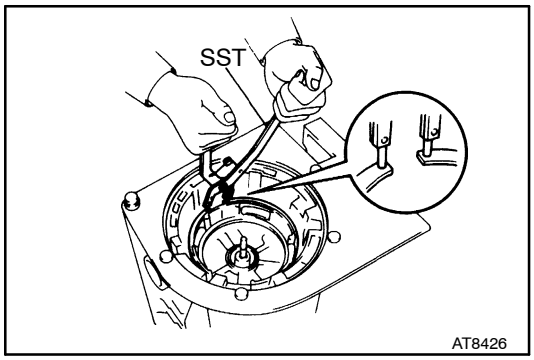


25. REMOVE OVERDRIVE SUPPORT ASSEMBLY

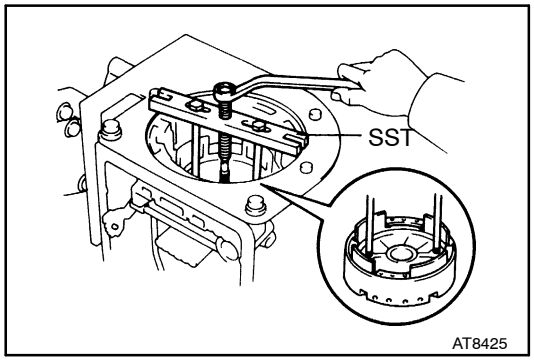
(a) Remove the bearing and race.



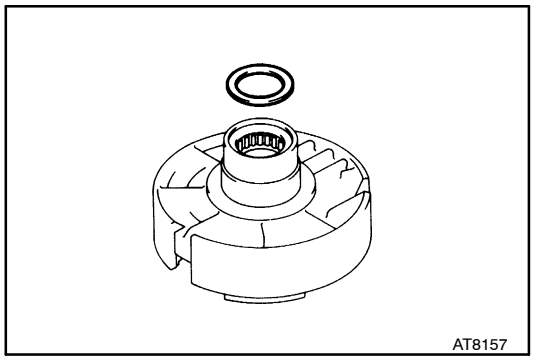
(b) Remove the two bolts holding the overdrive support assembly to the case.



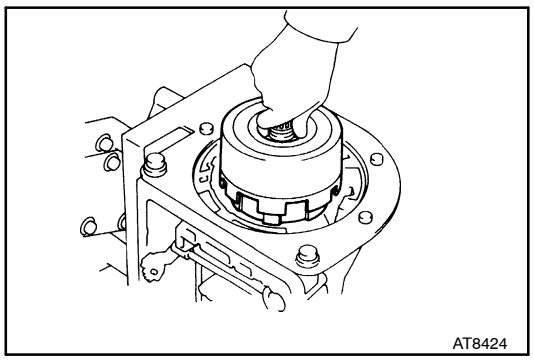
(c) Using SST, remove the snap ring.
SST 09350–30020 (09350–07060)



(d) Using SST, remove the overdrive support assembly.
SST 09350–30020 (09350–07020)

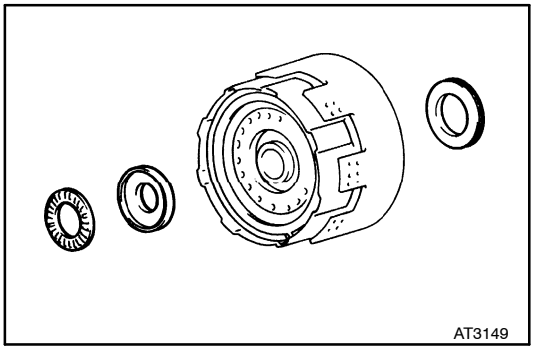


(e) Remove the race.

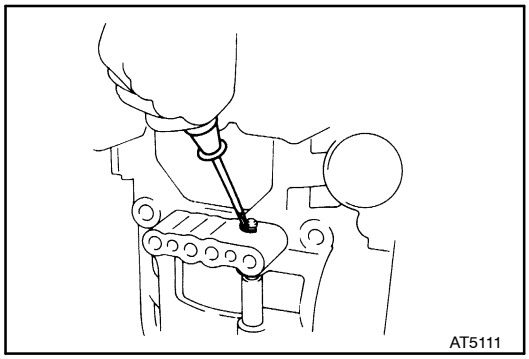


26. REMOVE DIRECT CLUTCH WITH FORWARD CLUTCH

(a) Remove the direct clutch with forward clutch from the case.



