MANUAL TRANSAXLE SYSTEM

41052–01

PROBLEM SYMPTOMS TABLE

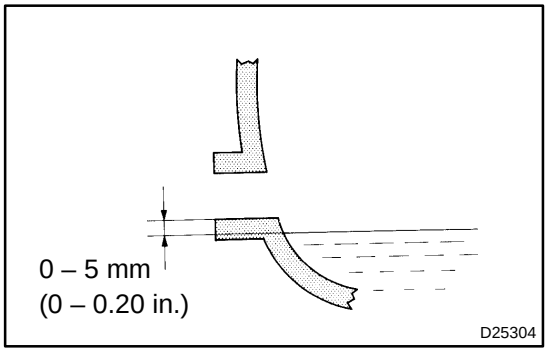
Use the table below to help you determine the cause of the problem. The numbers in the column of ”Suspect Area” indicate the possibility of the problem in descending order. Therefore, check the areas in this order. If necessary, replace or exchange these parts.

Symptom	Suspect Area	See page
Noise	1. Oil (Level low)	41–2
	2. Oil (Wrong)	41–2
	3. Gear (Worn or damaged)	41–15
	4. Bearing (Worn or damaged)	41–15
Oil leakage	1. Oil (Level too high)	41–2
	2. Gasket (Damaged)	41–15
	3. Oil seal (Worn or damaged)	41–15
	4. O–Ring (Worn or damaged)	41–15
Hard to shift or will not shift	1. Control cable (Faulty)	41–7 41–9
	2. Synchronizer ring (Worn or damaged)	41–15
	3. Shift key spring (Damaged)	41–15
Jumps out of gear	1. Locking ball spring (Damaged)	41–15
	2. Shift fork (Worn)	41–15
	3. Gear (Worn or damaged)	41–15
	4. Bearing (Worn or damaged)	41–15

MANUAL TRANSAXLE OIL

41051–01

ON–VEHICLE INSPECTION



1. CHECK TRANSAXLE OIL

(a) Stop the vehicle on the level place.

(b) Remove the transmission filler plug and gasket.

(c) Check that the oil surface is within 5 mm (0.20 in.) from the lowest position of the inner surface of the transmission filler plug opening.

NOTICE:

- **Excessively large or small amount of oil may cause troubles.**
- **After exchanging oil, drive the vehicle and check the oil level.**

(d) Check for oil leakage when the oil level is low.

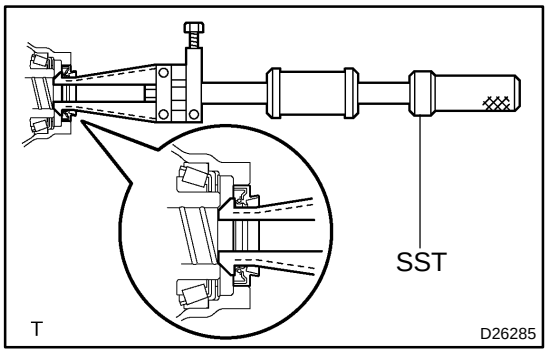
(e) Install the transmission filler plug and new gasket.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

FRONT DIFFERENTIAL OIL SEAL

4104T–02

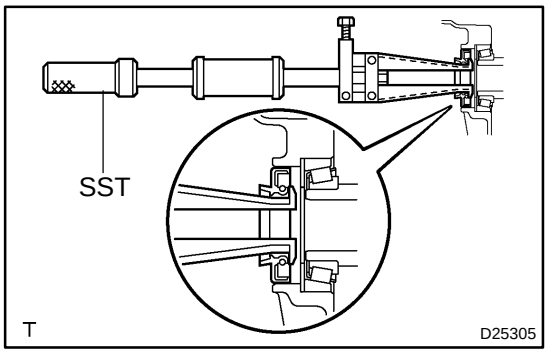
REPLACEMENT

1. **DRAIN MANUAL TRANSAXLE OIL**
   Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)
2. **REMOVE FRONT WHEEL**
3. **REMOVE FRONT DRIVE SHAFT ASSY LH**
   (See page 30–8)
   SST 09520–01010, 09520–24010 (09520–32040)
4. **REMOVE FRONT DRIVE SHAFT ASSY RH**
   (See page 30–8)



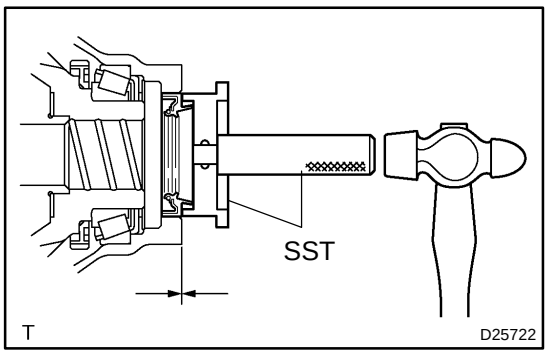
5. **REMOVE FRONT TRANSAXLE CASE COVER OIL SEAL**

(a) Using SST, remove the oil seal.
SST 09308–00010



6. **REMOVE TRANSMISSION CASE OIL SEAL**

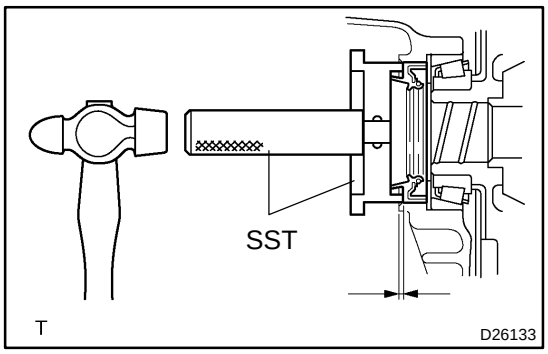
(a) Using SST, remove the oil seal.
SST 09308–00010



7. **INSTALL FRONT TRANSAXLE CASE COVER OIL SEAL**

(a) Coat a new oil seal lip with MP grease.
(b) Using SST and a hammer, install the oil seal.
SST 09608–10010, 09950–70010 (09951–07200)
Drive in depth: 0 ± 0.5 mm (0 ± 0.020 in.)

NOTICE:
Be careful not to damage the oil seal lip.



8. INSTALL TRANSMISSION CASE OIL SEAL

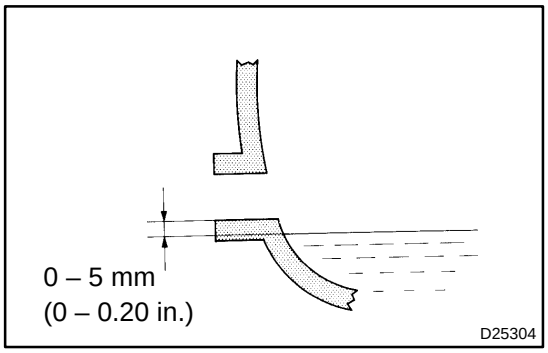
(a) Coat a new oil seal lip with MP grease.
(b) Using SST and a hammer, install the oil seal.
SST 09608–32010, 09950–70010 (09951–07200)
Drive in depth: 3.5 ± 0.5 mm (0.138 ± 0.020 in.)

NOTICE:
Be careful not to damage the oil seal lip.

9. INSTALL FRONT DRIVE SHAFT ASSY LH
(See page 30–8)

10. INSTALL FRONT DRIVE SHAFT ASSY RH
(See page 30–8)

11. INSTALL FRONT WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)



12. ADD MANUAL TRANSAXLE OIL
Oil grade: API GL–4 or GL–5
Viscosity: SAE 75W–90
Capacity: 2.5 liters (2.6 US qts, 2.2 Imp. qts)
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

13. INSPECT AND ADJUST MANUAL TRANSAXLE OIL(See page 41–2)
14. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT(See page 26–5)
15. CHECK ABS SPEED SENSOR SIGNAL(See page 05–404)

FLOOR SHIFT SHIFT LEVER ASSY

4104U–01

REPLACEMENT

1. REMOVE FLOOR SHIFT SHIFT LEVER KNOB SUB–ASSY

2. REMOVE RR CONSOLE BOX

3. REMOVE CONSOLE BOX FRONT
(See page 71–12)

4. REMOVE AIR DUCT REAR NO.1
(See page 55–29)

5. REMOVE AIR DUCT REAR NO.2
(See page 55–29)

6. DISCONNECT FLOOR SHIFT CABLE TRANSMISSION CONTROL SELECT

(a) Remove the clip and separate the top of the select cable from the shift lever assy.
(b) Turn the lock and separate the select cable from the shift lever retainer.

7. DISCONNECT FLOOR SHIFT CABLE TRANSMISSION CONTROL SHIFT

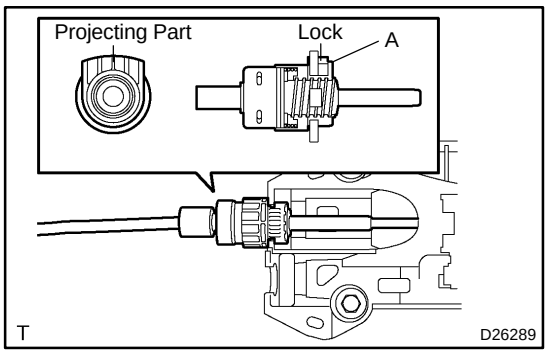
(a) Separate the top of the shift cable from the shift lever assy.
(b) Turn the lock and separate the shift cable from the shift lever retainer.

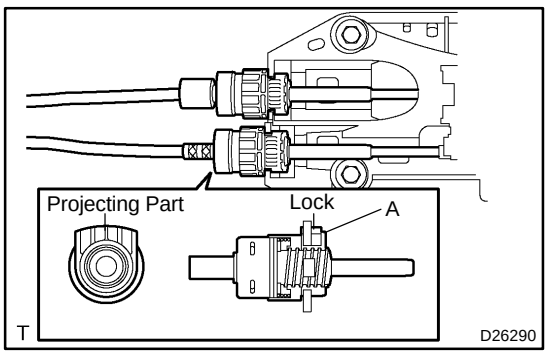
8. REMOVE FLOOR SHIFT SHIFT LEVER ASSY

(a) Remove the 4 bolts and shift lever assy.

9. INSTALL FLOOR SHIFT SHIFT LEVER ASSY

(a) Install the shift lever assy with 4 the bolts.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)





10. CONNECT FLOOR SHIFT CABLE TRANSMISSION CONTROL SHIFT

(a) Connect the shift cable to the shift lever retainer.

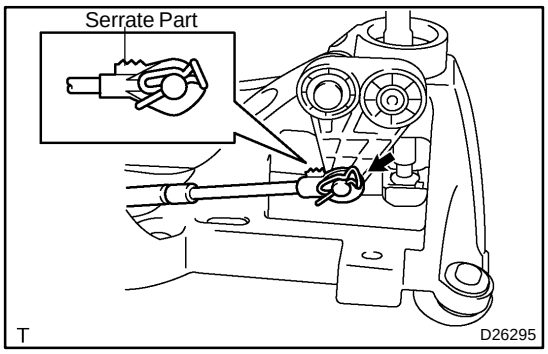
NOTICE:
- **The projecting part of the cable outer should face upward when the shift cable is installed.**
- **Make sure that after installation the cable outer lock is projecting from A shown in the illustration.**

(b) Install the top of the shift cable to the shift lever assy.

11. CONNECT FLOOR SHIFT CABLE TRANSMISSION CONTROL SELECT

(a) Connect the select cable to the shift lever retainer.

NOTICE:
- **The projecting part of the cable outer should face upward when the select cable is installed.**
- **Make sure that after installation the cable outer lock is projecting from A shown in the illustration.**



(b) Connect the top of the select cable to the shift lever assy and install the clip.

NOTICE:

- **The serrate part of the select cable point should face upward when the select cable point is connected.**
- **the clip should be inserted to the direction shown in the illustration.**

12. INSTALL AIR DUCT REAR NO.2
(See page 55–29)

13. INSTALL AIR DUCT REAR NO.1
(See page 55–29)

14. REMOVE CONSOLE BOX FRONT
(See page 71–12)

15. REMOVE RR CONSOLE BOX

16. REMOVE FLOOR SHIFT SHIFT LEVER KNOB SUB–ASSY

FLOOR SHIFT CABLE TRANSMISSION CONTROL SHIFT

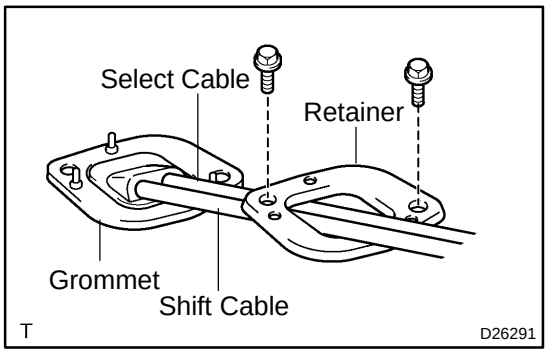
4104V–01

REPLACEMENT

1. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB–ASSY (See page 71–12)**
2. **REMOVE AIR CONDITIONING RADIATOR ASSY (See page 55–29)**
3. **REMOVE AIR BAG SENSOR ASSY CENTER (See page 60–56)**

4. REMOVE FLOOR SHIFT CABLE TRANSMISSION CONTROL SHIFT

(a) Remove the clip and washer and separate the top of the shift cable from the transaxle.
(b) Remove the clip and shift cable from the control cable bracket.
(c) Turn the lock and separate the shift cable from the shift lever retainer.
(d) Separate the top of the shift cable from the shift lever assy.



(e) Remove the 2 retainer set bolts from the floor.
(f) Separate the retainer from the grommet.
(g) Remove the select cable from the grommet.
(h) Remove the shift cable through the floor hole and retainer.

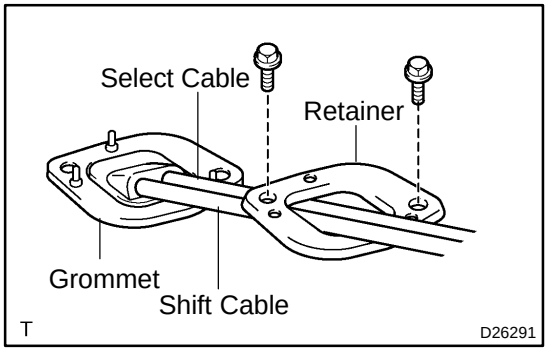
5. INSTALL FLOOR SHIFT CABLE TRANSMISSION CONTROL SHIFT

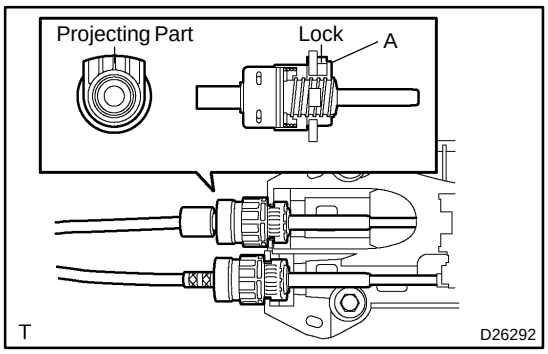
(a) Put the shift cable through the floor hole and retainer.
(b) Install the select cable to the grommet.
(c) Install the retainer to the grommet.

NOTICE:

Fit 3 projections of the grommet into 3 holes of the retainer.

(d) Install the 2 retainer set bolts.
Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)





(e) Connect the shift cable to the shift lever retainer.

NOTICE:

- **The projecting part of the cable outer should face upward when the shift cable is installed.**
- **Make sure that after installation the cable outer lock is projecting from A shown in the illustration.**

(f) Install the top of the shift cable to the shift lever assy.

(g) Connect the shift cable to the control cable bracket and install a new clip.

(h) Connect the shift cable to the transaxle and install the washer and clip.

6. INSTALL AIR BAG SENSOR ASSY CENTER (See page 60–56)

7. INSTALL AIR CONDITIONING RADIATOR ASSY (See page 55–29)

8. INSTALL INSTRUMENT PANEL SAFETY PAD SUB–ASSY (See page 71–12)

9. INSPECT SRS WARNING LIGHT(See page 05–690)

FLOOR SHIFT CABLE TRANSMISSION CONTROL SELECT

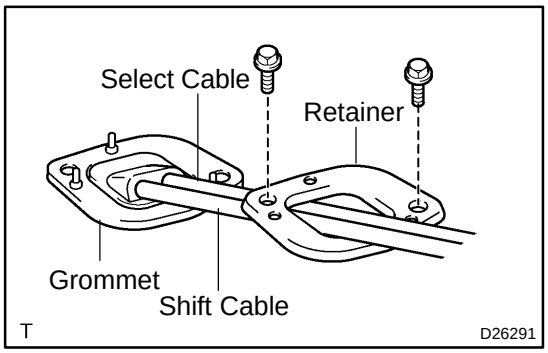
4104W–01

REPLACEMENT

1. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB–ASSY (See page 71–12)**
2. **REMOVE AIR CONDITIONING RADIATOR ASSY (See page 55–29)**
3. **REMOVE AIR BAG SENSOR ASSY CENTER (See page 60–56)**

4. **REMOVE FLOOR SHIFT CABLE TRANSMISSION CONTROL SELECT**

(a) Remove the clip and washer and separate the top of the select cable from the transaxle.
(b) Remove the clip and select cable from the control cable bracket.
(c) Turn the lock and separate the select cable from the shift lever retainer.
(d) Remove the clip and separate the top of the select cable from the shift lever assy.



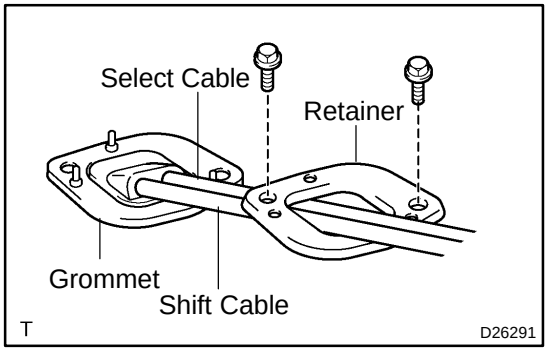
(e) Remove the 2 retainer set bolts from the floor.
(f) Separate the retainer from the grommet.
(g) Remove the select cable from the grommet.
(h) Remove the select cable through the floor hole and retainer.

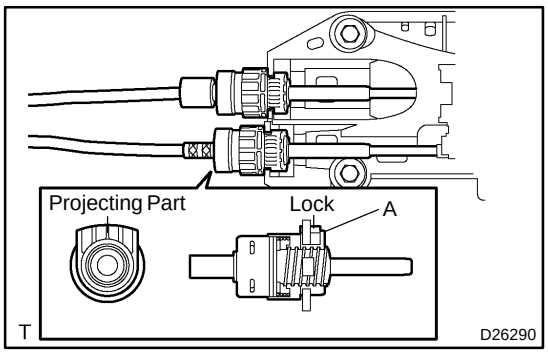
5. **INSTALL FLOOR SHIFT CABLE TRANSMISSION CONTROL SELECT**

(a) Put the select cable through the floor hole and retainer.
(b) Install the select cable to the grommet.
(c) Install the retainer to the grommet.

NOTICE:
Fit 3 projections of the grommet into 3 holes of the retainer.

(d) Install the 2 retainer set bolts.
Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)

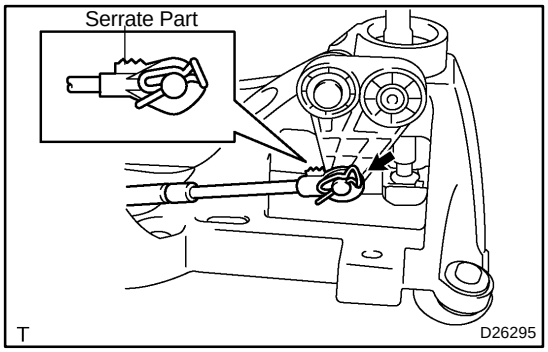




(e) Connect the select cable to the shift lever retainer.

NOTICE:

- **The projecting part of the cable outer should face upward when the select cable is installed.**
- **Make sure that after installation the cable outer lock is projecting from A shown in the illustration.**



(f) Connect the top of the select cable to the shift lever assy and install the clip.

NOTICE:

- **The serrate part of the select cable point should face upward when the select cable point is connected.**
- **the clip should be inserted to the direction shown in the illustration.**

(g) Connect the top of the select cable to the shift lever assy and install the clip.

(h) Connect the select cable to the control cable bracket and install a new clip.

(i) Connect the select cable to the transaxle and install the washer and clip.

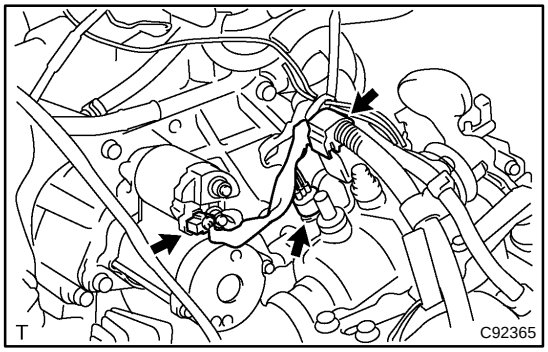
6. **INSTALL AIR BAG SENSOR ASSY CENTER (See page 60–56)**
7. **INSTALL AIR CONDITIONING RADIATOR ASSY (See page 55–29)**
8. **INSTALL INSTRUMENT PANEL SAFETY PAD SUB–ASSY (See page 71–12)**
9. **INSPECT SRS WARNING LIGHT(See page 05–690)**

MANUAL TRANSAXLE ASSY

400FP–01

REPLACEMENT

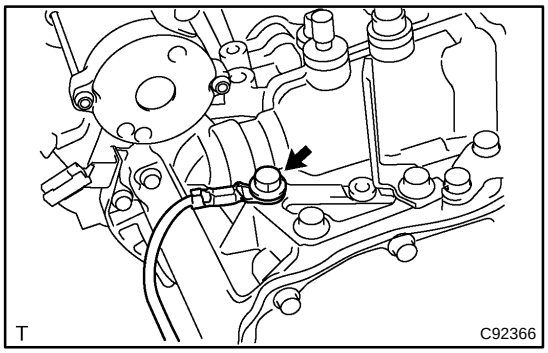
1. **REMOVE ENGINE ASSEMBLY WITH TRANSAXLE(See page 14–22)**
2. **REMOVE FRONT DRIVE SHAFT ASSY RH (See page 30–8)**
3. **REMOVE FRONT DRIVE SHAFT ASSY LH (See page 30–8)**



4. DISCONNECT WIRE HARNESS

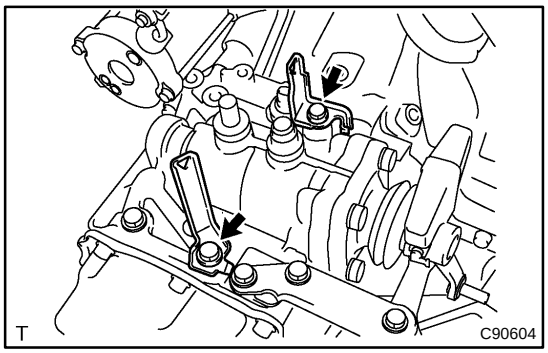
(a) Disconnect the wire harness clamp.

(b) Disconnect the back–up lamp switch connector and starter connector.



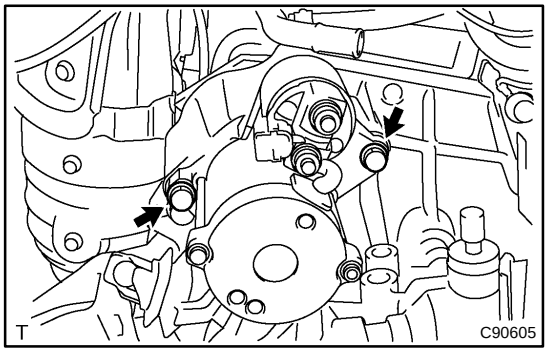
5. REMOVE ENGINE WIRE NO.3

(a) Remove the bolt and engine wire No.3.



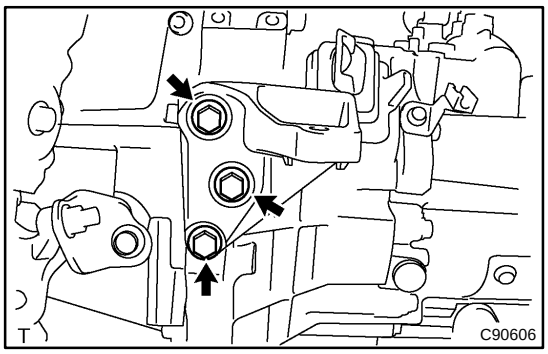
6. REMOVE WIRE HARNESS CLAMP

(a) Remove the 2 bolts and 2 wire harness clamps.



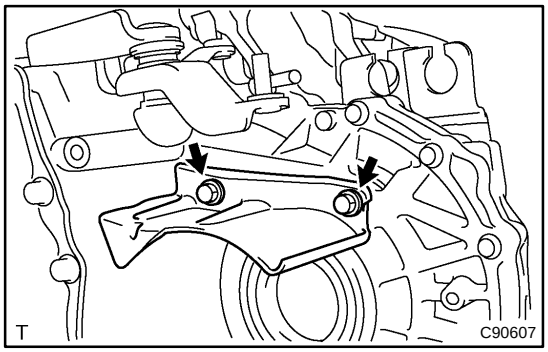
7. REMOVE STARTER ASSY

(a) Remove the 2 bolts and starter assy.



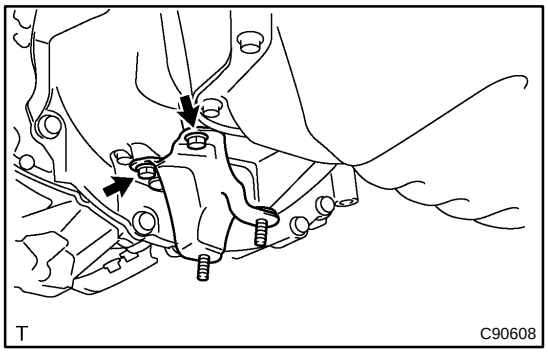
8. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING BRACKET

(a) Remove the 3 bolts and engine mounting bracket.



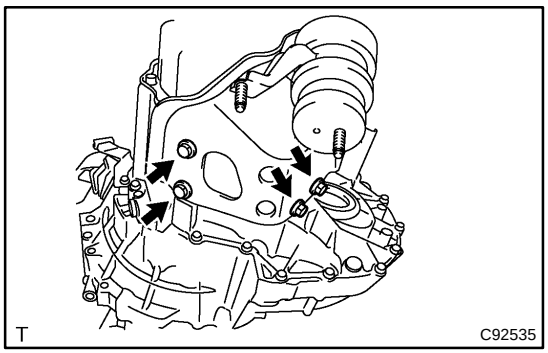
9. REMOVE MANUAL TRANSMISSION CASE PROTECTOR

(a) Remove the 2 bolts and manual transmission case protector.



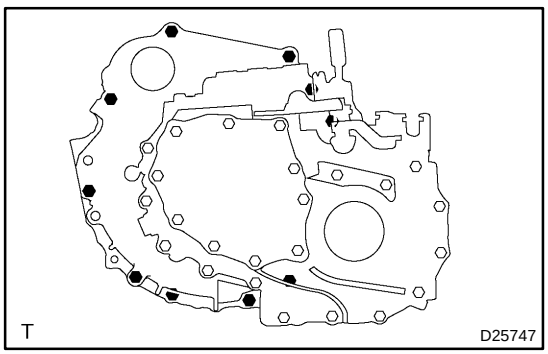
10. REMOVE EXHAUST PIPE SUPPORT BRACKET NO.1

(a) Remove the 2 bolts and exhaust pipe support bracket No.1.



11. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

(a) Remove the 4 bolts and engine mounting insulator.

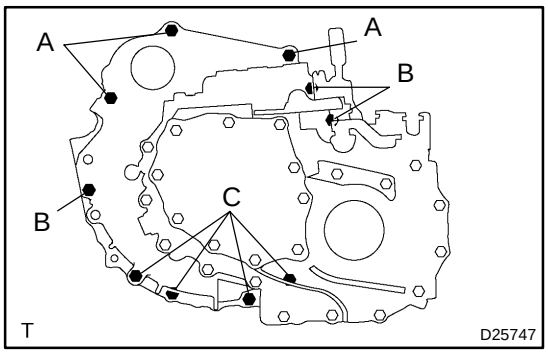


12. REMOVE MANUAL TRANSAXLE ASSY

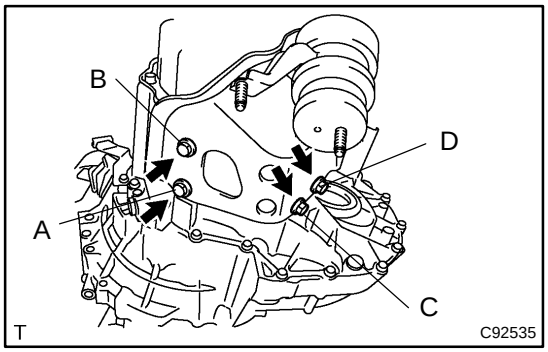
(a) Remove the 10 bolts.
(b) Separate and remove the transaxle from the engine.

13. INSTALL MANUAL TRANSAXLE ASSY

(a) Align the input shaft with the clutch disc and install the transaxle to the engine.



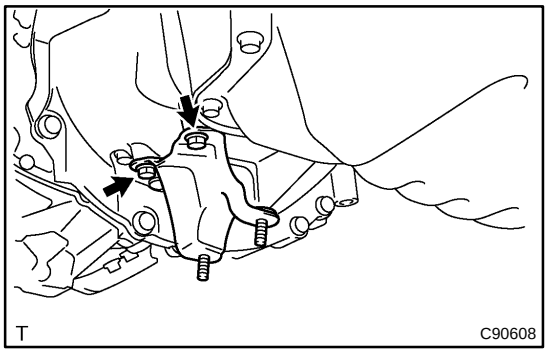
(b) Install the 10 bolts.
Torque:
Bolt A: 64 N·m (650 kgf·cm, 47 ft·lbf)
Bolt B: 46 N·m (470 kgf·cm, 34 ft·lbf)
Bolt C: 44 N·m (449 kgf·cm, 32 ft·lbf)



14. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

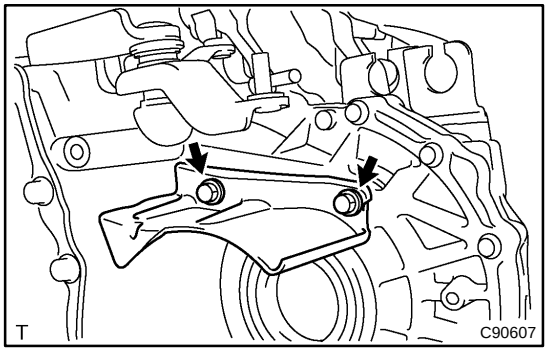
(a) Install the engine mounting insulator with the 4 bolts.
Torque: 64 N·m (653 kgf·cm, 47 ft·lbf)

HINT:
Tighten them in the order, A, B, C and D.



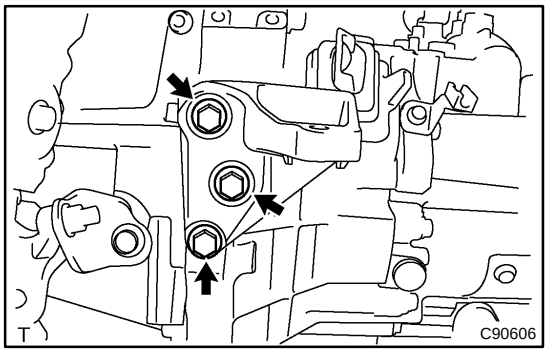
15. INSTALL EXHAUST PIPE SUPPORT BRACKET NO.1

(a) Install the exhaust pipe support bracket No.1 with the 2 bolts.
Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)



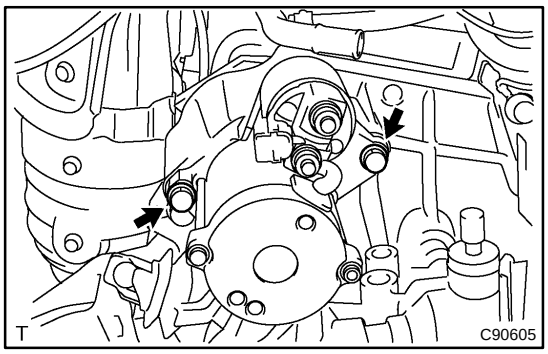
16. INSTALL MANUAL TRANSMISSION CASE PROTECTOR

(a) Install the manual transmission case protector with the 2 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)



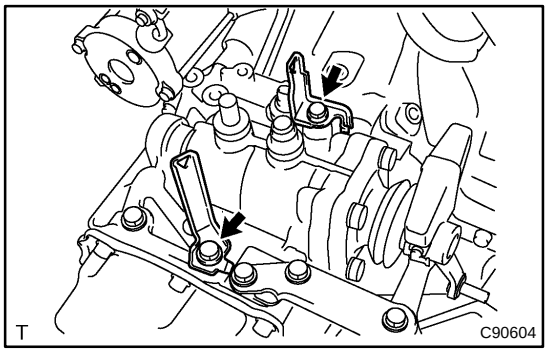
17. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING BRACKET

(a) Install the engine mounting bracket with the 3 bolts.
Torque: 64 N·m (653 kgf·cm, 47 ft·lbf)



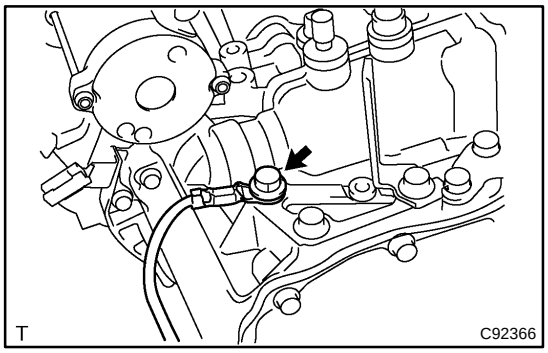
18. INSTALL STARTER ASSY

(a) Install the starter assy with the 2 bolts.
Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)



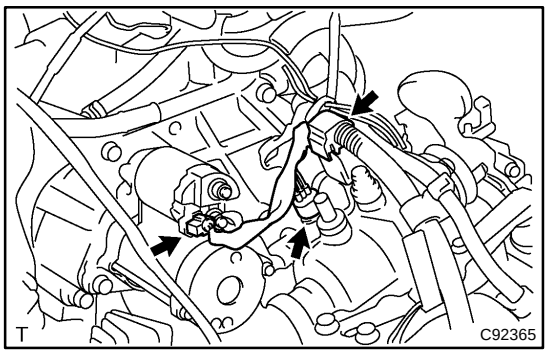
19. INSTALL WIRE HARNESS CLAMP

(a) Install the wire harness clamps with the 2 bolts.
Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)



20. INSTALL ENGINE WIRE NO.3

(a) Install the engine wire No. 3 with the bolt.
Torque: 25.5 N·m (260 kgf·cm, 19 ft·lbf)



21. CONNECT WIRE HARNESS

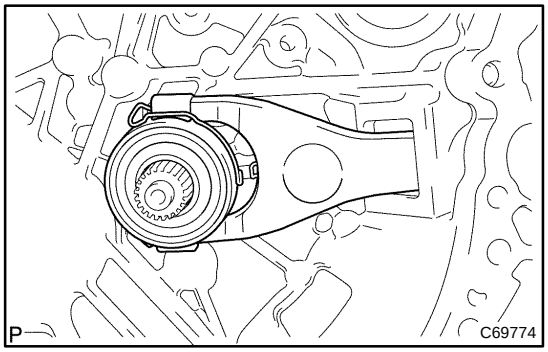
(a) Connect the wire harness clamp.
(b) Connect the back–up lamp switch connector and starter connector.

22. INSTALL FRONT DRIVE SHAFT ASSY LH
(See page 30–8)
23. INSTALL FRONT DRIVE SHAFT ASSY RH
(See page 30–8)
24. INSTALL ENGINE ASSEMBLY WITH TRANSAXLE(See page 14–22)

MANUAL TRANSAXLE ASSY (E351)

OVERHAUL

41053–01

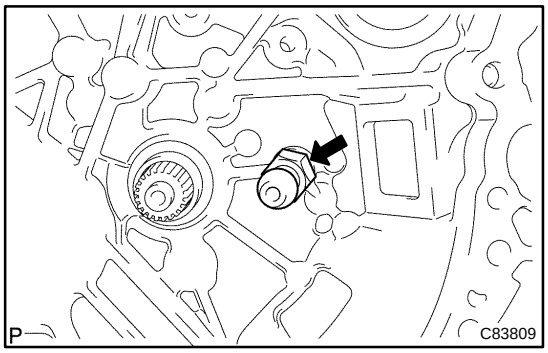


1. REMOVE CLUTCH RELEASE FORK SUB–ASSY

(a) Remove the clutch release fork with clutch release bearing from the manual transaxle case.

2. REMOVE CLUTCH RELEASE BEARING ASSY

(a) Remove the clutch release bearing assy and clutch release bearing hub clip from the clutch release fork sub–assy.



3. REMOVE RELEASE FORK SUPPORT

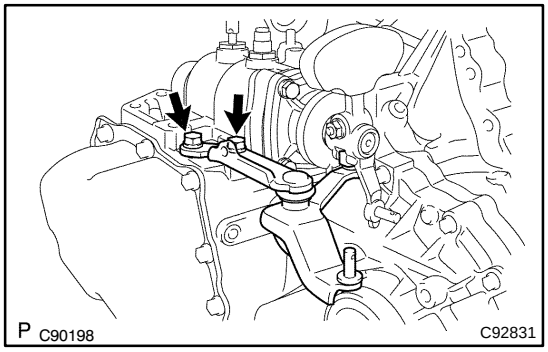
(a) Remove the release fork support from the manual transaxle case.

4. REMOVE CLUTCH RELEASE FORK BOOT

(a) Remove the clutch release fork boot from the manual transaxle case.

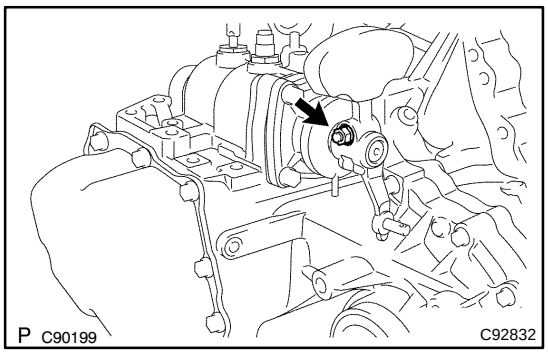
5. REMOVE SPEEDOMETER DRIVEN HOLE COVER SUB–ASSY

(a) Remove the bolt and speedometer driven hole cover.



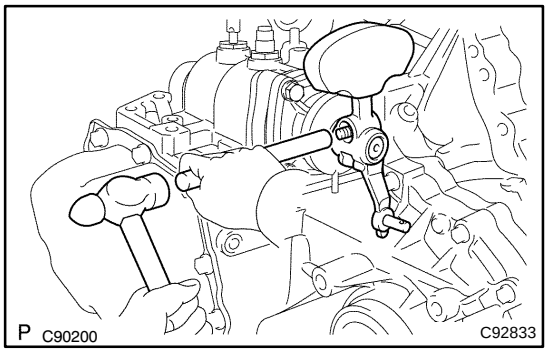
6. REMOVE SELECTING BELL CRANK ASSY

(a) Remove the 2 bolts and selecting bell crank assy from manual transmission case.



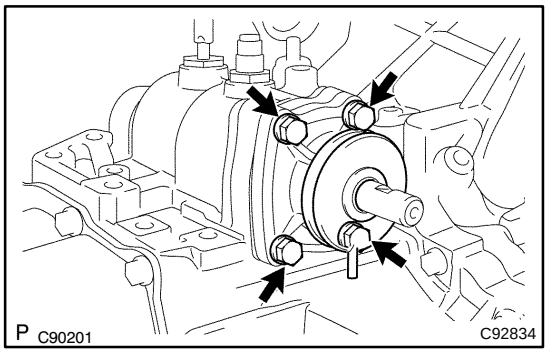
7. REMOVE CONTROL SHIFT LEVER

(a) Remove the nut and spring washer.



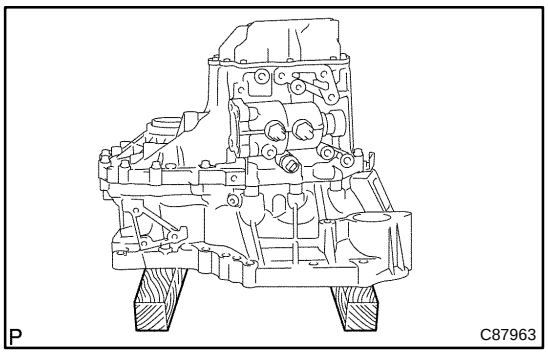
(b) Using a brass bar and hammer, remove the shift outer lock pin.

(c) Remove the control shift lever.



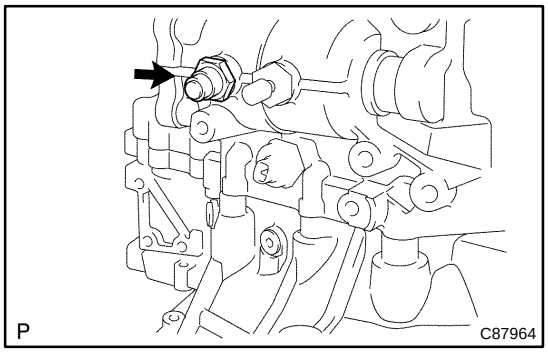
8. REMOVE CONTROL SHAFT COVER

(a) Remove the 4 bolts and control shaft cover from the manual transmission case.



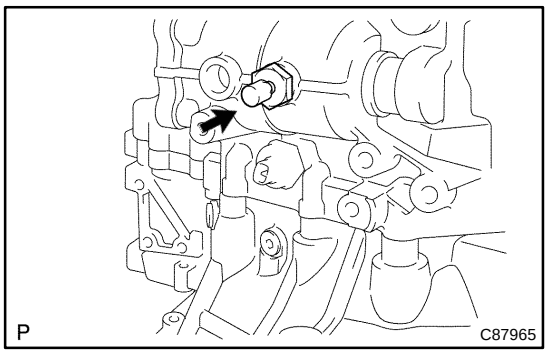
9. FIX MANUAL TRANSAXLE ASSY

(a) Using wooden blocks, fix the manual transaxle assy.



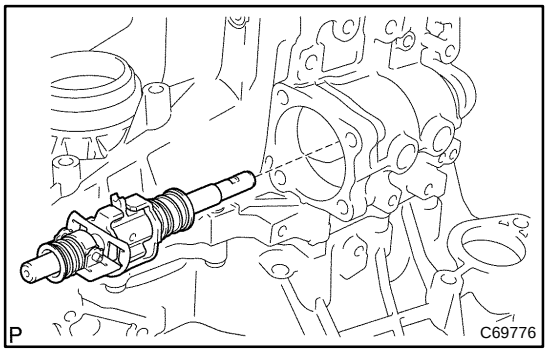
10. REMOVE LOCK BALL ASSY NO.1

(a) Remove the lock ball assy No.1 from the manual transmission case.



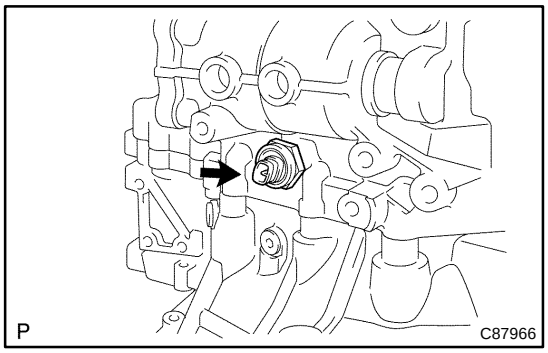
11. REMOVE MANUAL TRANSMISSION BREATHER PLUG

(a) Remove the manual transmission breather plug and gasket.



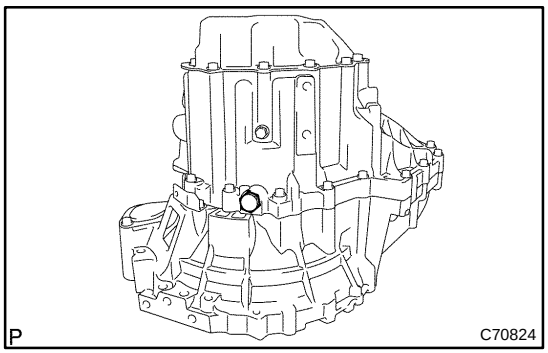
12. REMOVE SHIFT & SELECT LEVER SHAFT ASSY

(a) Remove the shift & select lever shaft assy from the manual transmission case.



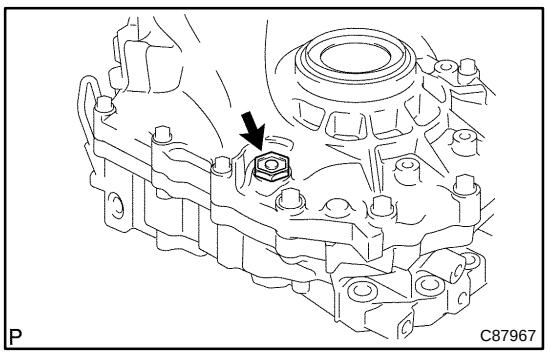
13. REMOVE BACK UP LAMP SWITCH ASSY

(a) Remove the back up lamp switch assy and gasket from the manual transmission case.



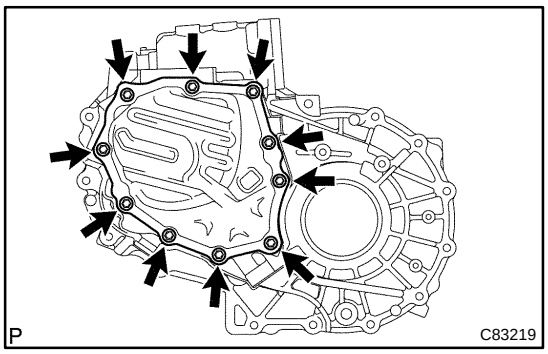
14. REMOVE MANUAL TRANSMISSION FILLER PLUG

(a) Remove the manual transmission filler plug and gasket from the manual transmission case.



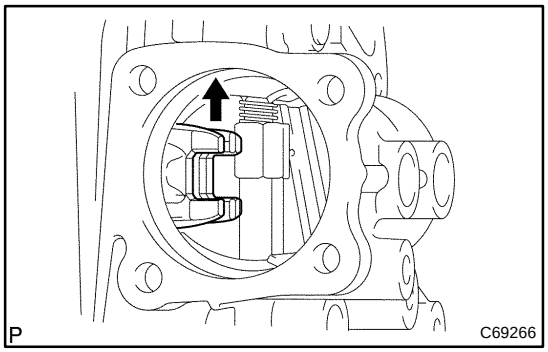
15. REMOVE DRAIN (MTM) PLUG SUB–ASSY

(a) Remove the drain (MTM) plug sub–assy and gasket from the manual transmission case.