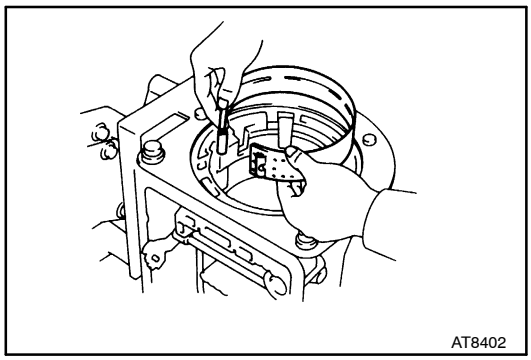
(b) Remove the two bearings and race.


AT5111

27. REMOVE SECOND COAST BRAKE BAND

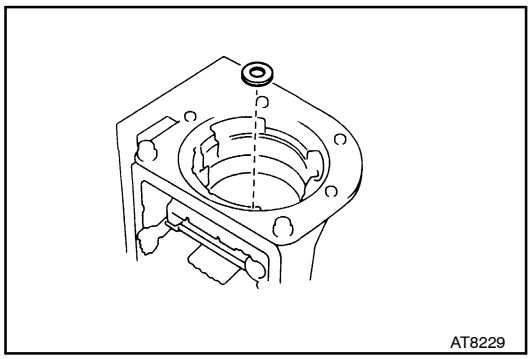
(a) Remove the E–ring from the pin.

(b) Remove the pin from the brake band.


AT8402

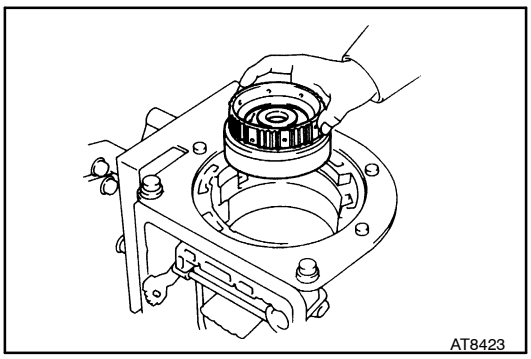
(c) Remove the second coast brake band from the case.

For the method of inspection, refer to AT–76.

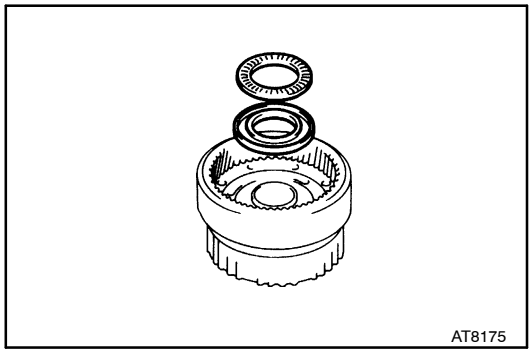

AT8229

28. REMOVE FRONT PLANETARY GEAR UNIT

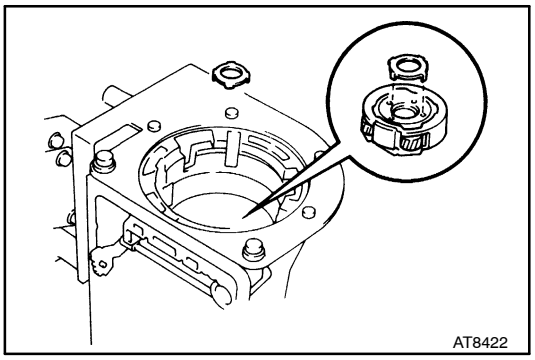
(a) Remove the race.


AT8423

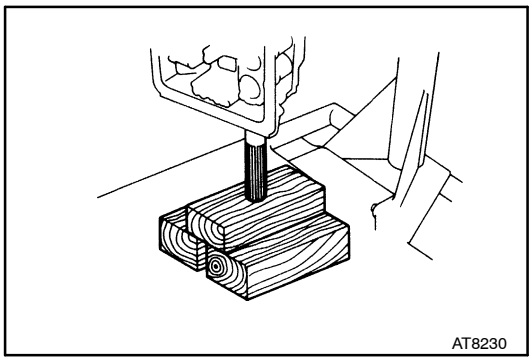
(b) Remove the front planetary ring gear from the case.