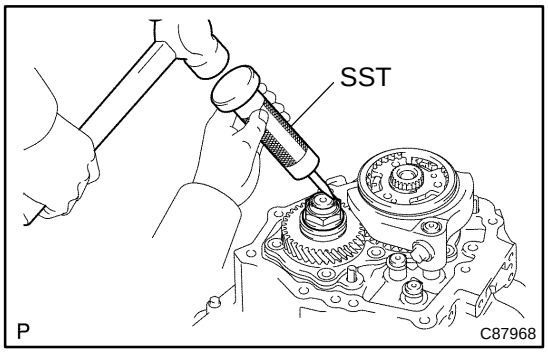
16. REMOVE MANUAL TRANSMISSION CASE COVER SUB–ASSY

(a) Remove the 10 bolts and manual transmission case cover from the manual transmission case.

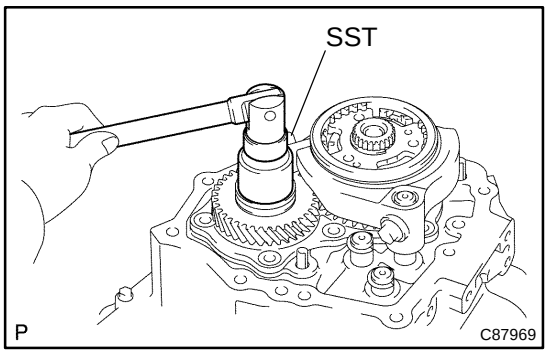


17. REMOVE MANUAL TRANSMISSION OUTPUT SHAFT REAR SET NUT

(a) Engage the gear to the double meshing.

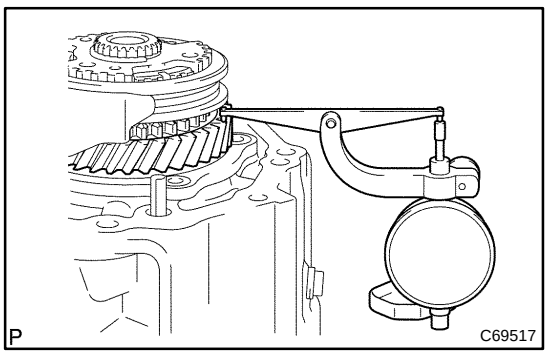


(b) Using SST and a hammer, loosen the staked part of the manual transmission output shaft rear set nut.
SST 09930–00010



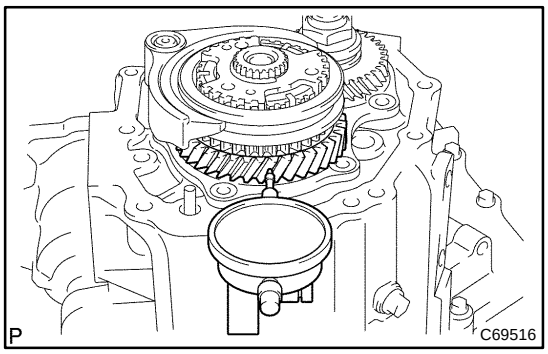
(c) Using SST, remove the manual transmission output shaft rear set nut from the output shaft.
SST 09229–55010

(d) Disengage the double meshing of the gear.



18. INSPECT 5TH GEAR THRUST CLEARANCE

(a) Using a dial indicator, inspect the 5th gear thrust clearance.
Standard clearance:
0.10 – 0.65 mm (0.0039 – 0.0256 in.)

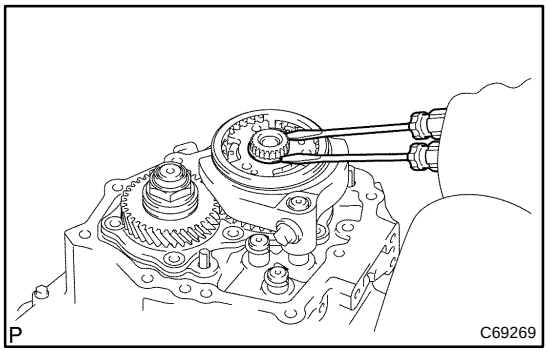


19. INSPECT 5TH GEAR RADIAL CLEARANCE

(a) Using a dial indicator, inspect the 5th gear radial clearance.

Standard clearance:
0.009 – 0.050 mm (0.0004 – 0.0020 in.)

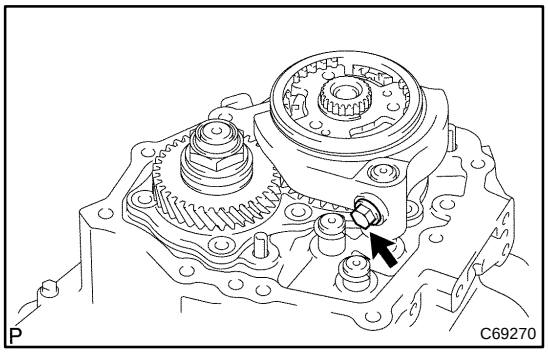
HINT:
If the clearance is out of the specification, replace 1st gear needle roller bearing.



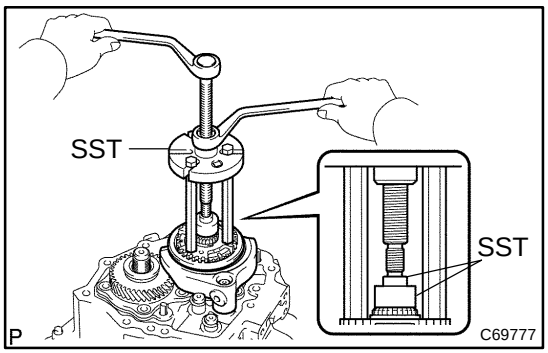
20. REMOVE TRANSMISSION CLUTCH HUB NO.3

(a) Using 2 screwdrivers and hammer, remove the transmission clutch hub No.3 shaft snap ring from the input shaft.

HINT:
Using a waste to prevent the snap ring from being scattered.

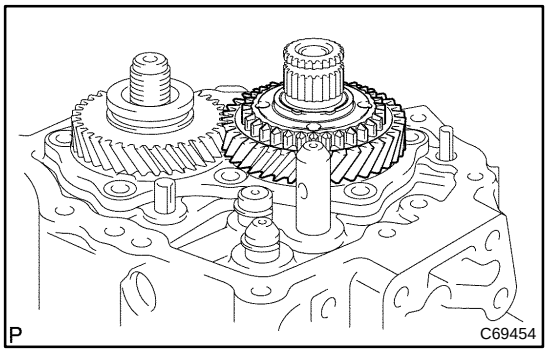


(b) Remove the gear shift fork bolt from the gear shift fork No.3.



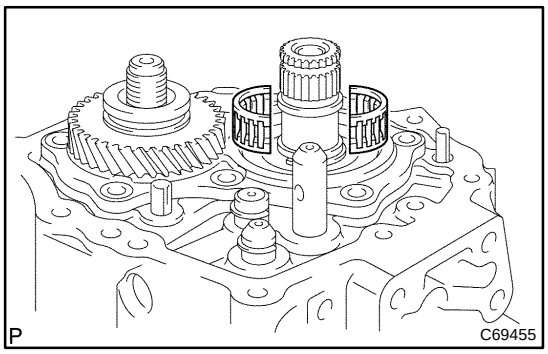
(c) Using SST, remove the transmission clutch hub No.3 and gear shift fork No.3 from the input shaft.

SST 09950–30012 (09951–03010, 09953–03010, 09954–03010), 09950–50013 (09957–04010), 09950–60010 (09951–00280)



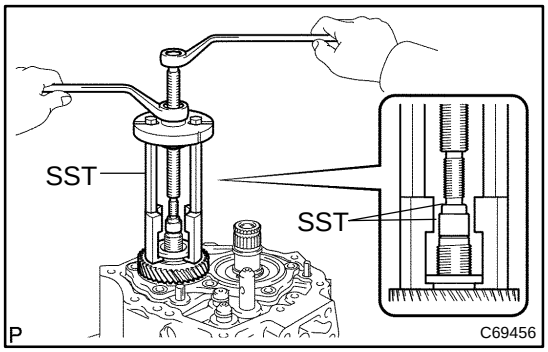
21. REMOVE 5TH GEAR

(a) Remove the 5th gear from the input shaft.



22. REMOVE 5TH GEAR NEEDLE ROLLER BEARING

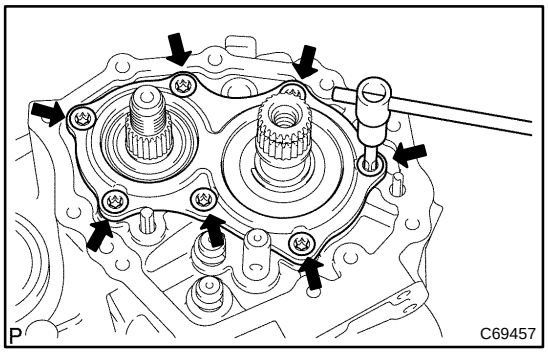
(a) Remove the 5th gear needle roller bearing from the input Shaft.



23. REMOVE 5TH DRIVEN GEAR

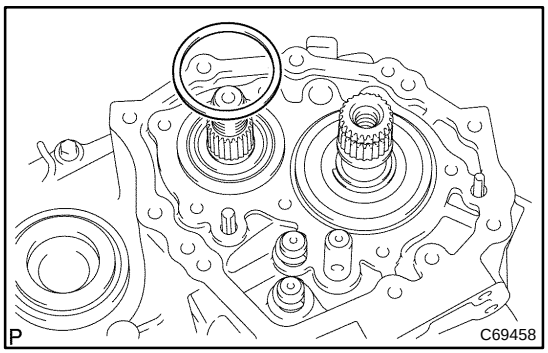
(a) Using SST, remove the 5th driven gear from the output shaft.

SST 09950–30012 (09951–03010, 09953–03010, 09954–03010, 09957–04010), 09950–60010 (09951–00180, 09955–03011), 09950–50013



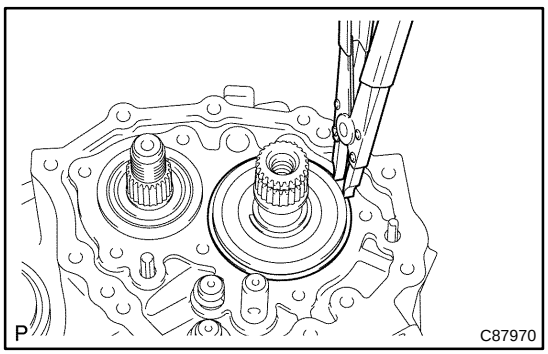
24. REMOVE BEARING RETAINER REAR (MTM)

(a) Using a torx socket wrench (T45), remove the 7 torx screws and bearing retainer rear (MTM) from the manual transmission case.



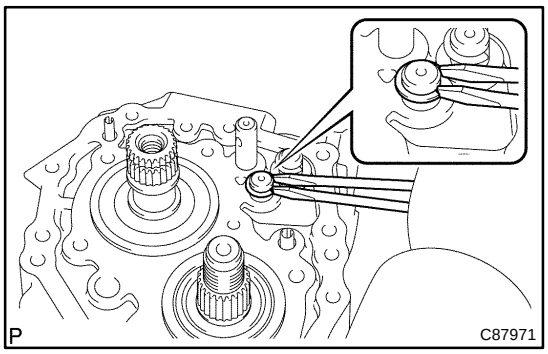
25. REMOVE OUTPUT SHAFT REAR BEARING SHIM

(a) Remove the output shaft rear bearing shim from the output shaft.



26. REMOVE INPUT SHAFT REAR BEARING SHAFT SNAP RING

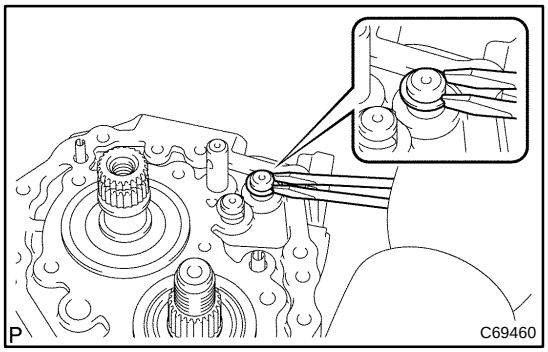
(a) Using a snap ring expander, remove the input shaft rear bearing shaft snap ring from the input shaft.



27. REMOVE SHIFT FORK SHAFT SHAFT SNAP RING

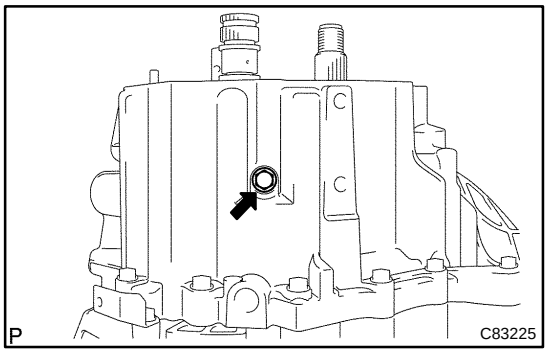
(a) Using 2 screwdrivers and a hammer, remove the shift fork shaft shaft snap ring from the gear shift fork shaft No.1.

HINT:
Using a waste to prevent the snap ring from being scattered.



(b) Using 2 screw drivers and a hammer, remove the shift fork shaft shaft snap ring from the gear shift fork shaft No.2.

HINT:
Using a waste to prevent the snap ring from being scattered.

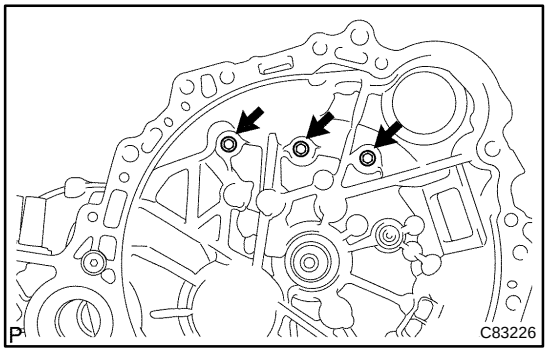


28. REMOVE REVERSE IDLER GEAR SHAFT BOLT

(a) Remove the reverse idler gear shaft bolt and gasket.

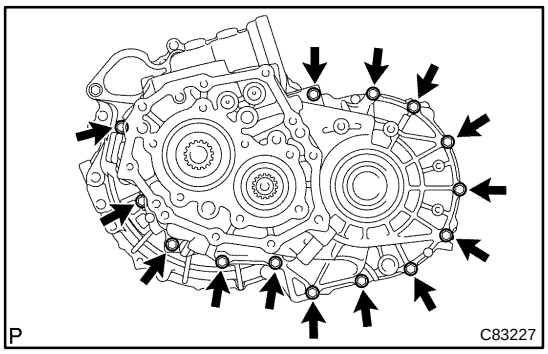
29. REMOVE CLUTCH TUBE BRACKET NO.1

(a) Remove the 3 bolts and remove the clutch tube bracket.



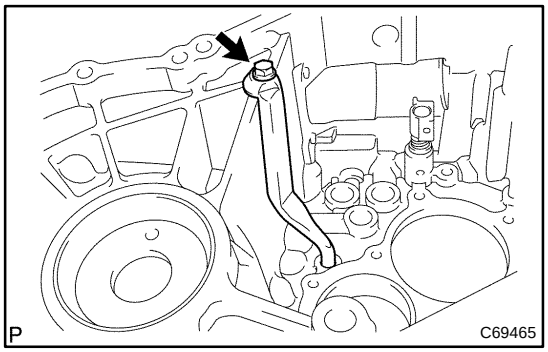
30. REMOVE MANUAL TRANSMISSION CASE

(a) Remove the 3 bolts of the manual transaxle case side.



(b) Remove the 14 bolts of the manual transmission case side.

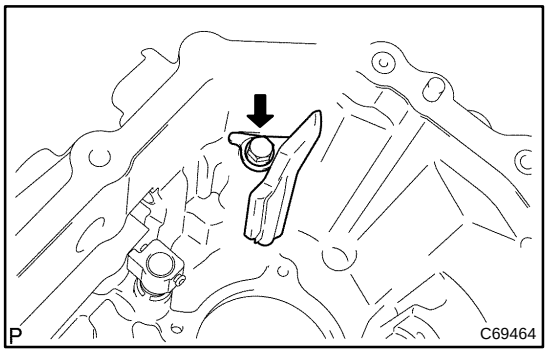
(c) Using a plastic hammer, remove the manual transmission case.



31. REMOVE OIL RECEIVER PIPE NO.2 (MTM)

(a) Remove the bolt and oil receiver pipe No.2 (MTM) from the manual transmission case.

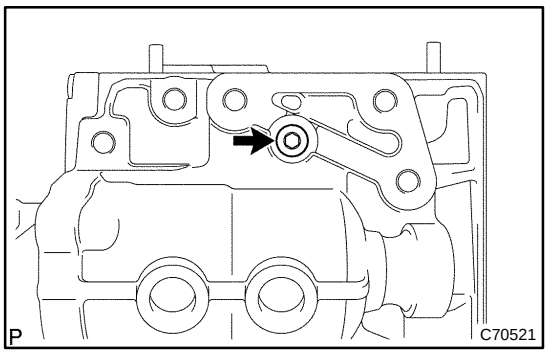
NOTICE:
Do not damage the pipe.



32. REMOVE OIL RECEIVER PIPE NO.1 (MTM)

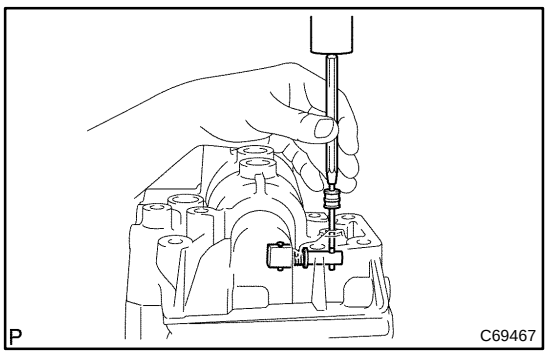
(a) Remove the bolt and oil receiver pipe No.1 (MTM) from the manual transmission case.

NOTICE:
Do not damage the pipe.

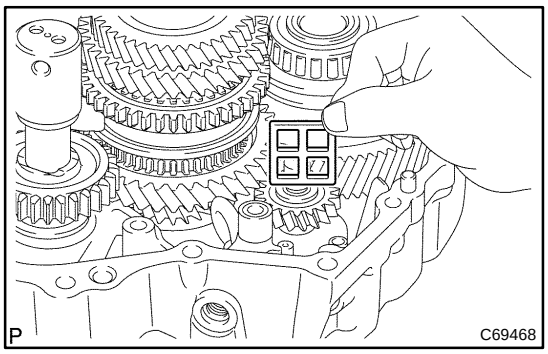


33. REMOVE REVERSE RESTRICT PIN ASSY

(a) Using a hexagon wrench (6 mm), remove the reverse restrict pin plug from the manual transmission case.

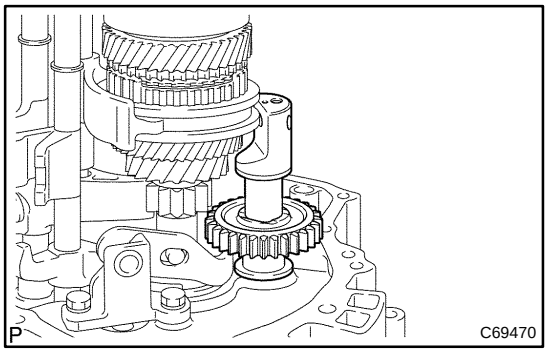


(b) Using a pin punch (ϕ 5 mm), remove the slotted pin and reverse restrict pin assy.



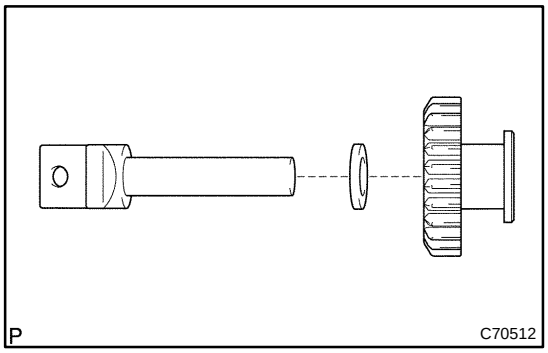
34. REMOVE TRANSMISSION MAGNET

(a) Remove the transmission magnet from the manual transaxle case.

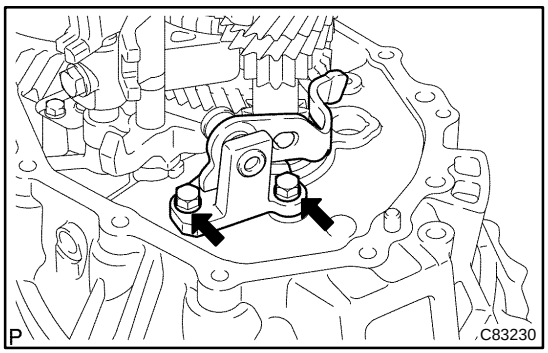


35. REMOVE REVERSE IDLER GEAR SUB–ASSY

(a) Remove the reverse idler gear sub–assy from the manual transaxle case.

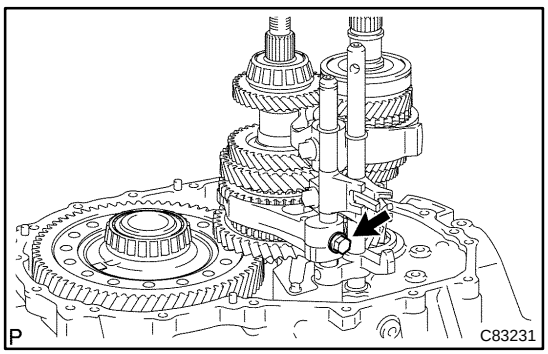


(b) Remove the reverse gear and reverse idler thrust washer from the reverse idler gear shaft.



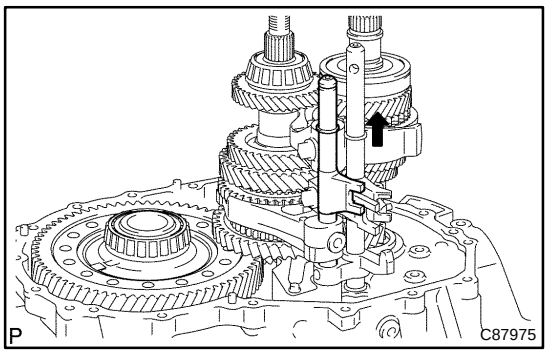
36. REMOVE REVERSE SHIFT ARM BRACKET ASSY

(a) Remove the 2 bolts and reverse shift arm bracket from the manual transaxle case.

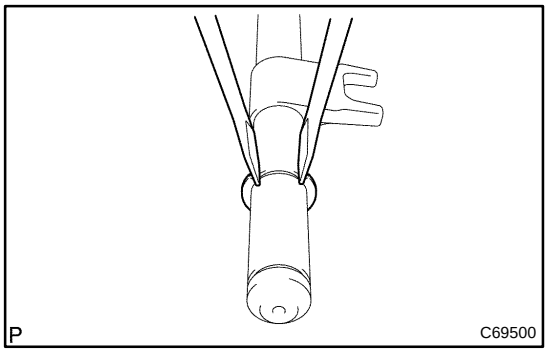


37. REMOVE GEAR SHIFT FORK SHAFT NO.1

(a) Remove the shift fork bolt from the gear shift fork No.1.

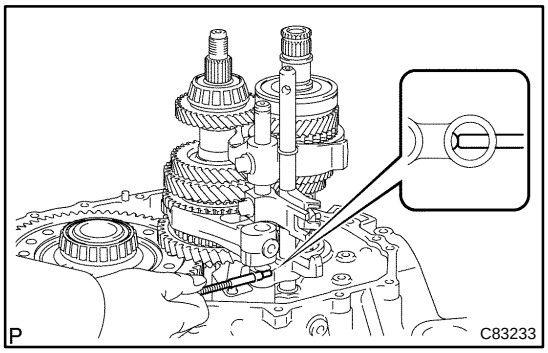


(b) Pull out the gear shift fork shaft No.1 while the gear fork shaft No.3 is pulled up.