AT8175

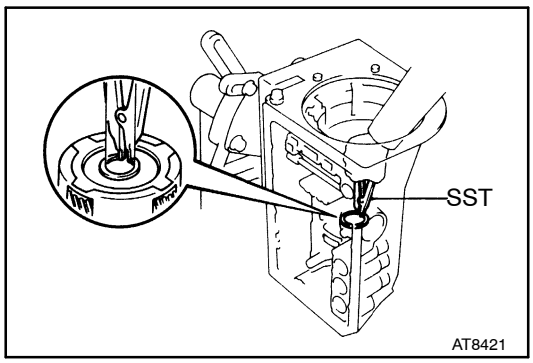
(c) Remove the bearing and race.



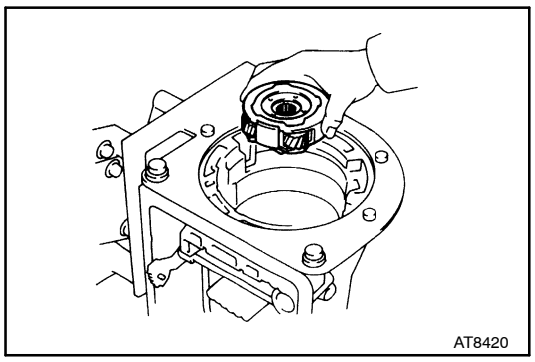
(d) Remove the race.



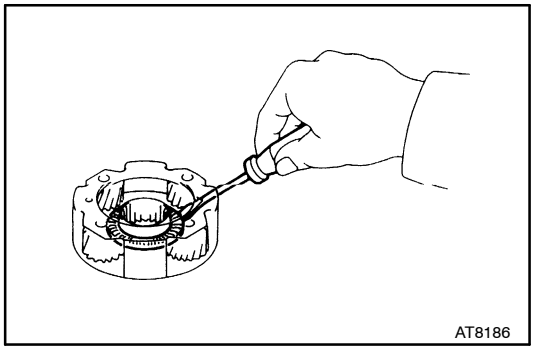
(e) With wooden blocks under the output shaft, stand the transmission on the output shaft.



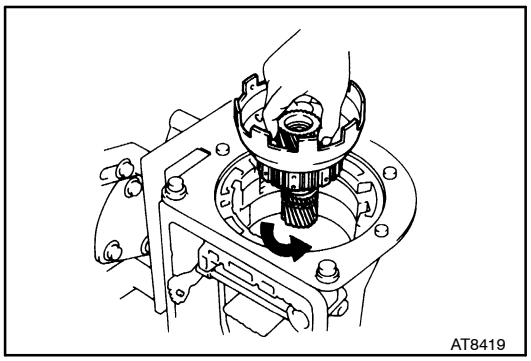
(f) Using SST, remove the snap ring.
SST 09350–30020 (09350–07070)



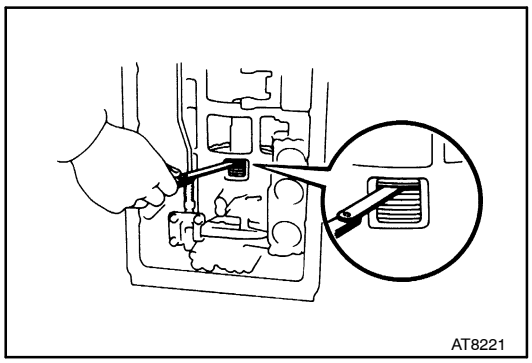
(g) Remove the front planetary gear from the case.



(h) Remove the bearing and race from the front planetary gear.

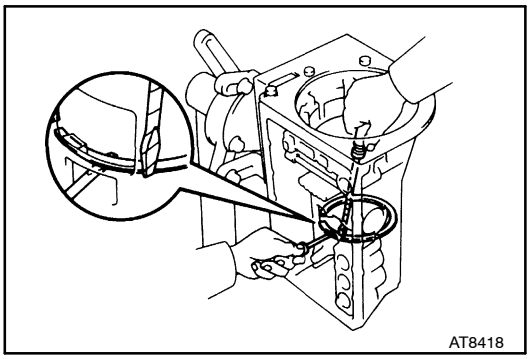


29. REMOVE PLANETARY SUN GEAR WITH NO. 1 ONE–WAY CLUTCH



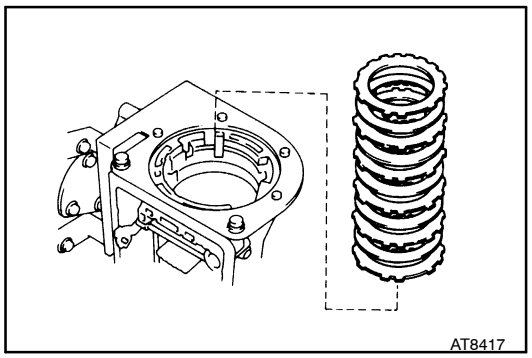
30. CHECK PACK CLEARANCE OF SECOND BRAKE

Using a thickness gauge, measure the clearance between the snap ring and flange as shown in the figure.
Clearance: 0.62 – 1.98 mm (0.0244 – 0.0780 in.)
If the values are nonstandard, inspect the discs.
(See page AT–84)

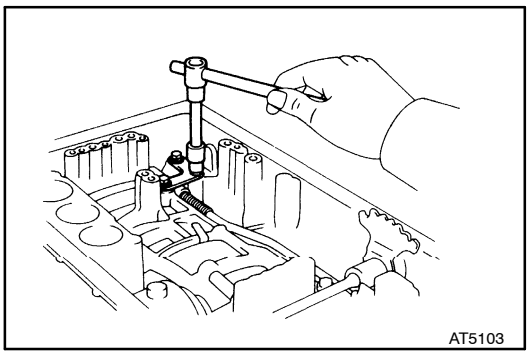


31. REMOVE FLANGE, PLATES AND DISCS OF SECOND BRAKE

(a) Remove the snap ring.

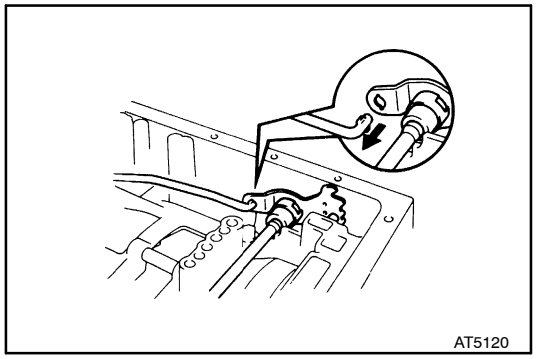


(b) Remove the flange, five plates and five discs.

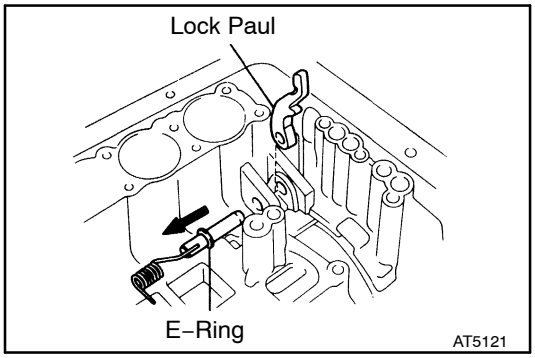


32. REMOVE PARKING LOCK ROD AND PAWL

(a) Remove the parking lock pawl bracket.

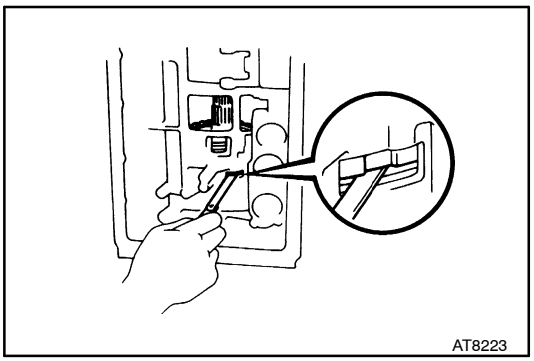


(b) Disconnect the parking lock rod from the manual valve lever.



(c) Remove the spring, parking lock pawl and shaft.

(d) Remove the E–ring from the shaft.



33. CHECK PACK CLEARANCE OF FIRST AND REVERSE BRAKE

Using a thickness gauge, measure the clearance between the plate and second brake drum as shown in the figure.