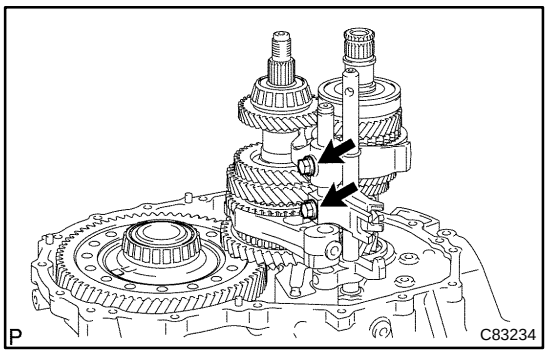
(c) Using 2 screwdrivers and a hammer, remove the shift fork shaft snap ring from the gear shift fork shaft No.1.

NOTICE:
Using a waste to prevent the snap ring from being scattered.



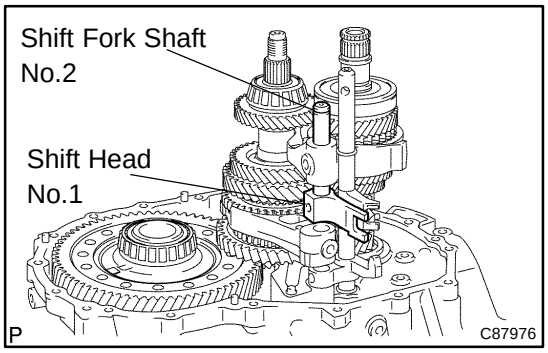
38. REMOVE REVERSE SHIFT FORK ROLLER

(a) Using a magnetic finger, remove the reverse shift fork roller from the reverse shift fork.

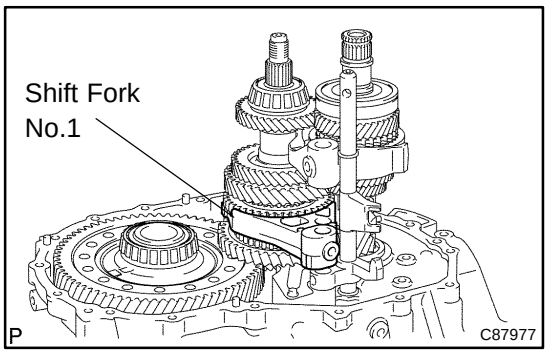


39. REMOVE GEAR SHIFT FORK SHAFT NO.2

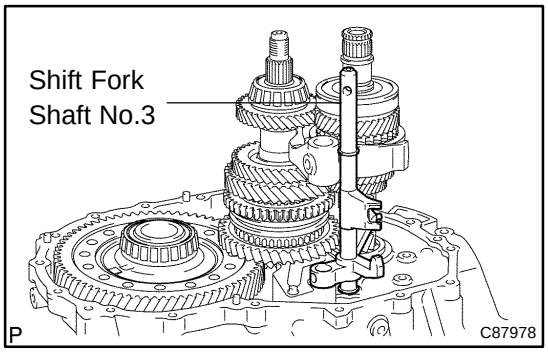
(a) Remove the 2 shift fork bolts from the gear shift fork No.2 and gear shift head No.1.



(b) Remove the gear shift fork shaft No.2 and gear shift head No.1 from the manual transaxle case.

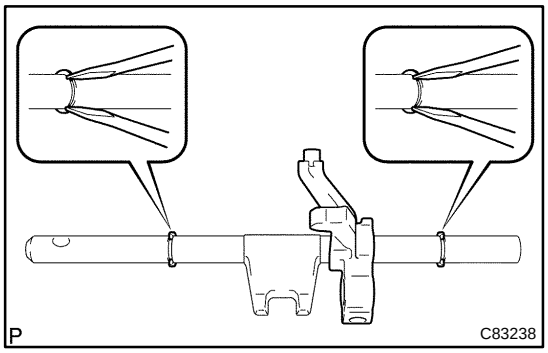


40. REMOVE GEAR SHIFT FORK NO.1



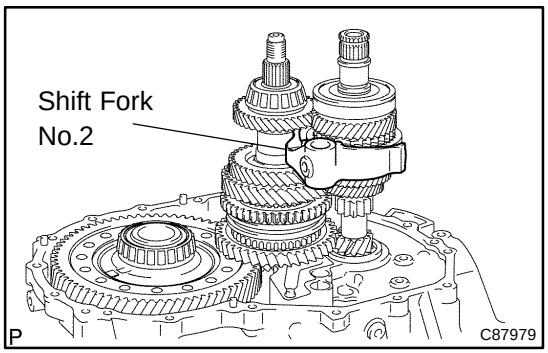
41. REMOVE GEAR SHIFT FORK SHAFT NO.3

(a) Remove the gear shift fork shaft No.3 from the manual transaxle case.



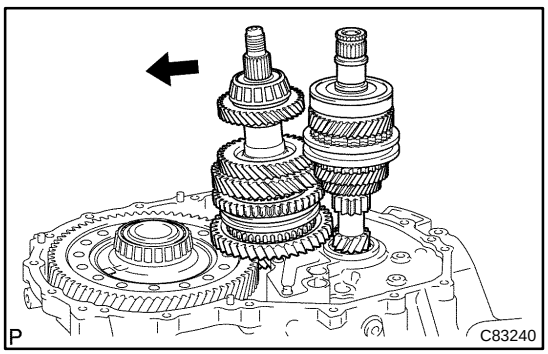
(b) Using 2 screwdriver and a hammer, remove the 2 shift fork shaft snap rings from the gear shift fork shaft No. 3.

(c) Remove the reverse shift fork from the gear shift fork shaft No.3.



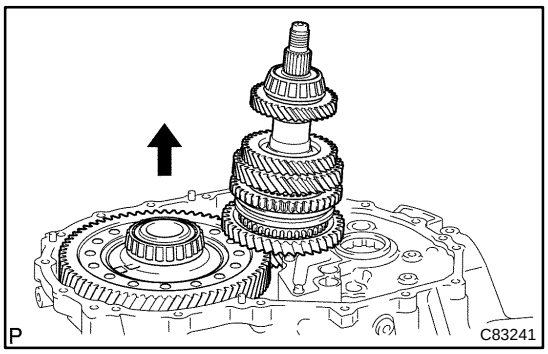
42. REMOVE GEAR SHIFT FORK NO.2

(a) Remove the gear shift fork No.2 from the input shaft assy.



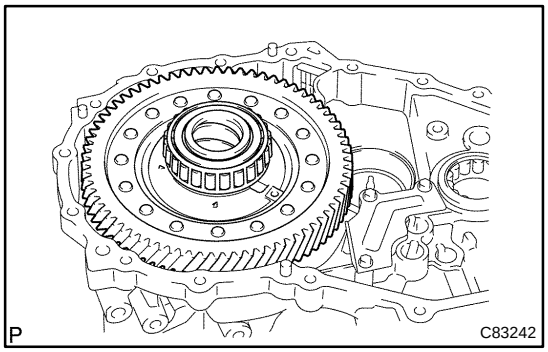
43. REMOVE INPUT SHAFT ASSY

(a) Incline the output shaft then remove the input shaft from the manual transaxle case.



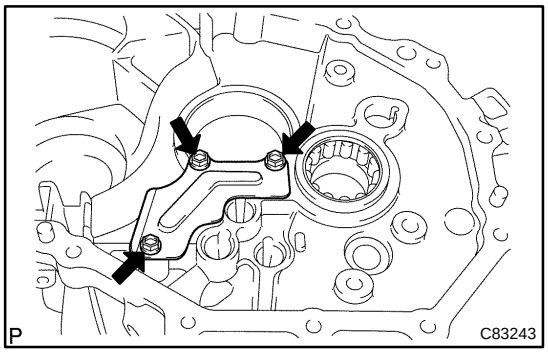
44. REMOVE OUTPUT SHAFT ASSY

(a) Remove the output shaft from the manual transaxle case.



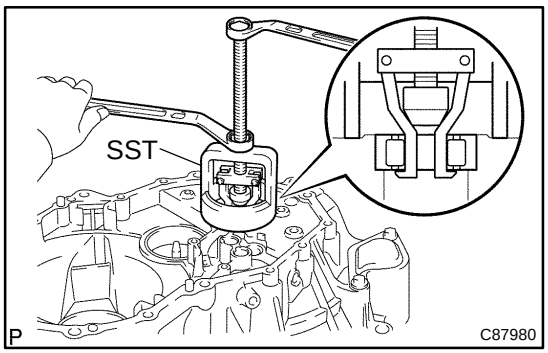
45. REMOVE DIFFERENTIAL CASE ASSY

(a) Remove the differential case assy from the manual transaxle case.



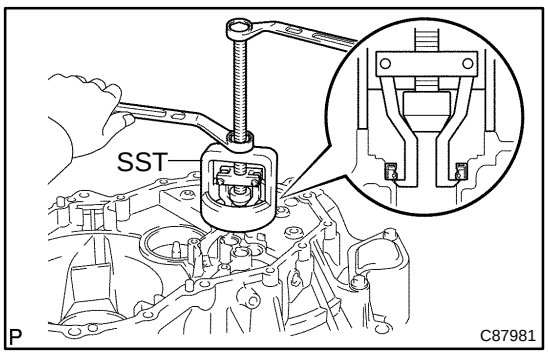
46. REMOVE MANUAL TRANSAXLE CASE RECEIVER

(a) Remove the 3 bolts and manual transaxle case receiver from the manual transaxle case.



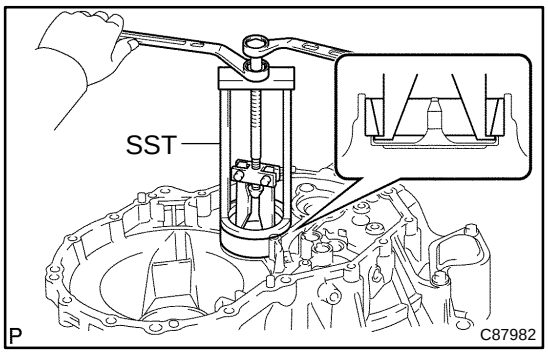
47. REMOVE INPUT SHAFT FRONT BEARING

(a) Using SST, remove the input shaft front bearing (outer race) from the manual transaxle case.
SST 09612–65014 (09612–01040, 09612–01050)



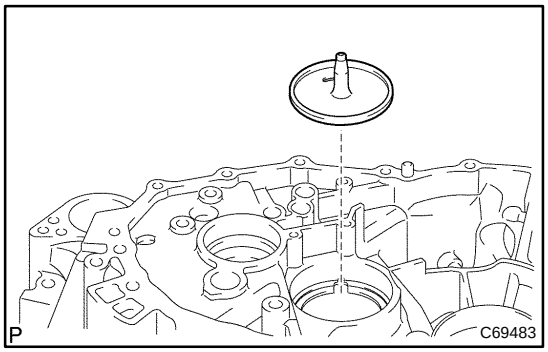
48. REMOVE FRONT TRANSAXLE CASE OIL SEAL

(a) Using SST, remove the manual transaxle case oil seal from the manual transaxle case.
SST 09612–65014 (09612–01040, 09612–01050)



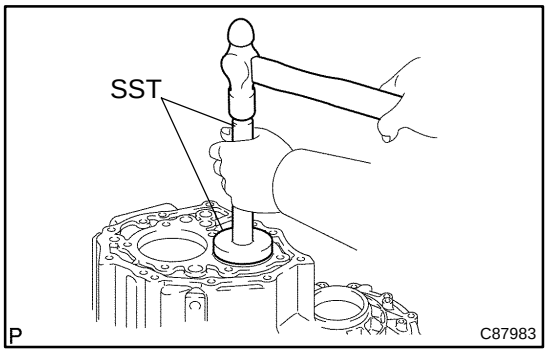
49. REMOVE OUTPUT SHAFT FRONT BEARING

(a) Using SST, remove the output shaft front bearing (outer race) from the manual transaxle case.
SST 09387–00041 (09387–02020, 09387–02010)



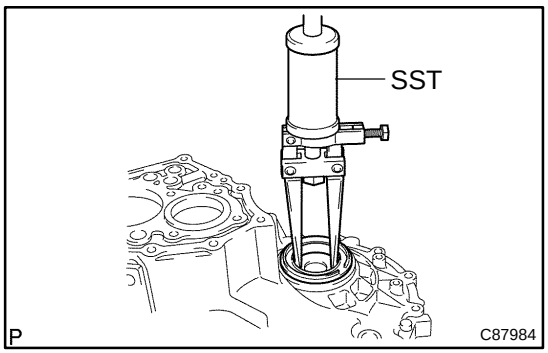
50. REMOVE OUTPUT SHAFT (MTM) COVER

(a) Remove the output shaft (MTM) cover from the manual transaxle case.



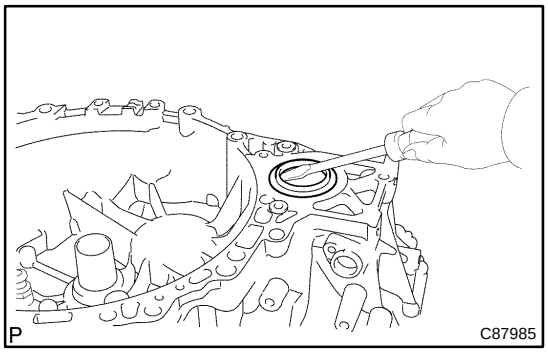
51. REMOVE OUTPUT SHAFT REAR BEARING

(a) Using SST, remove the output shaft rear bearing from the manual transmission case (outer race).
SST 09950–60010 (09951–00680), 09950–70010 (09951–07100)



52. REMOVE TRANSMISSION CASE OIL SEAL

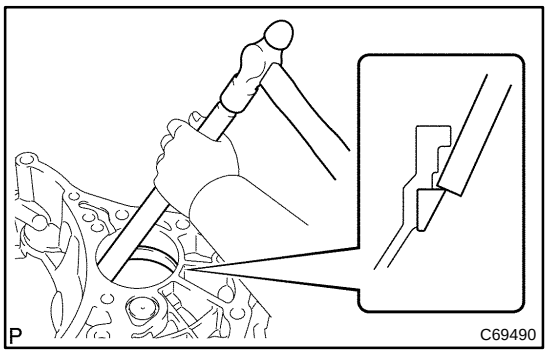
(a) Using SST, remove the transmission case oil seal from the manual transmission case.
SST 09308–00010



53. REMOVE FRONT TRANSAXLE CASE COVER OIL SEAL

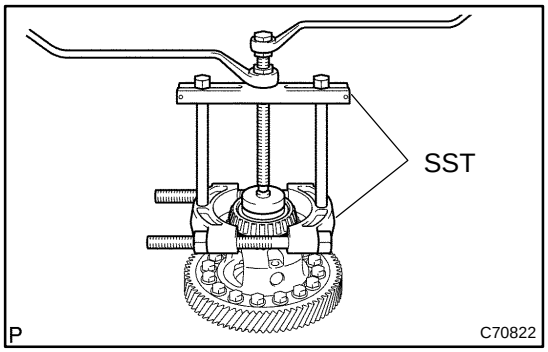
(a) Using a screwdriver, remove the front transaxle case cover oil seal.

HINT:
Tape the screwdriver tip before use.

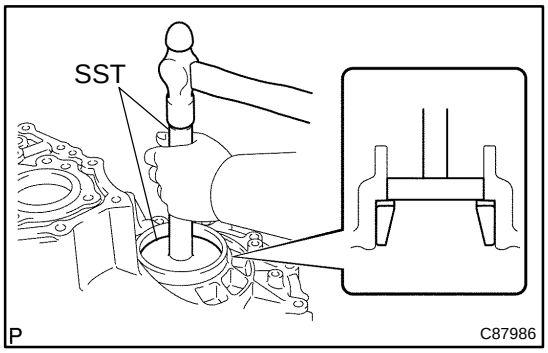


54. REMOVE FR DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

(a) Using a brass bar and a hammer, remove the FR differential case rear tapered roller bearing (outer race) from the manual transaxle case.

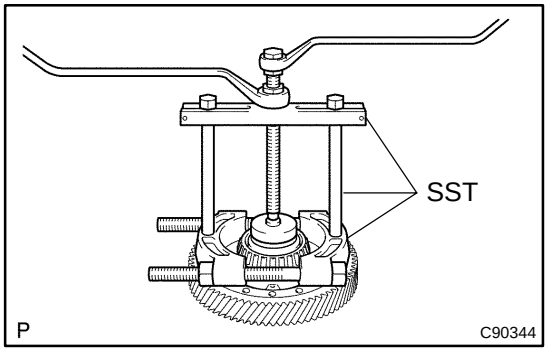


(b) Using SST, remove the front differential case rear tapered roller bearing from the front differential case.
SST 09950–00020, 09950–00030, 09950–40011 (09957–04010), 09950–60010 (09951–00560)

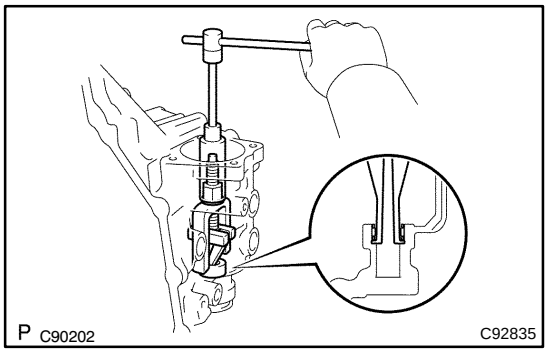


55. REMOVE FR DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

(a) Using SST and hammer, remove the FR differential case front tapered roller bearing (outer race) and FR differential case rear shim from the manual transmission case.
SST 09950–60020 (09951–00790), 09950–70010 (09951–07100)

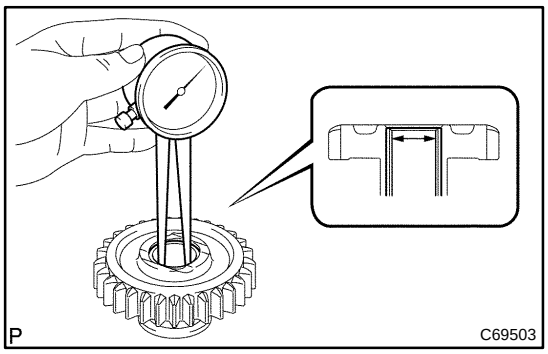


(b) Using SST, remove the FR differential case front tapered roller bearing (inner race) from front differential case.
SST 09950–00020, 09950–00030, 09950–40011 (09957–04010), 09950–60010 (09951–00490)



56. REMOVE CONTROL SHAFT COVER BIMETAL FORMED BUSH

(a) Using SST, remove the shift & select lever shaft bimetal formed bush.
SST 09319–60020



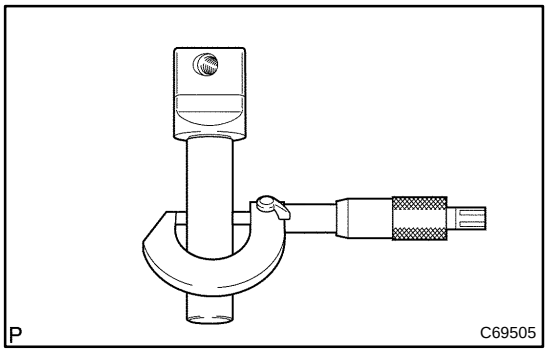
57. INSPECT REVERSE IDLER GEAR SUB–ASSY

(a) Using a callipers gauge, measure the inside diameter of the reverse idler gear.

Inside diameter: mm (in.)

Standard inside diameter	Maximum inside diameter
20.056 – 20.074 (0.7896 – 0.7903)	20.074 (0.7903)

If the inside diameter is exceeds than the maximum, replace the reverse idler gear.

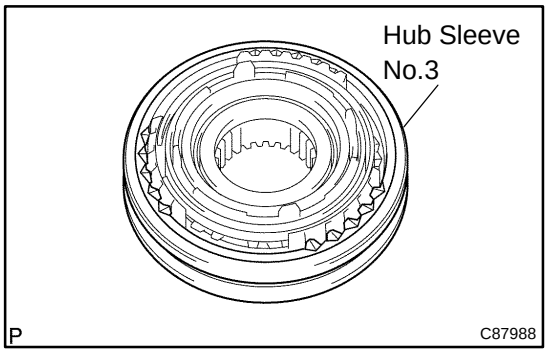


(b) Using a micro meter, measure the outer diameter of the reverse idler gear shaft.

Outer diameter: mm (in.)

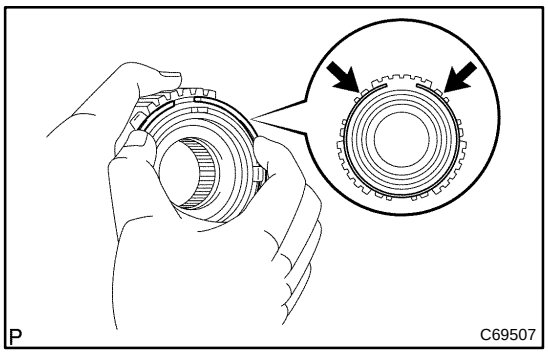
Standard outer diameter	Minimum outer diameter
19.984 – 20.000 (0.7868 – 0.7874)	19.984 (0.7868)

If the outer diameter is less than the minimum, replace the reverse idler gear shaft.



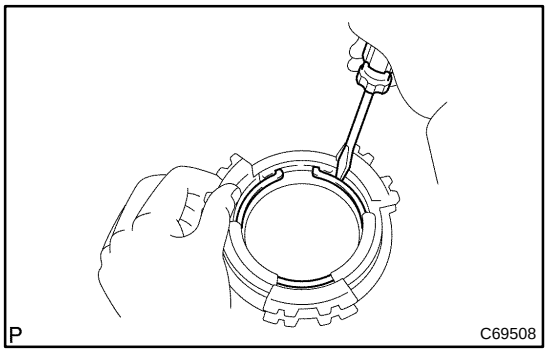
58. REMOVE TRANSMISSION HUB SLEEVE NO.3

(a) Remove the transmission hub sleeve No.3 from the transmission clutch hub No.3.



59. REMOVE SYNCHROMESH SHIFTING KEY SPRING NO.3

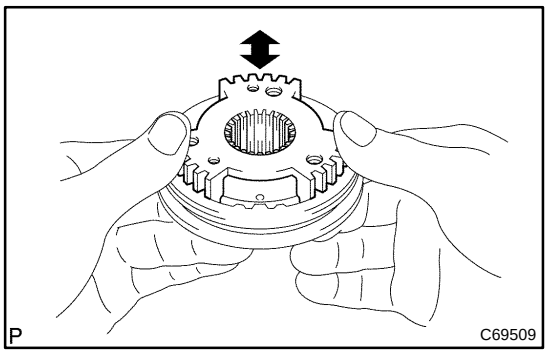
(a) Push the synchromesh shifting key spring No.3 then remove the 2 synchromesh shifting key spring No.3 from the transmission clutch hub No.3.



60. REMOVE SYNCHRONIZER PULL RING

(a) Using a screwdriver, remove the synchronizer pull ring snap ring.