Clearance:

(7M–GTE)

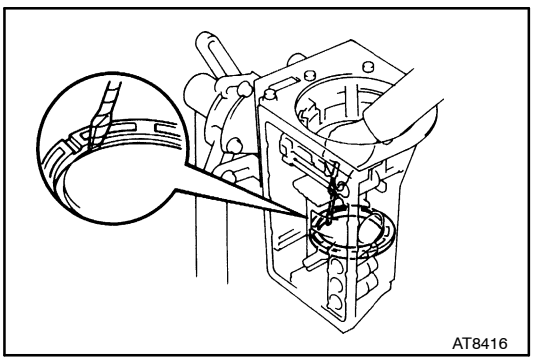
0.70 – 1.22 mm (0.0276 – 0.0480 in.)

(Others)

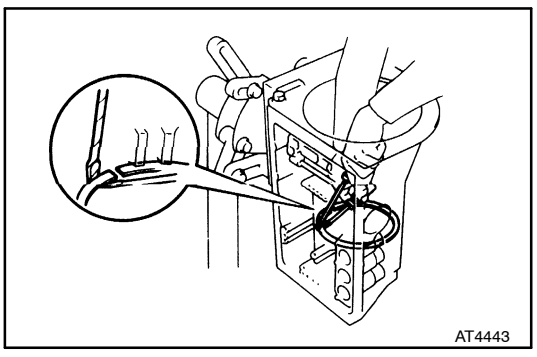
0.60 – 1.12 mm (0.0236 – 0.0441 in.)

If the values are nonstandard, inspect the discs.

(See page AT–86)

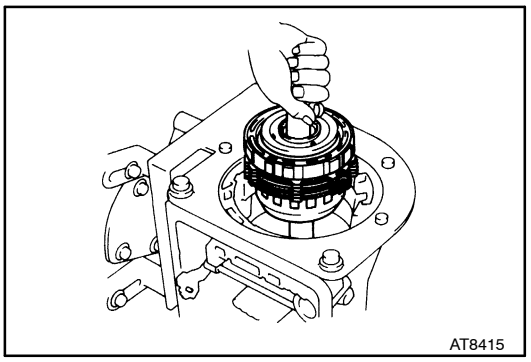


34. REMOVE SECOND BRAKE PISTON SLEEVE

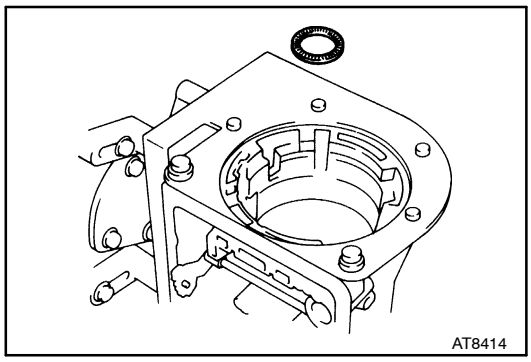


35. REMOVE REAR PLANETARY GEAR UNIT WITH SECOND BRAKE DRUM, FIRST AND REVERSE BRAKE PACK AND OUTPUT SHAFT

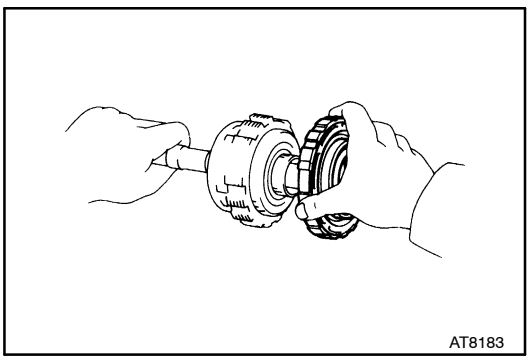
(a) Using two screwdrivers, remove the snap ring.


AT8415

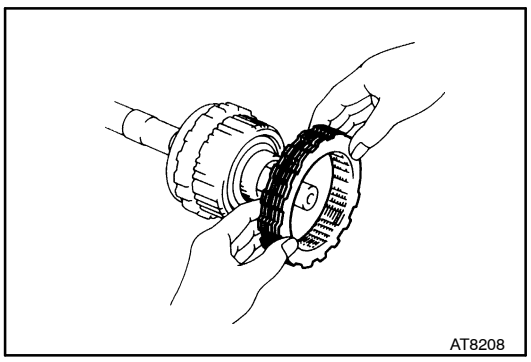
(b) Remove the rear planetary gear, second brake drum, first and reverse brake pack and output shaft as an assembly.