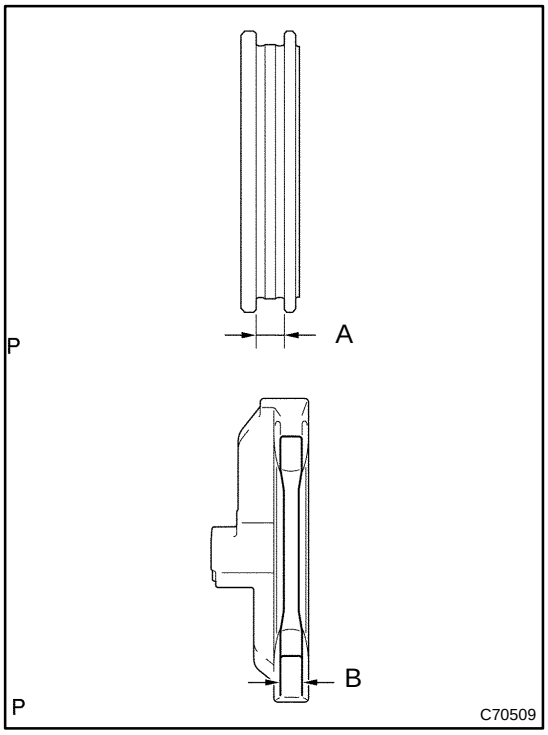
(b) Remove the synchronizer pull ring, synchronizer outer ring No.5, synchronizer inner ring No.5 and synchronizer middle ring No.5 from the synchronizer ring No.5.



61. INSPECT TRANSMISSION CLUTCH HUB NO.3

(a) Inspect the sliding condition between transmission clutch hub No.3 and transmission hub sleeve No.3.

(b) Inspect tip of spline gear on the transmission hub sleeve No.3 for wear.



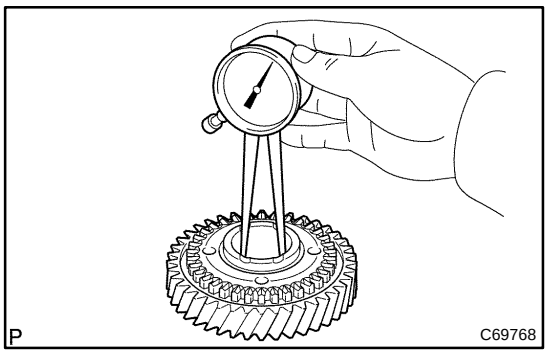
62. INSPECT TRANSMISSION HUB SLEEVE NO.3

(a) Using vernier calipers, measure the transmission hub sleeve No.3 groove and the thickness of the claw part on gear shift fork No.3, and calculate the clearance.

Standard clearance:

0.15 – 0.35 mm (0.0059 – 0.0138 in.) {A – B}

If the clearance is out of the specification, replace the transmission hub sleeve No.3 and gear shift fork No.3 with the new one.



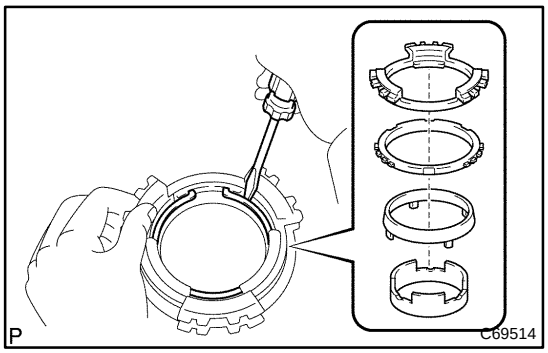
63. INSPECT 5TH GEAR

(a) Using a calipers gauge, measure the inside diameter of the 5th gear.

Inside diameter: mm (in.)

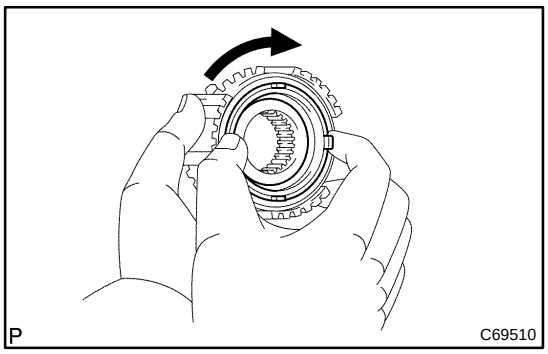
Standard inside diameter	Maximum inside diameter
34.981 – 34.997 (1.3772 – 1.3778)	34.997 (1.3778)

If the inner diameter is exceeds than the maximum, replace the 5th gear.



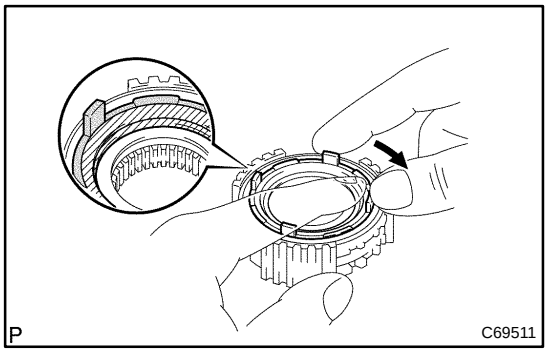
64. INSTALL SYNCHRONIZER PULL RING

(a) Install the synchronizer middle ring No.5, synchronizer ring outer No.5 and synchronizer pull ring to the synchronizer ring inner No.5. using a screwdriver, fix with snap ring.

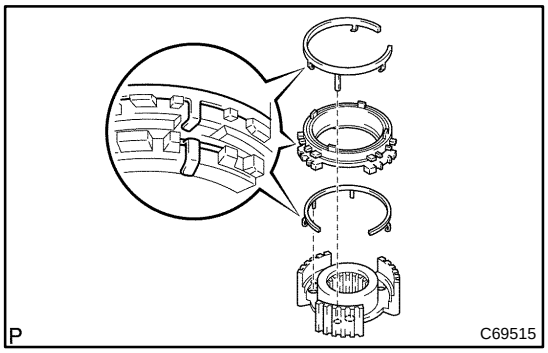


65. INSPECT SYNCHRONIZER RING MIDDLE NO.5

(a) Check that the synchronizer ring middle No.5 rotates smoothly.



(b) Check that the synchronizer ring middle No.5 does not rotate while it is being pushed to the clutch hub No.3.



66. INSTALL SYNCHROMESH SHIFTING KEY SPRING NO.3

(a) Install the synchromesh shifting key spring No.3 to the transmission clutch hub No.3.

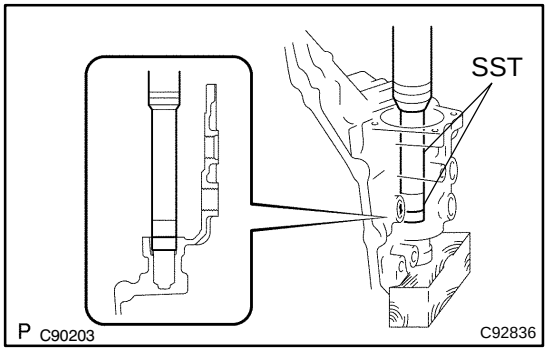
NOTICE:

Align the projection of the shifting key spring with the hole of the clutch hub No.3 and install them.

(b) Install the synchronizer ring set and synchromesh shifting key spring No.3 to the transmission clutch hub No.3.

NOTICE:

- **Engage the shifting key spring claw to the center of the teeth of the synchronizer ring.**
- **Align the projection of the shifting key spring with the hole of the clutch hub No.3 and install them.**



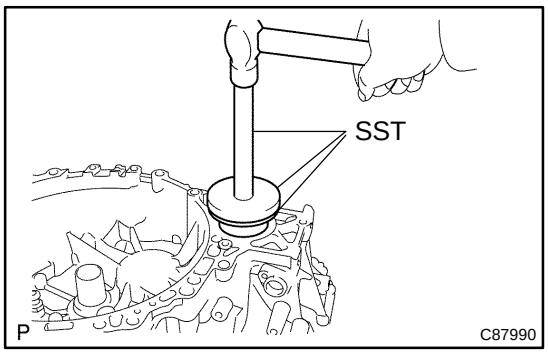
67. INSTALL CONTROL SHAFT COVER BIMETAL FORMED BUSH

(a) Using SST, install the shift & select lever shaft bimetal formed bush.

SST 09950–60010 (09951–00180), 09950–70010 (09951–07100)

Clearance:

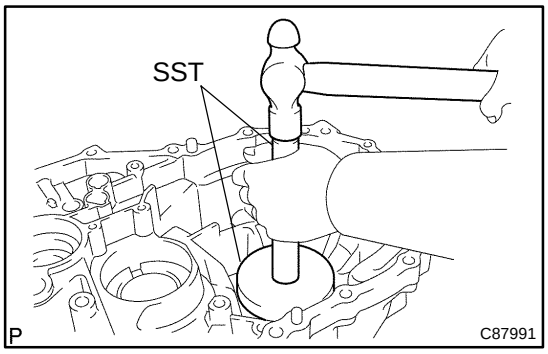
0.081 – 0.149 mm (0.0032 – 0.0059 in.)



68. INSTALL FRONT TRANSAXLE CASE COVER OIL SEAL

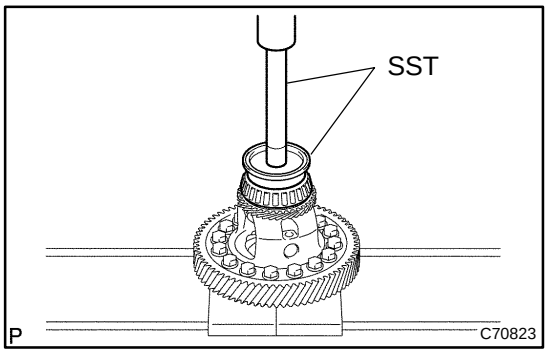
(a) Using SST and a hammer, install the front transaxle case cover oil seal.
SST 09316–20011, 09950–60020 (09951–00910), 09950–70010 (09951–07150)
Oil seal driven in depth:
0 ± 0.5 mm (0 ± 0.020 in.)

(b) Coat the lip of front transaxle case cover oil seal with MP grease.

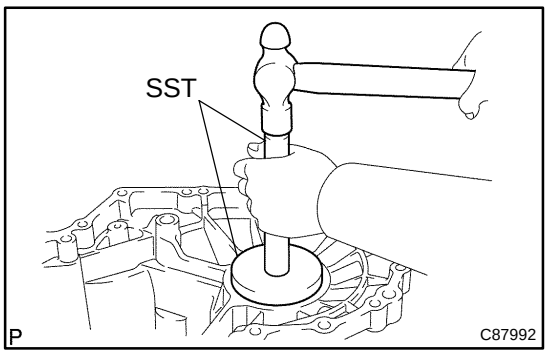


69. INSTALL FR DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

(a) Using SST and a hammer, install the FR differential case rear tapered roller bearing (outer race) to the front transaxle case.
SST 09950–60020 (09951–00910), 09950–70010 (09951–07100)



(b) Using SST and press, install the FR differential case rear tapered roller bearing (inner race) to the front differential case.
SST 09950–70010 (09951–07100, 09951–07150), 09608–10010

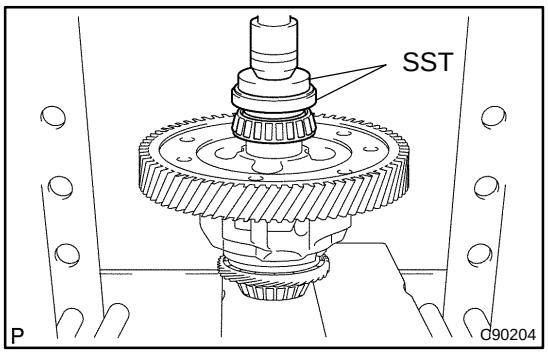


70. INSTALL FR DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

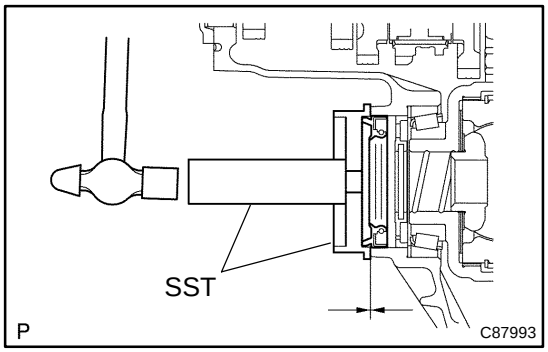
(a) Install the front differential case shim rear.

(b) Using SST and a hammer, install FR differential case front tapered roller bearing (outer race).
SST 09950–60020 (09951–00890), 09950–70010 (09951–07100)

NOTICE:
Install the case shim as thick as the removed one.



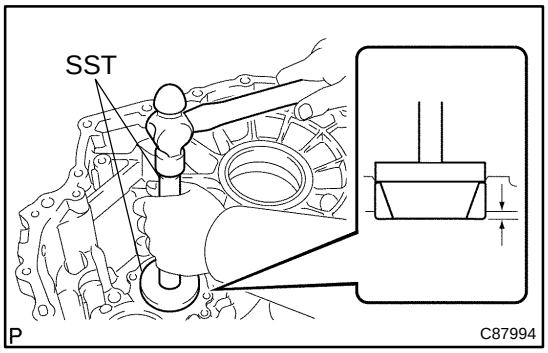
(c) Using SST, remove the FR differential case front tapered roller bearing (inner race)
SST 09631–12090, 09950–60010 (09951–00600), 09950–70010 (09951–07100)



71. INSTALL TRANSMISSION CASE OIL SEAL

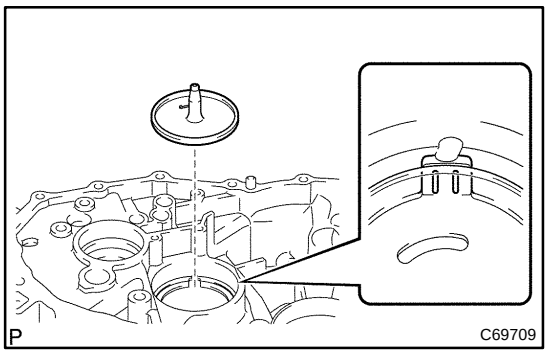
(a) Using SST and a hammer, install the transmission case oil seal to the manual transmission case.
SST 09608–32010, 09950–70010 (09951–07150)
Oil seal driven in depth:
3.5 ± 0.5 mm (0.138 ± 0.020 in.)

(b) Coat the lip of transmission case oil seal with MP grease.



72. INSTALL OUTPUT SHAFT REAR BEARING

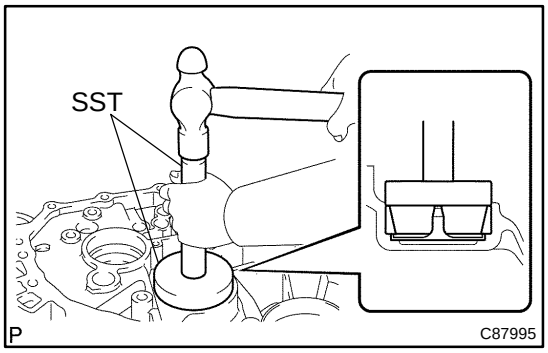
(a) Using SST and a hammer, install the output shaft rear bearing (outer race) to the manual transmission case.
SST 09950–60020 (09951–00680), 09950–70010 (09951–07100)
Clearance: 3.8 – 4.4 mm (0.150 – 0.173 in.)



73. INSTALL OUTPUT SHAFT (MTM) COVER

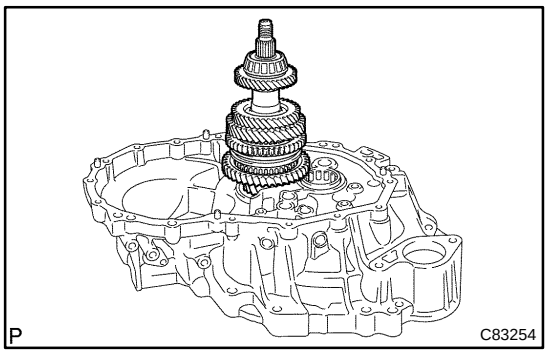
(a) Coat the output shaft (MTM) cover with MP grease, install it to the manual transaxle case.

NOTICE:
Align the projection of the output shaft with the transmission grooves and install them.



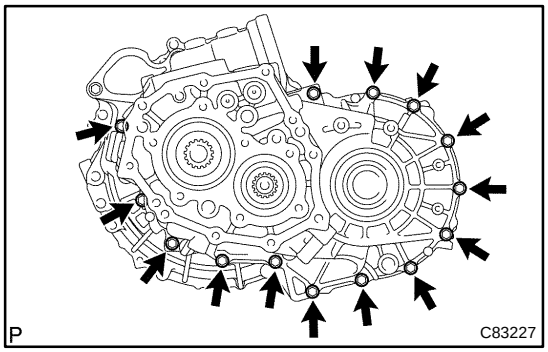
74. INSTALL OUTPUT SHAFT FRONT BEARING

(a) Using SST and a hammer, install the output shaft front bearing (outer race).
SST 09950–60020 (09951–00730), 09950–70010 (09951–07100)

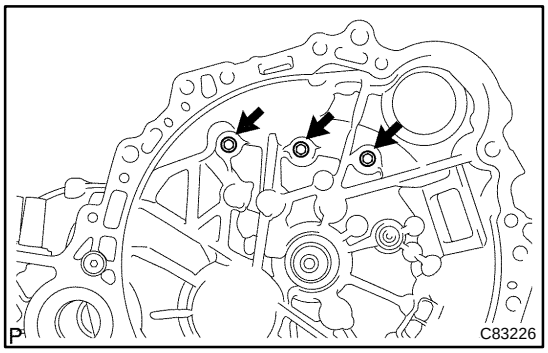


75. ADJUST OUTPUT SHAFT BEARING PRELOAD

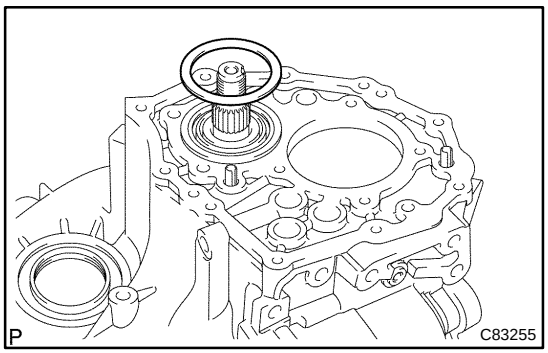
(a) Install the output shaft to the manual transaxle case.



(b) Install the transmission case with 14 bolts to the manual transaxle case.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)

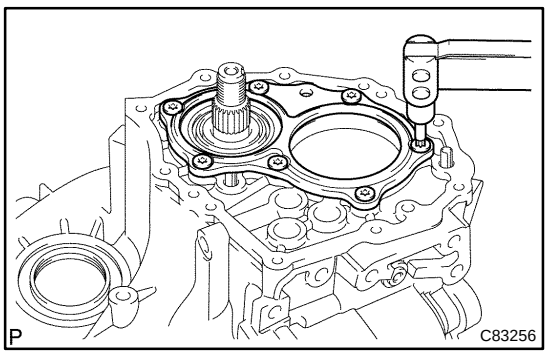


(c) Install the 3 bolts to the manual transaxle side.
Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)



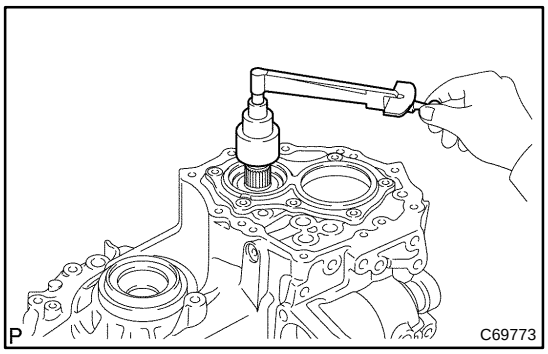
(d) Install the output shaft rear bearing shim to the output shaft.

HINT:
Install the same thickness of case shim as the removed one.



(e) Using a torx socket wrench (T45), install the bearing retainer RR with 7 screws to the manual transmission case.
Torque: 42 N·m (428 kgf·cm, 31 ft·lbf)

(f) Install the new output rear set nut to the output shaft.



(g) Turn the output shaft in both directions to make it smooth.

(h) Using a socket wrench and torque wrench, inspect the preload.

Preload: N·m (kgf·cm, in.·lbf)

Bearing	Torque
New	0.8 – 1.6 (8.16 – 16.32, 7.1 – 14.2)
Used	0.5 – 1.0 (5.10 – 10.20, 4.4 – 8.9)

(i) If the preload is out of the specification, select the output shaft rear bearing shim and adjust it.

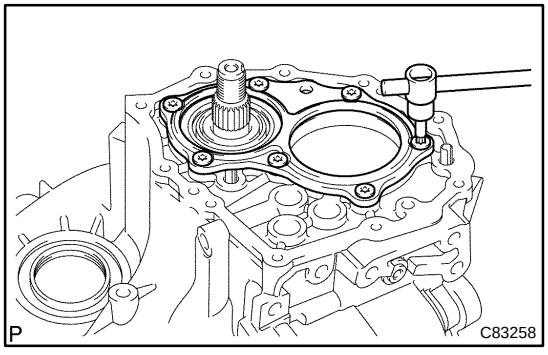
HINT:

The preload of the output shaft rear bearing shim varies in torque from about 0.04 to 0.06 N·m in one size.

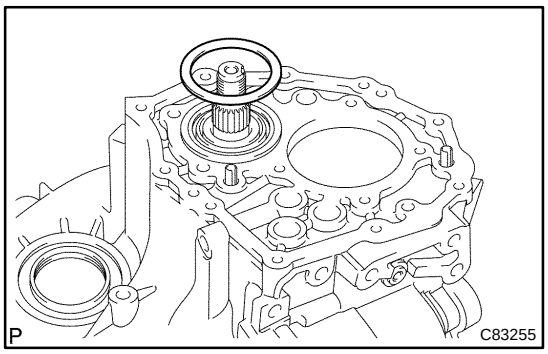
Shim: mm (in.)

Part No.	thickness: mm (in.)	Make
90564–59001	1.30 (0.0512)	0
90564–59002	1.35 (0.0531)	1
90564–59003	1.40 (0.0551)	2
90564–59004	1.45 (0.0571)	3
90564–59005	1.50 (0.0591)	4
90564–59006	1.55 (0.0610)	5
90564–59007	1.60 (0.0630)	6
90564–59008	1.65 (0.0650)	7
90564–59009	1.70 (0.0669)	8
90564–59010	1.75 (0.0689)	9
90564–59011	1.80 (0.0709)	A
90564–59012	1.85 (0.0728)	B
90564–59013	1.90 (0.0748)	C
90564–59014	1.95 (0.0768)	D
90564–59015	2.00 (0.0787)	E
90564–59016	2.05 (0.0807)	F
90564–59017	2.10 (0.0827)	G
90564–59018	2.15 (0.0846)	H
90564–59019	2.20 (0.0866)	J
90564–59020	2.25 (0.0886)	K
90564–59021	2.30 (0.0906)	L
90564–59022	2.35 (0.0925)	M
90564–59023	2.40 (0.0945)	N
90564–59024	2.45 (0.0965)	P
90564–59025	2.50 (0.0984)	Q

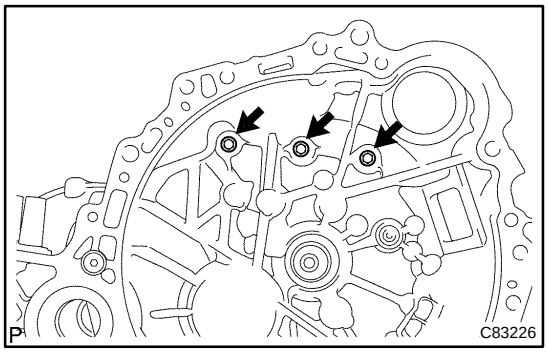
(j) Remove the output shaft rear set nut from the output shaft.



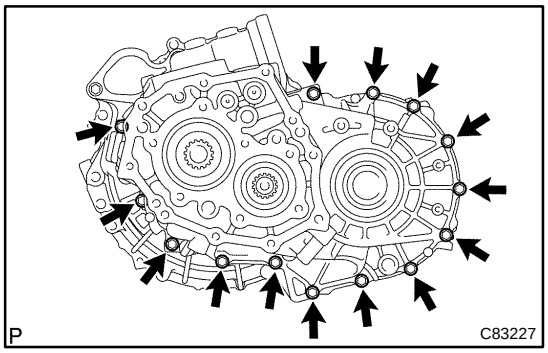
(k) Using a torx socket wrench (T45), remove the 7 screws and bearing retainer RR from the manual transmission case.