AT8414

(c) Remove the assembled thrust bearing and race from the case.

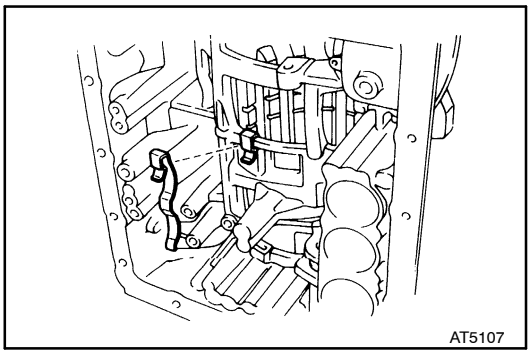

AT8183

(d) Remove the second brake drum assembly.

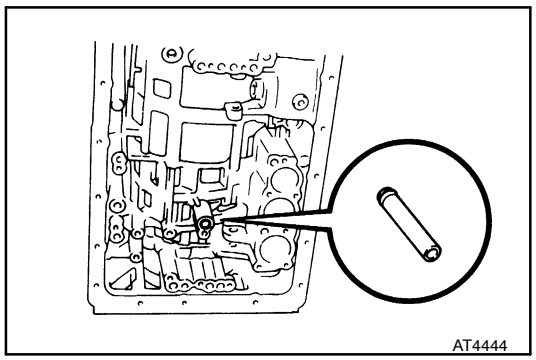

AT8208

(e) Remove the flange, plates and discs of the first and reverse brake.

(7M–GTE)
One flange, seven plates and seven discs
(Others)
One flange, six plates and six discs
For the method of inspection, refer to AT–86.

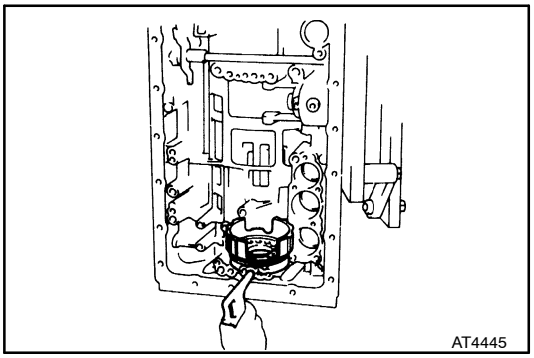

AT5107

36. REMOVE LEAF SPRING



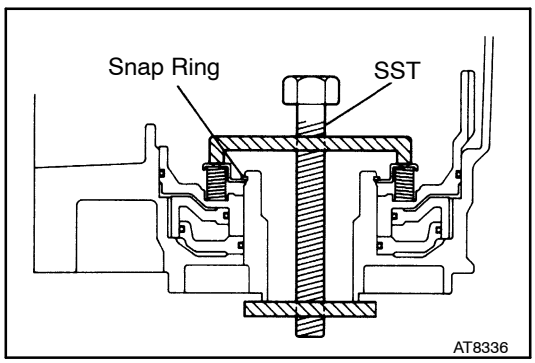
37. REMOVE BRAKE DRUM GASKET

Using a screwdriver, remove the gasket.



38. CHECK FIRST AND REVERSE BRAKE PISTONS MOVING

Make sure the first and reverse brake pistons move smoothly when applying and releasing the compressed air into the transmission case.



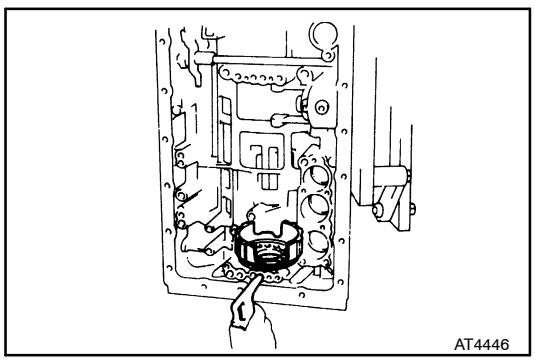
39. REMOVE COMPONENTS OF FIRST AND REVERSE BRAKE PISTON

(a) Set SST on the spring retainer, and compress the return spring.

SST 09350–30020 (09350–07050)

(b) Remove the snap ring with snap ring pliers.