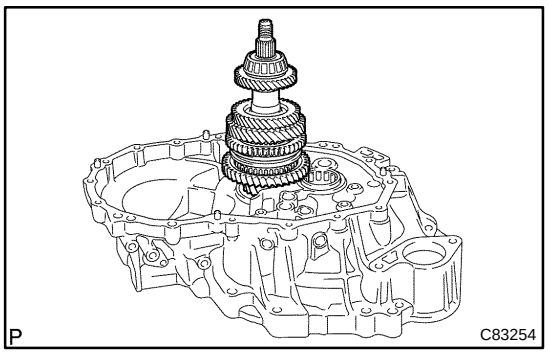
(l) Remove the output shaft rear bearing shim from the output shaft.



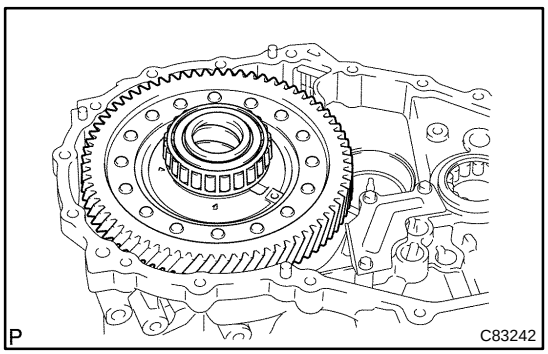
(m) Remove the 3 bolts.



(n) Remove the 14 bolts and manual transmission case from the manual transaxle case.

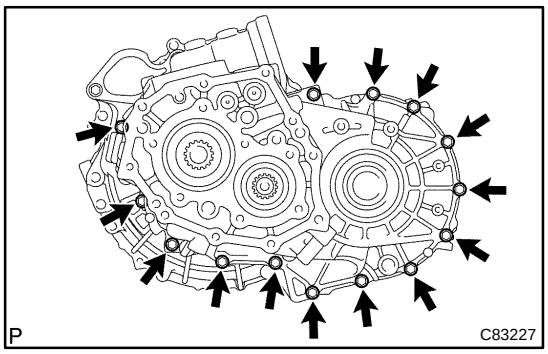


(o) Remove the output shaft assy from the front manual transaxle case.

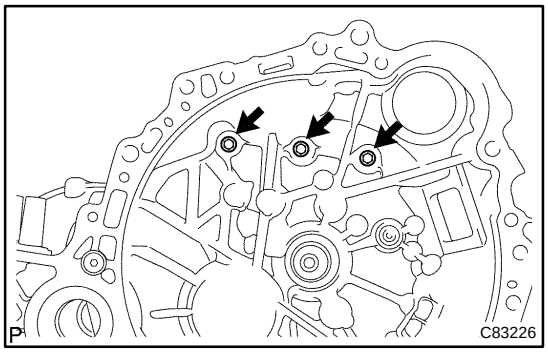


76. ADJUST TAPERED POLLER BEARING PRELOAD

(a) Install differential case assy to the manual transaxle case.

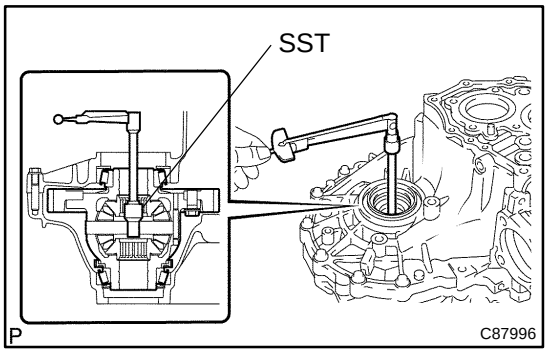


(b) Install the 14 bolts and manual transmission case to the manual transaxle case.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)



(c) Install the 3 bolts and front manual transaxle case side.
Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)

(d) Turn the differential case in both directions to make it smooth.



(e) Using SST and torque wrench, inspect preload.
SST 09564–32011

Preload: N·m (kgf·cm, in.·lbf)

Bearing	Torque
New	0.8 – 1.6 (8.16 – 16.32, 7.1 – 14.2)
Used	0.5 – 1.0 (5.10 – 10.2, 4.4 – 8.9)

If the preload is out of the specification, select the front differential case shim RR and adjust it.

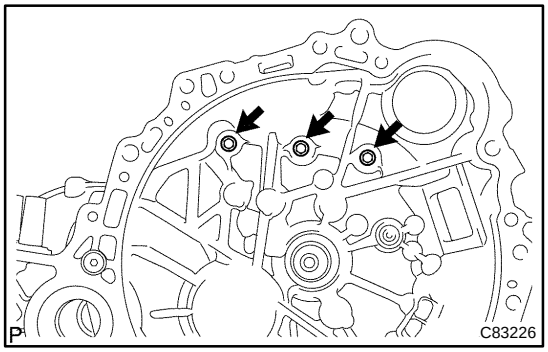
HINT:

The preload of the front differential case shim RR varies in torque from about 0.04 to 0.06 N·m is one size.

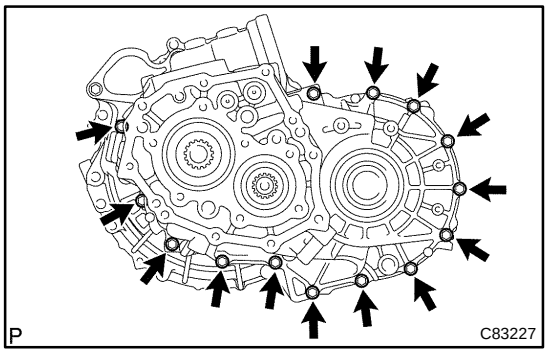
Shim: mm (in.)

Part No.	Thickness	Mark
90564–56055	2.00 (0.0787)	0
90564–56056	2.05 (0.0807)	1
90564–56057	2.10 (0.0827)	2
90564–56058	2.15 (0.0846)	3
90564–56059	2.20 (0.0866)	4
90564–56060	2.25 (0.0886)	5
90564–56061	2.30 (0.0906)	6
90564–56062	2.35 (0.0925)	7
90564–56063	2.40 (0.0945)	8
90564–56064	2.45 (0.0965)	9
90564–56065	2.50 (0.0984)	A
90564–56066	2.55 (0.1004)	B
90564–56067	2.60 (0.1024)	C
90564–56068	2.65 (0.1043)	D
90564–56069	2.70 (0.1063)	E
90564–56070	2.75 (0.1083)	F

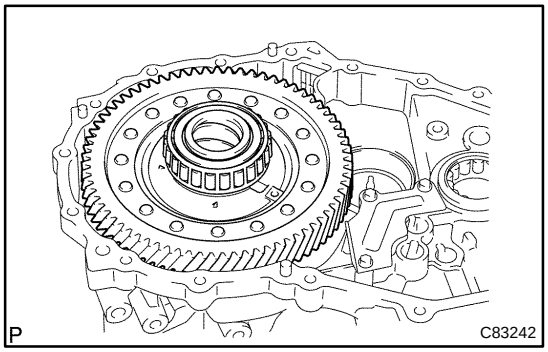
Part No.	Thickness	Mark
90564–56071	2.80 (0.1102)	G
90564–56072	2.85 (0.1122)	H



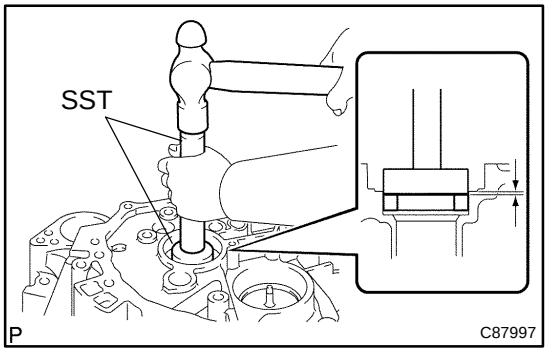
(f) Remove the 3 bolts.



(g) Remove the 14 bolts and manual transmission case to the manual transaxle case.



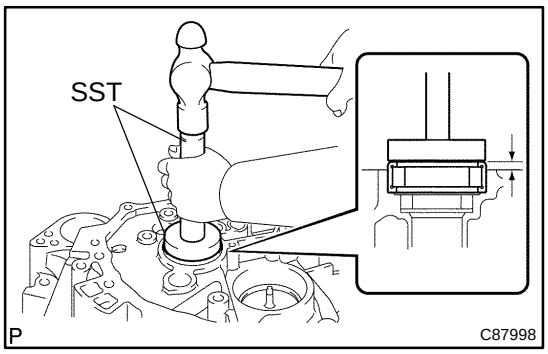
(h) Remove the differential case assy from the manual transaxle case.



77. INSTALL FRONT TRANSAXLE CASE OIL SEAL

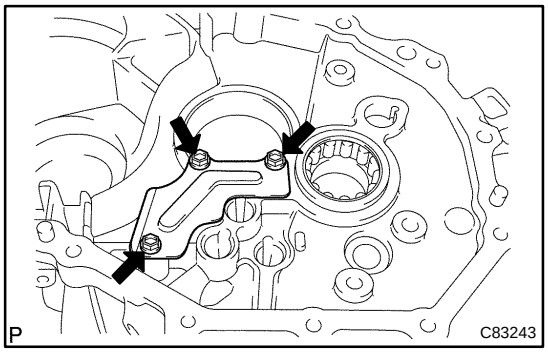
(a) Using SST and a hammer, install the front transaxle case oil seal No.1 to the manual transaxle case.
SST 09950–60010 (09951–00420), 09950–70010 (09951–07150)

(b) Coat the lip of front transaxle case oil seal No.1 with MP grease.
Clearance: 1 – 2 mm (0.0394 – 0.0787 in.)



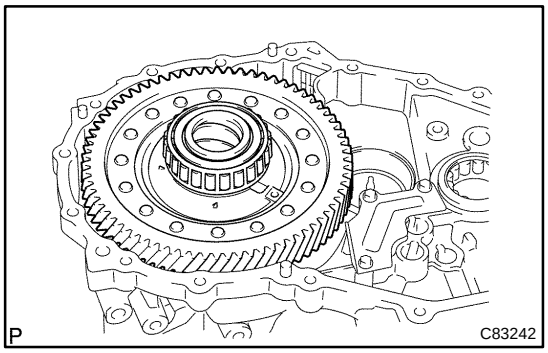
78. INSTALL INPUT SHAFT FRONT BEARING

(a) Coat the input shaft front bearing with gear oil, install it to the manual transaxle case.
SST 09950–60010 (09951–00570), 09950–70010 (09951–07150)
Clearance: 4.28 – 4.60 mm (0.1685 – 0.1811 in.)



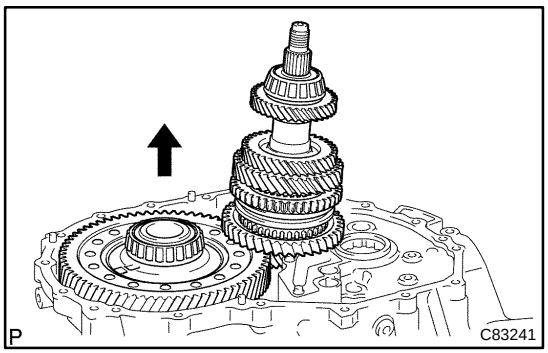
79. INSTALL MANUAL TRANSAXLE CASE RECEIVER

(a) Install the 3 bolts and manual transaxle case receiver to the manual transaxle case.
Torque: 7.0 N·m (71 kgf·cm, 62 in.·lbf)



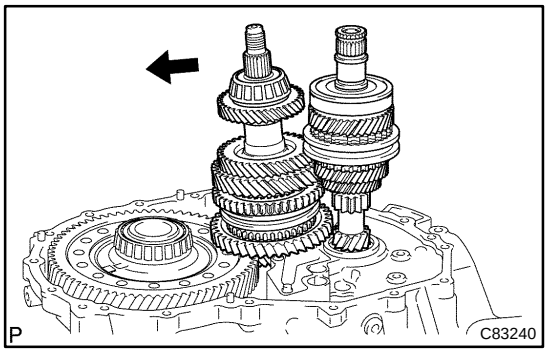
80. INSTALL DIFFERENTIAL CASE ASSY

(a) Coat the differential case taper roller bearing with gear oil, install the differential case assy to the manual transaxle case.



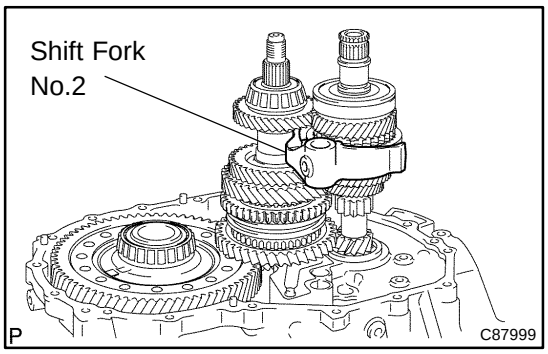
81. INSTALL OUTPUT SHAFT ASSY

(a) Apply gear oil to each sliding part of the output shaft assy.
(b) Lift the differential case assy up with the output shaft assy leaned, and install it to the manual transaxle case.



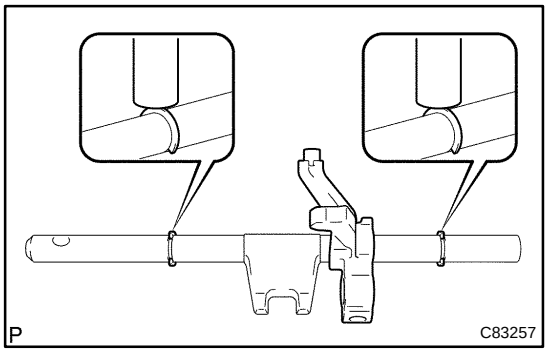
82. INSTALL INPUT SHAFT ASSY

(a) Apply gear oil to each sliding part of the input shaft assy.
(b) With the output shaft assy leaned, install the input shaft assy to the manual transaxle case.



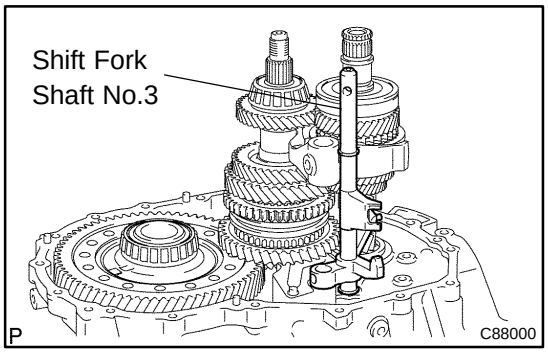
83. INSTALL GEAR SHIFT FORK NO.2

(a) Coat the gear shift fork No.2 with gear oil, install it to the input shaft assy.

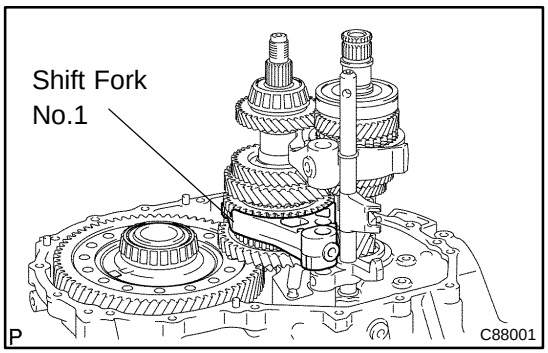


84. INSTALL GEAR SHIFT FORK NO.3

(a) Install the gear shift fork No.3 to the gear shift fork shaft No.3.
(b) Using a brass bar and hammer, install the 2 shift fork shaft snap rings to the gear shift fork shaft.

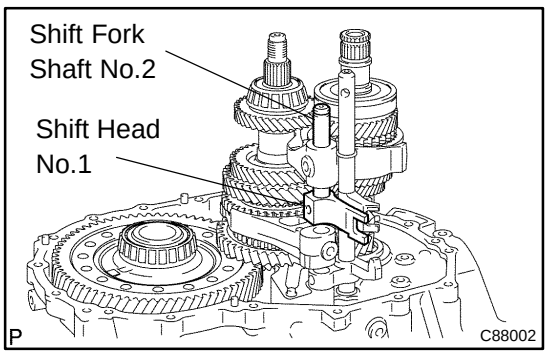


(c) Apply gear oil to each sliding part of the gear shift fork shaft No.3, install it to the manual transaxle case.



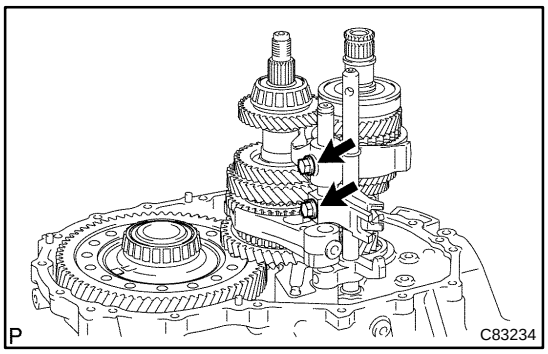
85. INSTALL GEAR SHIFT FORK NO.1

(a) Apply gear oil to each sliding part of the gear shift fork No.1, install it to the output shaft assy.

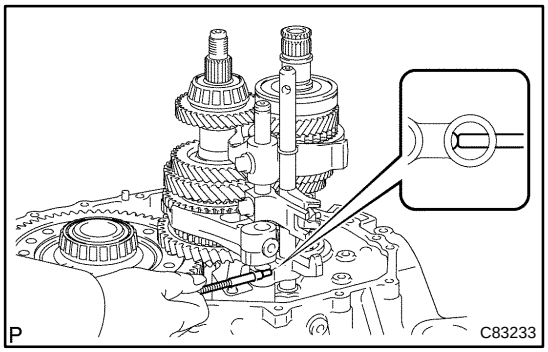


86. INSTALL GEAR SHIFT FORK SHAFT NO.2

(a) Install the gear shift head No.1 to the gear shift fork shaft No.2.
(b) Apply gear oil to each sliding part of the gear shift fork shaft No.2, install it to the manual transaxle case.

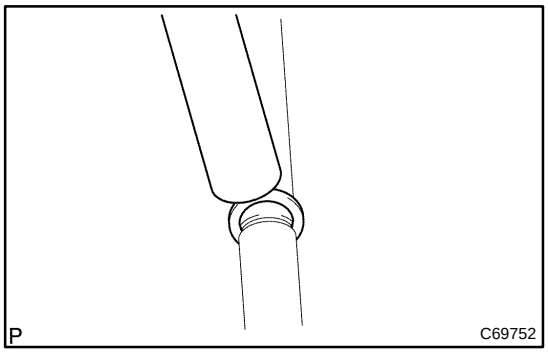


(c) Install the 2 shift fork bolts to the gear shift head No.1.
Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)



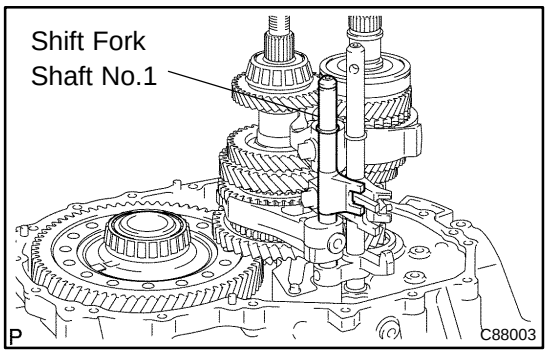
87. INSTALL REVERSE SHIFT FORK ROLLER

(a) Using a magnetic finger, install the reverse shift fork roller to the reverse shift fork.

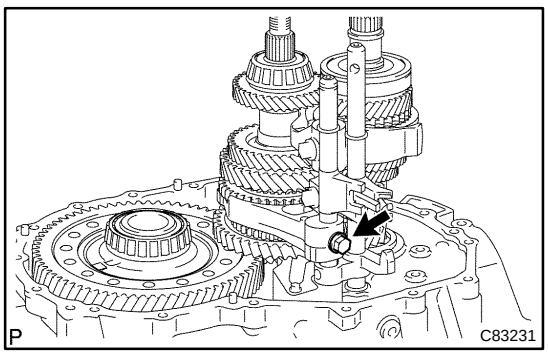


88. INSTALL GEAR SHIFT FORK SHAFT NO.1

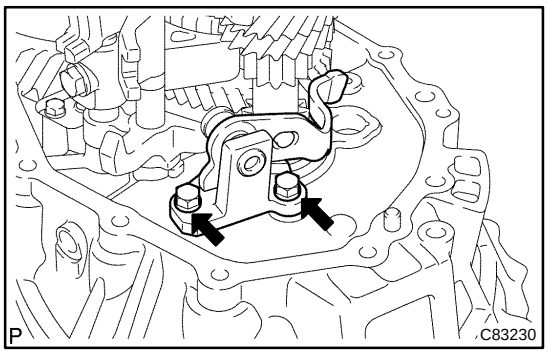
(a) Using a brass bar and hammer, install the shift fork shaft snap ring to the shift fork shaft No.1.



(b) Install the gear shift fork shaft No.1 to the manual transaxle case.

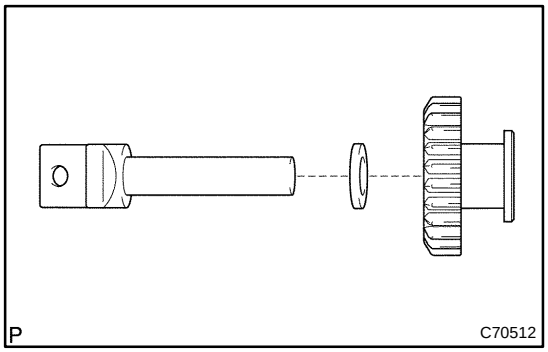


(c) Install the shift fork bolt to the gear shift fork No.1.
Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)



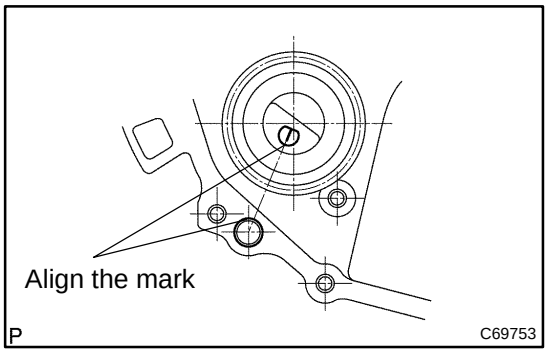
89. INSTALL REVERSE SHIFT ARM BRACKET ASSY

(a) Install the 2 bolts and reverse shift arm bracket assy to the manual transaxle case.
Torque: 17 N·m (173 kgf·cm, 13 ft·lbf)

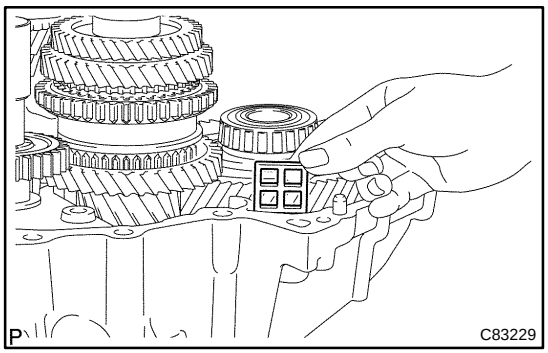


90. INSTALL REVERSE IDLER GEAR SUB–ASSY

(a) Coat the reverse idler gear and reverse idler thrust washer with MP grease, install them to the reverse idler gear shaft.

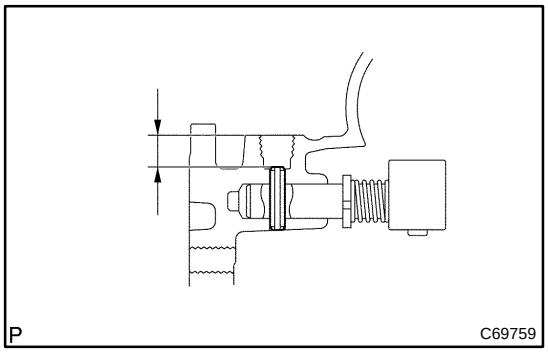


(b) Install the reverse idler gear to the manual transaxle case.
HINT:
Align the mark of the reverse idler gear shaft with the hole of the bolt.



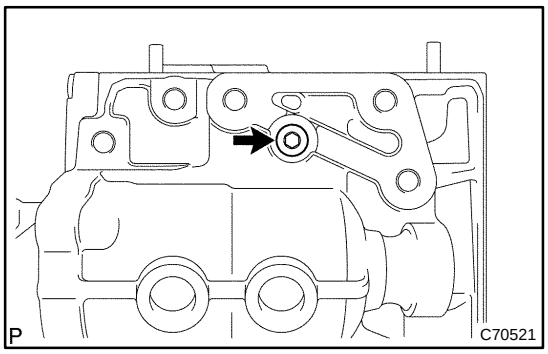
91. INSTALL TRANSMISSION MAGNET

(a) Clean the transmission magnet, install it to the manual transaxle case.

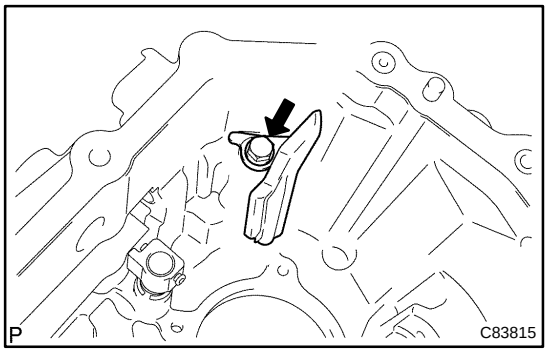


92. INSTALL REVERSE RESTRICT PIN ASSY

(a) Using a pin punch (ϕ 5mm), install the reverse restrict pin and reverse restrict pin assy.
Clearance: 12.5 – 13.5 mm (0.492 – 0.531 in.)



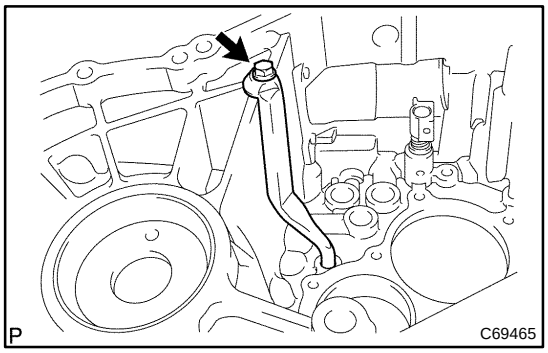
(b) Coat the reverse restrict pin plug with adhesive 1324, using hexagon wrench (6mm), install the manual transmission case.
Torque: 13 N·m (133 kgf·cm, 9.6 ft·lbf)



93. INSTALL OIL RECEIVER PIPE NO.1 (MTM)

(a) Install the bolt and oil receiver pipe No.1 (MTM) to the manual transmission case.
Torque: 17 N·m (173 kgf·cm, 13 ft·lbf)

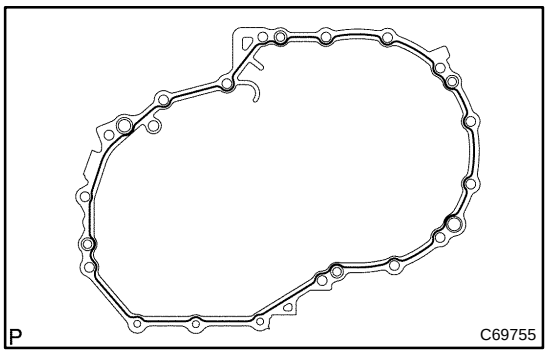
HINT:
Tighten the oil receiver pipe No.1 with the bolt.



94. INSTALL OIL RECEIVER PIPE NO.2 (MTM)

(a) Install the bolt and oil receiver pipe No.2 (MTM) to the manual transmission case.
Torque: 17 N·m (173 kgf·cm, 13 ft·lbf)

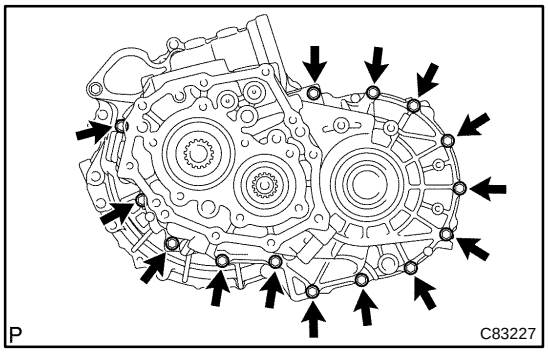
HINT:
Tighten the oil receiver pipe No.2 (MTM) with the bolt while manual transmission case is being put.



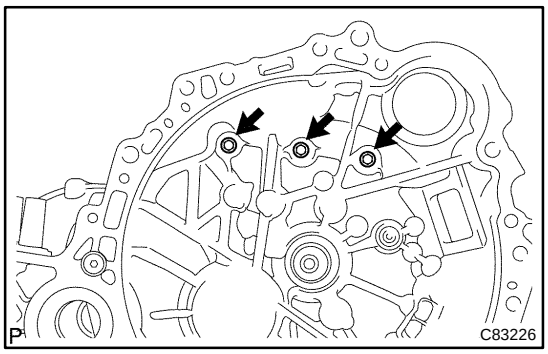
95. INSTALL MANUAL TRANSMISSION CASE

(a) Apply FIPG bead condition sequentially to the position shown in the diagram of the manual transmission case.

HINT:
Install within 10 minutes after applying FIPG.



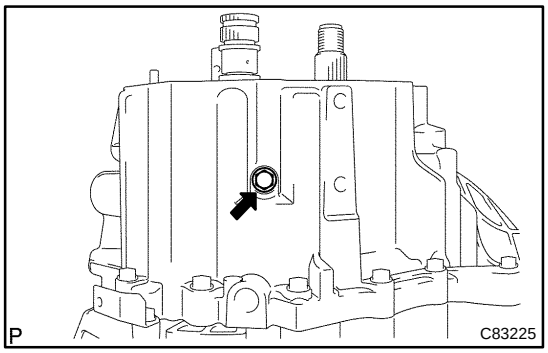
(b) Install the manual transmission case and 14 bolts to the manual transaxle case.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)



(c) Install the 3 bolts to the manual transaxle case side.
Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)

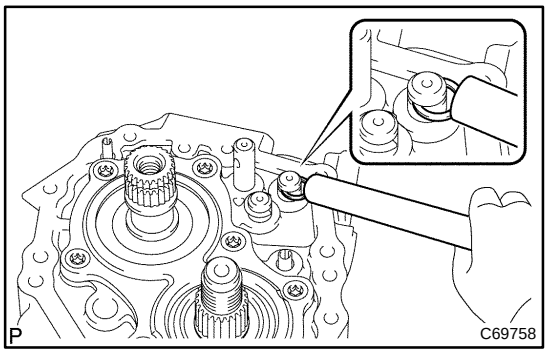
96. INSTALL CLUTCH TUBE BRACKET NO.1

(a) Install the clutch tube with 3 bolt brackets.
Torque: 17 N·m (173 kgf·cm, 13 ft·lbf)



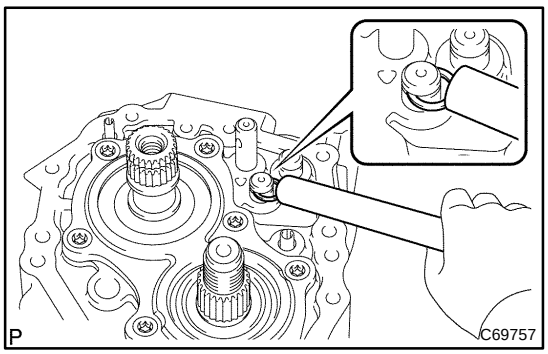
97. INSTALL REVERSE IDLER GEAR SHAFT BOLT

(a) Coat the bolt with sealant, install new gasket to the manual transmission case with the bolt.
Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)
Sealant:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent

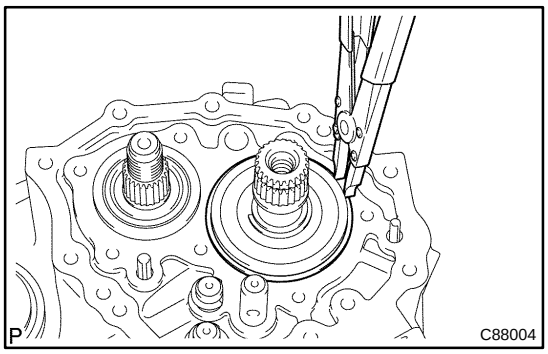


98. INSTALL SHIFT FORK SHAFT SHAFT SNAP RING

(a) Using a brass bar and hammer, install the shift fork shaft snap ring to the gear shift fork shaft No.1.

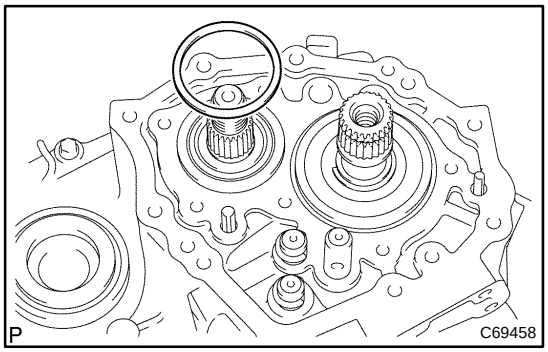


(b) Using a brass bar and hammer, install the shift fork shaft snap ring to the gear shift fork shaft No.2.



99. INSTALL INPUT SHAFT REAR BEARING SHAFT SNAP RING

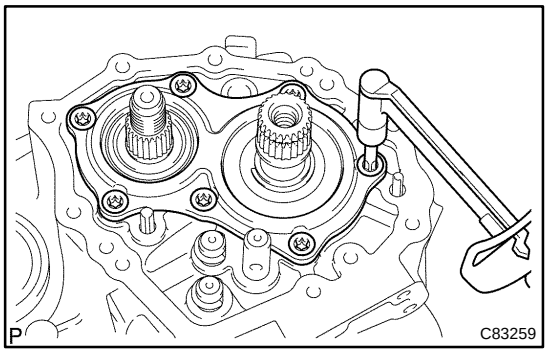
(a) Using a snap ring expander, install the input shaft rear bearing hole snap ring.



100. INSTALL OUTPUT SHAFT REAR BEARING SHIM

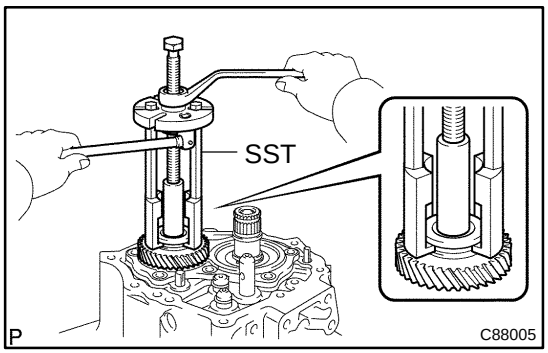
(a) Install the output shaft rear bearing shim to the output shaft.

HINT:
Install the same thickness of the case shim as the remove one.



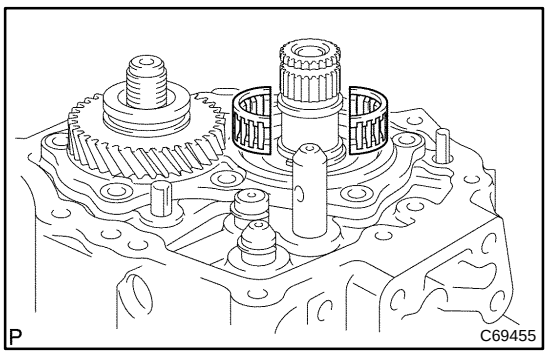
101. INSTALL BEARING RETAINER REAR (MTM)

(a) Coat the bearing retainer rear (MTM) with sealant, install it with a torx wrench (T45).
Torque: 42 N·m (428 kgf·cm, 31 ft·lbf)



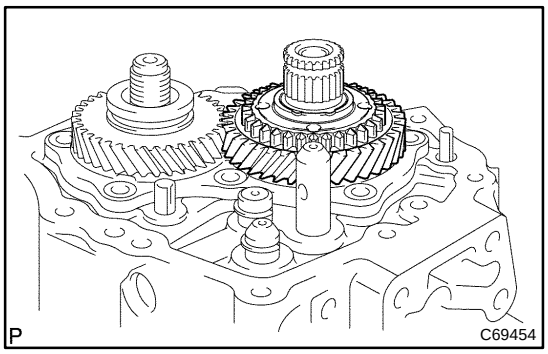
102. INSTALL 5TH DRIVEN GEAR

(a) Using SST, install the 5th driven gear to the output shaft.
SST 09950–30012 (09951–03010, 09953–03010, 09954–03010, 09956–03030, 09955–03011)



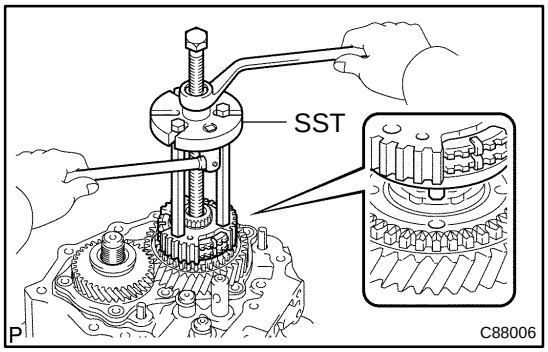
103. INSTALL 5TH GEAR NEEDLE ROLLER BEARING

(a) Coat the 5th gear needle roller bearing with gear oil, install it to the input shaft.



104. INSTALL 5TH GEAR

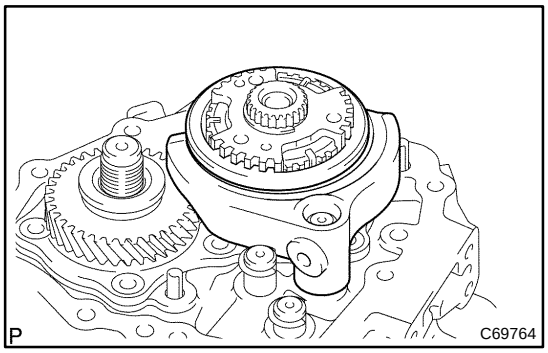
(a) Coat the 5th gear with gear oil, install it to the input shaft.



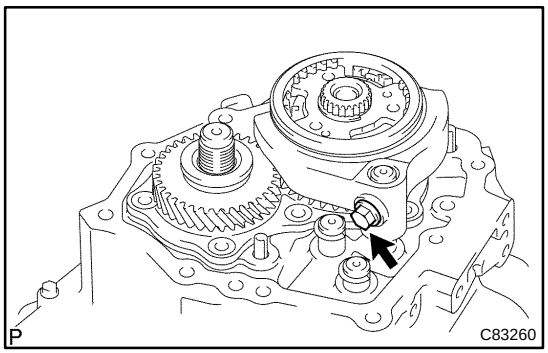
105. INSTALL TRANSMISSION CLUTCH HUB NO.3

(a) Using SST, install the transmission clutch hub No.3 to the input shaft.
SST 09950–30012 (09951–03010, 09953–03010, 09954–03010)

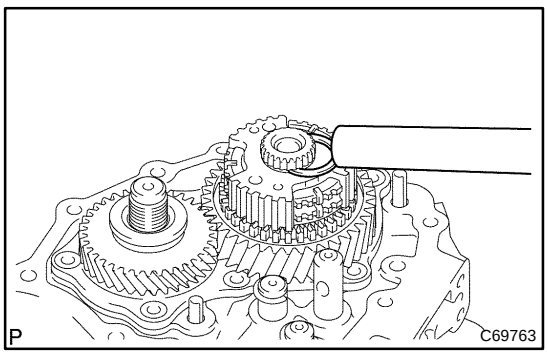
NOTICE:
Align the projection of the synchronizer ring with the hole of the 5th gear and install them.



(b) Install the transmission hub sleeve No.3 and gear shift fork No.3 to the transmission clutch hub No.3.



(c) Coat the shift fork bolt with sealant, install the gear shift fork No. 3.
Sealant:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)

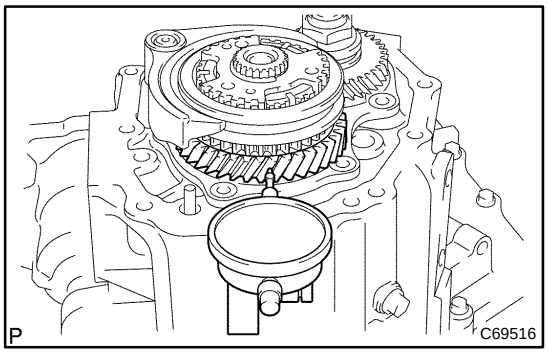


(d) Select a snap ring that will allow minimum axial play. Using a brass bar and a hammer, install the shaft snap ring.
Clearance: 0.1 mm or less

Snap ring: mm (in.)

Part No.	Thickness	Mark
90520–27061	1.75 – 1.80 (0.0689 – 0.0709)	a
90520–27062	1.80 – 1.85 (0.0709 – 0.0728)	b

Part No.	Thickness	Mark
90520–27063	1.85 – 1.90 (0.0728 – 0.0748)	c
90520–27064	1.90 – 1.95 (0.0748 – 0.0768)	d
90520–27065	1.95 – 2.00 (0.0768 – 0.0787)	e
90520–27066	2.00 – 2.05 (0.0787 – 0.0807)	f
90520–27067	2.05 – 2.10 (0.0807 – 0.0827)	g
90520–27068	2.10 – 2.15 (0.0827 – 0.0846)	h
90520–27069	2.15 – 2.20 (0.0846 – 0.0866)	j

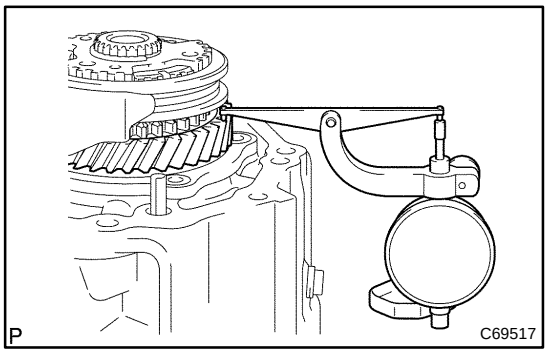


106. INSPECT 5TH GEAR RADIAL CLEARANCE

(a) Using a dial indicator, inspect the 5th gear radial clearance.

Standard clearance:
0.009 – 0.050 mm (0.0004 – 0.0020 in.)

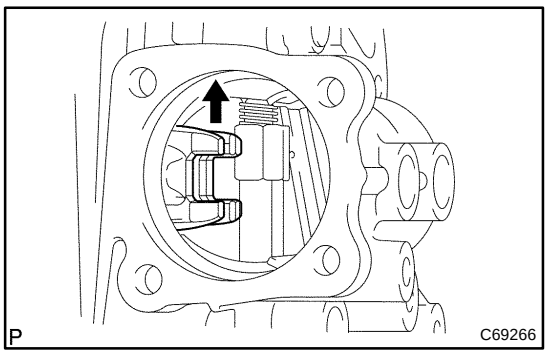
If the clearance is out of the specification, replace 1st gear needle roller bearing.



107. INSPECT 5TH GEAR THRUST CLEARANCE

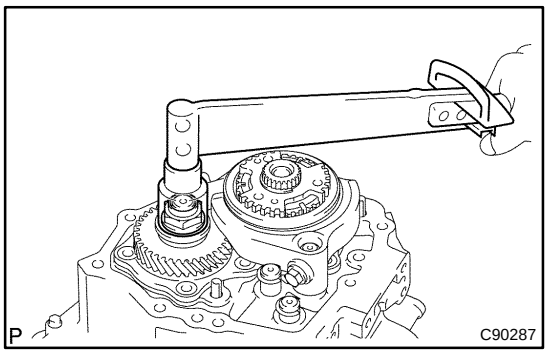
(a) Using a dial indicator, inspect the 5th gear thrust clearance.

Standard clearance:
0.10 – 0.65 mm (0.0039 – 0.0260 in.)

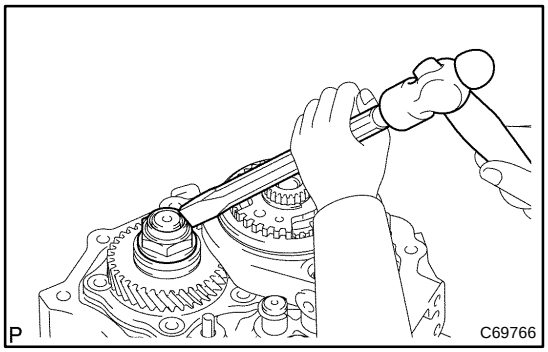


108. INSTALL MANUAL TRANSMISSION OUTPUT SHAFT REAR SET NUT

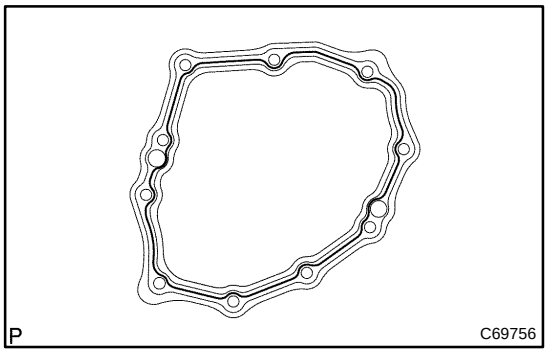
(a) Engage the gear double meshing.



(b) Install the new manual transmission output shaft rear set nut.
Torque: 123 N·m (1,254 kgf·cm, 91 ft·lbf)



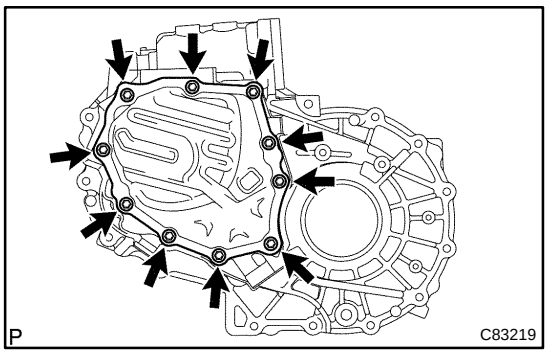
(c) Using a chisel and a hammer, stake the manual transmission output shaft rear set nut.



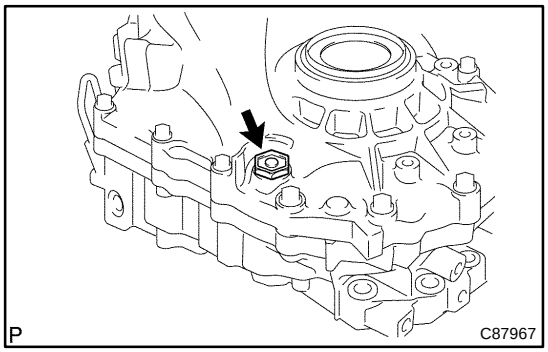
109. INSTALL MANUAL TRANSMISSION CASE COVER SUB–ASSY

(a) Apply FIPG to the transaxle case cover sub–assy, as shown in the installation.
FIPG:
Part No. 08826–00090, THREE BOND 1281

NOTICE:
Install the parts within 10 minutes after applying the packing material (FIPG).