(c) Remove the piston return spring.

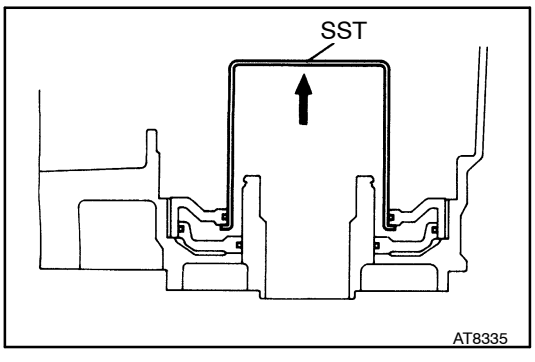


(d) Hold No. 2 first and reverse brake piston with hand, apply compressed air to transmission case to remove No. 2 first and reverse brake piston.

(e) Remove No. 2 first and reverse brake piston.

If the piston does not pop out with compressed air, lift the piston out with needle–nose pliers.

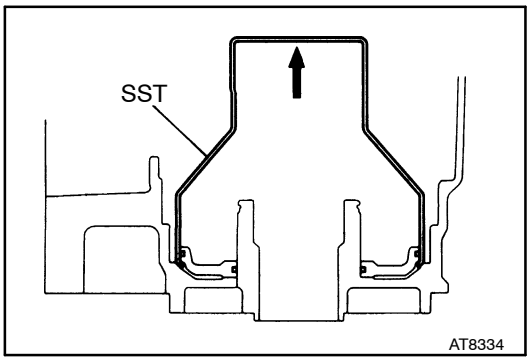
(f) Remove the O–ring from No. 2 piston.



(g) Insert SST behind the reaction sleeve and gradually lift it out of the transmission case.

SST 09350–30020 (09350–07080)

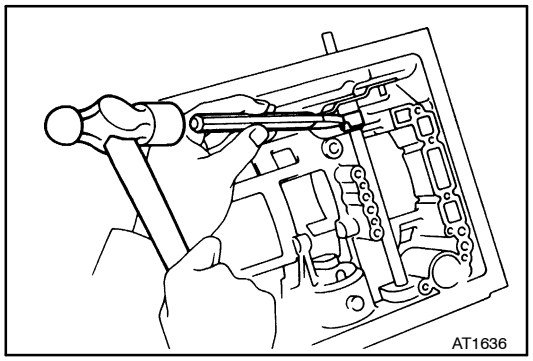
(h) Remove the O–ring from the reaction sleeve.



(i) Insert SST behind No. 1 brake piston and gradually lift it out of the transmission case.

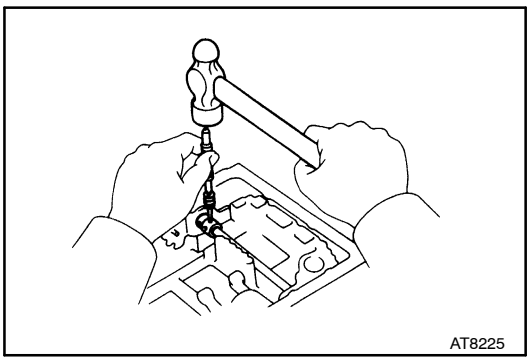
SST 09350–30020 (09350–07090)

(j) Remove the two O–rings from No. 1 piston.



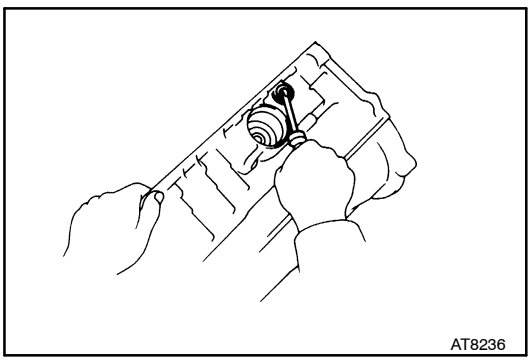
40. REMOVE MANUAL VALVE LEVER, SHAFT AND OIL SEALS

(a) Using a chisel, cut off the spacer and remove it from the shaft.



(b) Using a pin punch, drive out the pin.

(c) Pull the manual valve lever shaft out through the case and remove the lever.



(d) Using a screwdriver, remove the two oil seals.