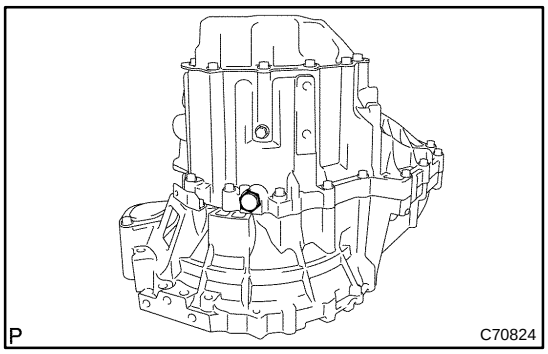


(b) Install the transmission case cover sub–assy with 10 bolts to the manual transaxle case.



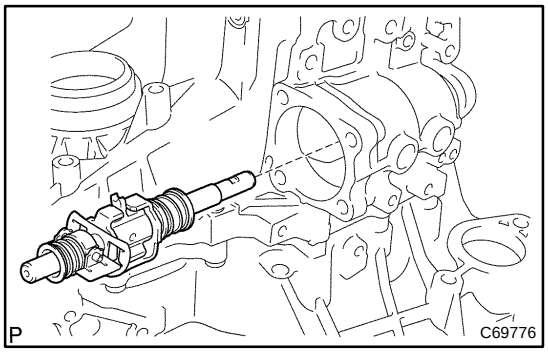
110. INSTALL DRAIN (MTM) PLUG SUB–ASSY

(a) Install the drain plug sub–assy with new gasket to the manual transmission case.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)



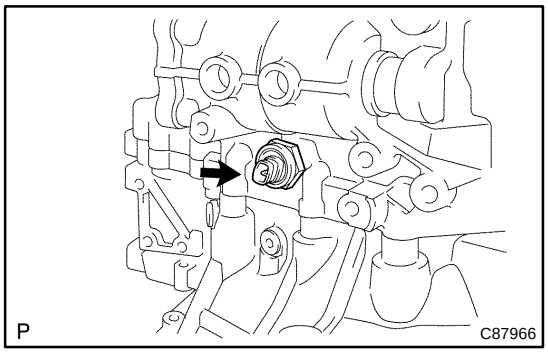
111. INSTALL MANUAL TRANSMISSION FILLER PLUG

(a) Install the manual transmission filler plug with new gasket to the oil seal.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)



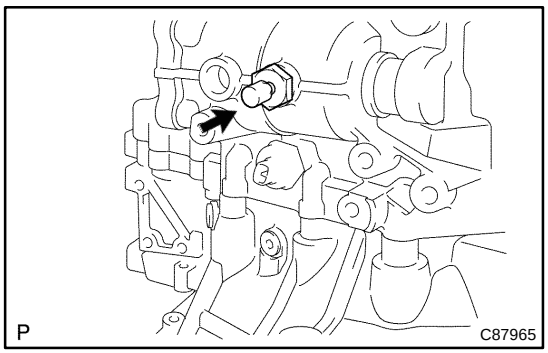
112. INSTALL SHIFT & SELECT LEVER SHAFT ASSY

(a) Coat the shift & select lever shaft assy with gear oil, install it to the manual transmission case.



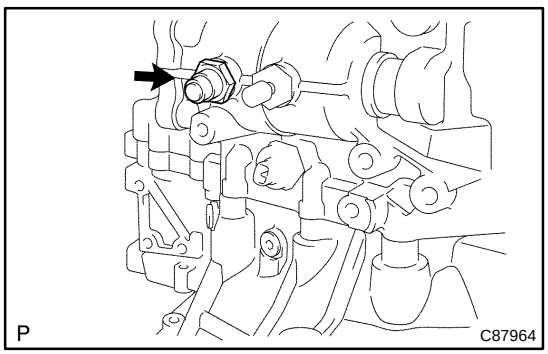
113. INSTALL BACK UP LAMP SWITCH ASSY

(a) Install back up lamp switch assy to the manual transmission case.
Torque: 40 N·m (408 kgf·cm, 30 ft·lbf)



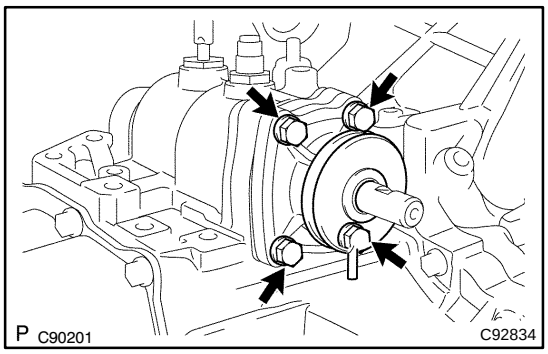
114. INSTALL MANUAL TRANSMISSION BREATHER PLUG

(a) Install the new gasket with manual transmission breather plug to the manual transmission case.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)



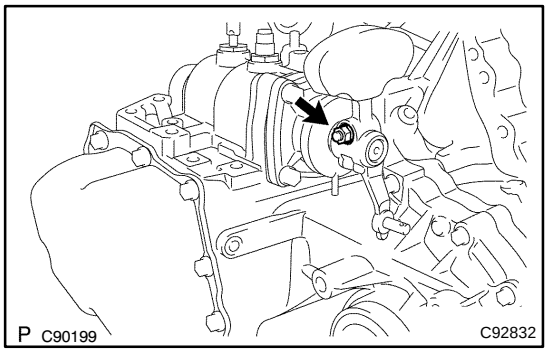
115. INSTALL LOCK BALL ASSY NO.1

(a) Install the lock ball assy No.1 to the manual transmission case.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)



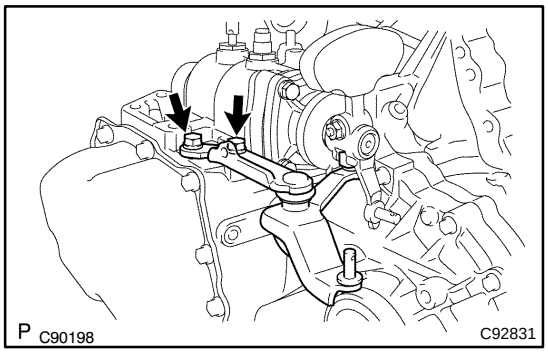
116. INSTALL CONTROL SHAFT COVER

(a) Coat the 4 bolts with sealant, install new gasket with control shaft cover with the bolt.
Sealant:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)



117. INSTALL CONTROL SHIFT LEVER

(a) Install the control shift lever with shift outer lock pin to the shift & select lever shaft.
(b) Install the spring washer with nat.
Torque: 6.4 N·m (65 kgf·cm, 57 in.·lbf)



118. INSTALL SELECTING BELL CRANK ASSY

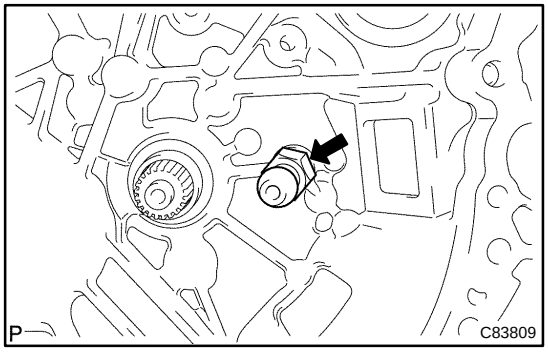
(a) Coat the 2 bolts with sealant, install it with selecting bell crank assy to the manual transmission case.
Sealant:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)

119. INSTALL SPEEDOMETER DRIVEN HOLE COVER SUB–ASSY

(a) Install the bolt and speedometer driven hole cover sub–assy to the transmission case.

120. INSTALL CLUTCH RELEASE FORK BOOT

(a) Install the clutch release fork bolt to the manual transaxle case.

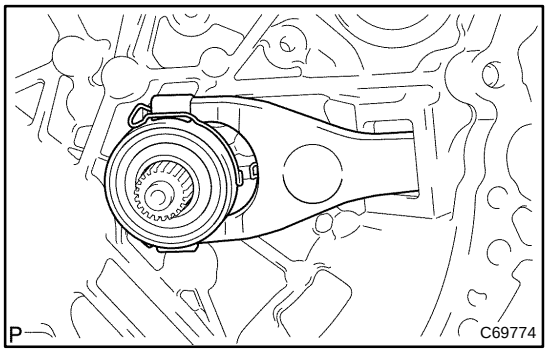


121. INSTALL RELEASE FORK SUPPORT

(a) Using a deep socket wrench, install the release fork support to the manual transaxle case.
Torque: 47.1 N·m (480 kgf·cm, 35 ft·lbf)

122. INSTALL CLUTCH RELEASE BEARING ASSY

(a) Coat the clutch release bearing assy with release hub grease, install it to the clutch release fork sub–assy.
Sealant:
Part No. 08887–01806, RELEASE HUB GREASE or equivalent
(b) Apply clutch spline grease to the input shaft spline.



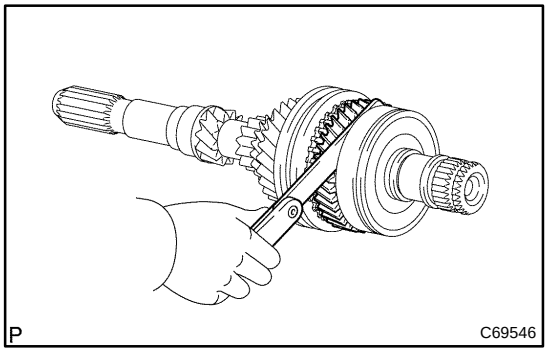
123. INSTALL CLUTCH RELEASE FORK SUB–ASSY

(a) Install the clutch release fork sub – assy to the input shaft.

INPUT SHAFT ASSY (E351)

OVERHAUL

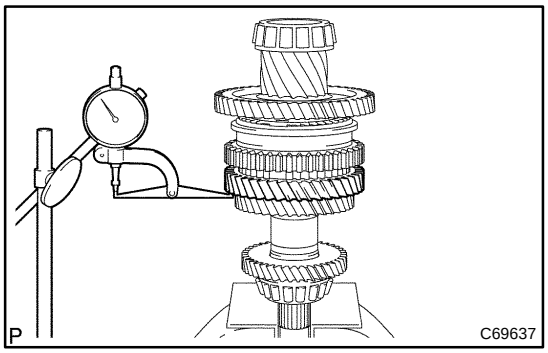
4104Z–01



1. INSPECT 4TH GEAR THRUST CLEARANCE

(a) Using a feeler gauge, measure the 4th gear thrust clearance.

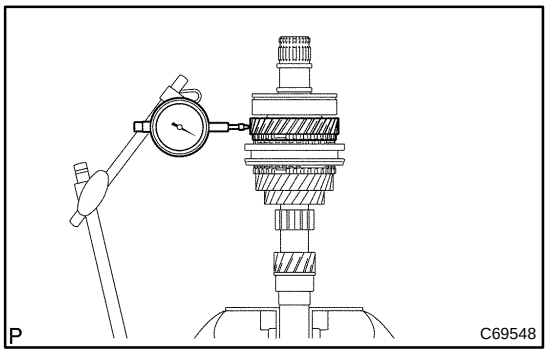
Standard clearance:
0.10 – 0.57 mm (0.0039– 0.0224 in.)



2. INSPECT 3RD GEAR THRUST CLEARANCE

(a) Using a dial indicator, measure the 3rd gear thrust clearance.

Standard clearance:
0.10 – 0.35 mm (0.0039 – 0.0138 in.)



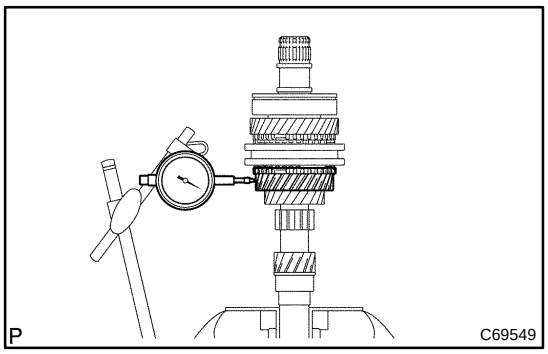
3. INSPECT 4TH GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 4th gear radial clearance.

Standard clearance: mm (in.)

Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

If the clearance exceeds the maximum, replace the 4th gear needle roller bearing.



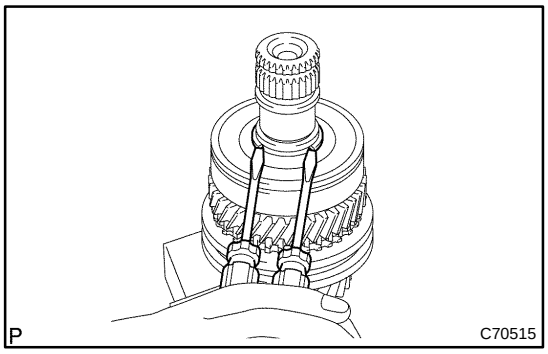
4. INSPECT 3RD GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 3rd gear radial clearance.

Standard clearance: mm (in.)

Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

If the clearance exceeds the maximum, replace the 3rd gear needle roller bearing.



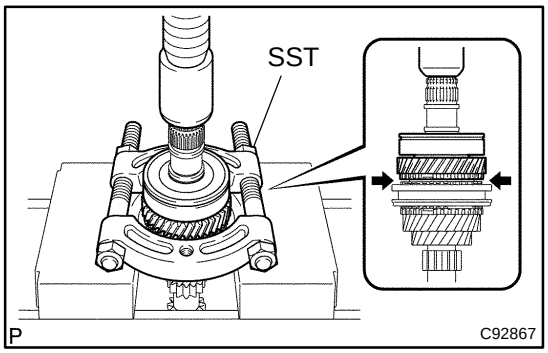
5. REMOVE 4TH GEAR

(a) Hold the input shaft assy and soft jaws with a vise.

(b) Using a 2 screwdrivers and a hammer, remove the input shaft rear bearing shaft snap ring from the input shaft.

NOTICE:

Using a waste to prevent the snap ring from being scattered.

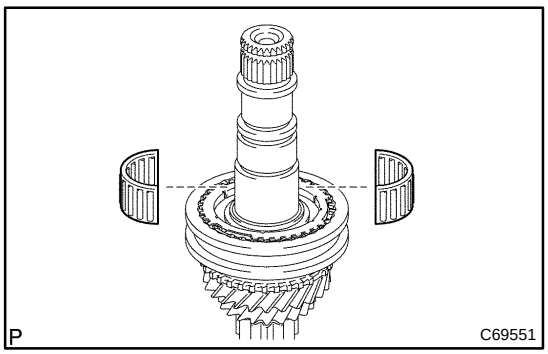


(c) Using SST and a press, remove the input shaft rear bearing and 4th gear.

SST 09950–00020

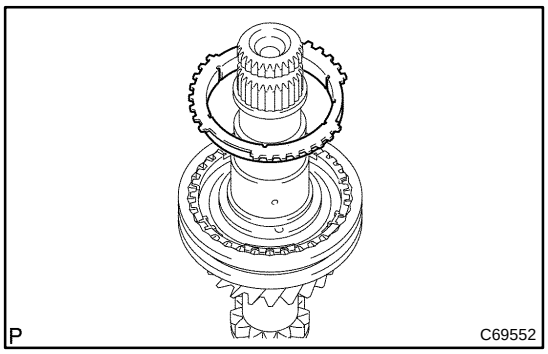
NOTICE:

Do not tighten SST excessively.



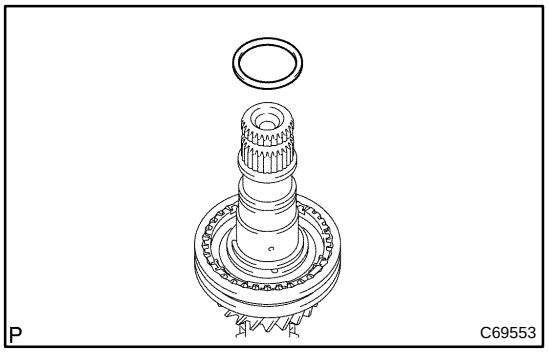
6. REMOVE 4TH GEAR NEEDLE ROLLER BEARING

(a) Remove the 4th gear needle roller bearing from the input shaft.



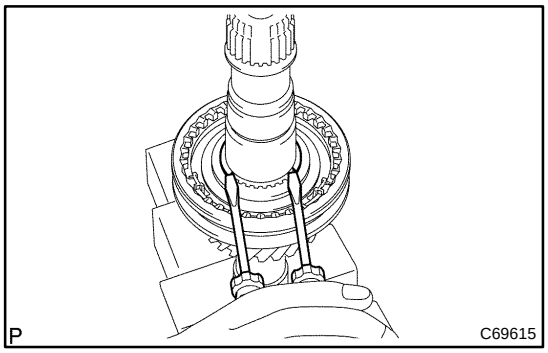
7. REMOVE 2ND SYNCHRONIZER OUTER RING

(a) Remove the 2nd synchronizer outer ring from the transmission clutch hub No.2.



8. REMOVE 4TH GEAR BEARING SPACER

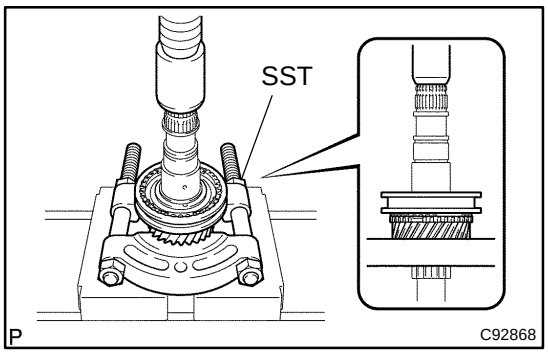
(a) Remove the 4th gear bearing spacer from the transmission clutch hub No.2.



9. REMOVE 3RD GEAR

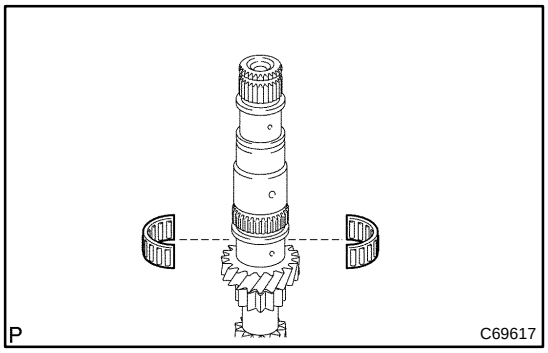
(a) Using 2 screwdrivers and a hammer, remove the clutch hub No.2 setting shaft snap ring from the input shaft.

NOTICE:
Using a waste to prevent the snap ring from being scattered.



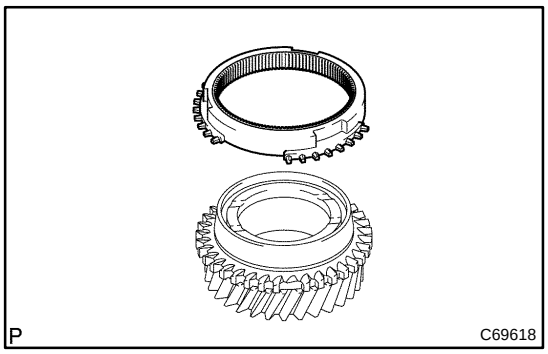
(b) Using SST and a press, remove the transmission clutch hub No.2 and 3rd gear from the input shaft.
SST 09950–00020

NOTICE:
Do not tighten SST excessively.



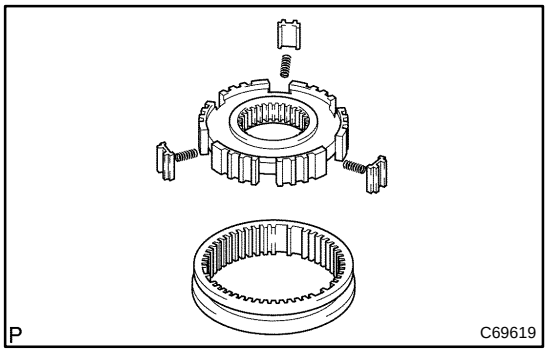
10. REMOVE 3RD GEAR NEEDLE ROLLER BEARING

(a) Remove the 3rd gear needle roller bearing from the input shaft.



11. REMOVE SYNCHRONIZER RING NO.3

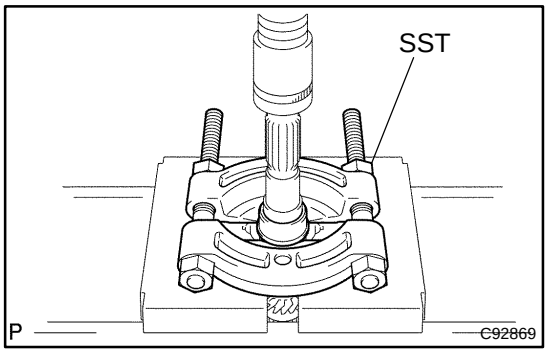
(a) Remove the synchronizer ring No.3 from the 3rd gear.



12. REMOVE TRANSMISSION HUB SLEEVE NO.2

(a) Remove the transmission hub sleeve No.2, 3 synchromesh shifting keys and 3 synchromesh shifting key springs from the transmission clutch hub No.2.

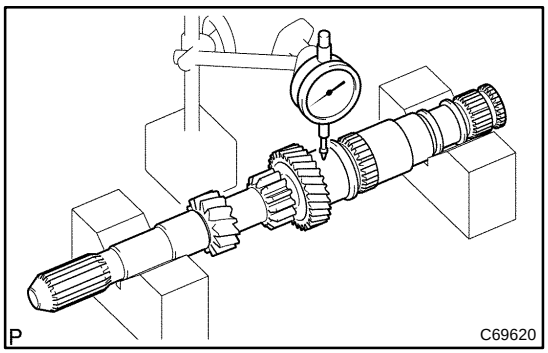
NOTICE:
Using a waste to prevent the shifting key and shifting key spring from being scattered.



13. REMOVE INPUT SHAFT FRONT BEARING

(a) Using SST and a press, remove the input shaft bearing front (inner race) from the input shaft.
SST 09950–00020

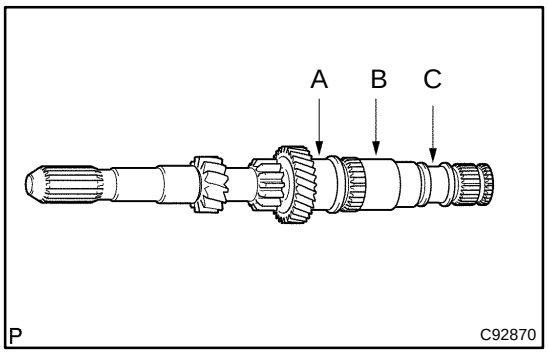
NOTICE:
Do not tighten SST excessively.



14. INSPECT INPUT SHAFT

(a) Using V–block and dial indicator, measure the shaft run out.
Maximum run out: 0.03 mm (0.0012 in.)

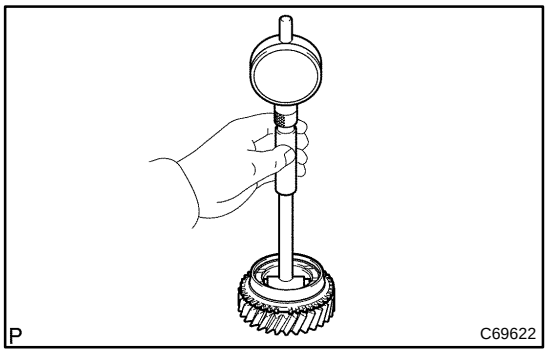
If the run out exceeds the maximum, replace the input shaft.



(b) Using a micrometer, measure the outer diameter of the input shaft journal surface.
Outer diameter: mm (in.)

	Standard outer diameter	Minimum outer diameter
A	35.984 – 36.000 (1.4167 – 1.4173)	35.984 (1.4167)
B	35.984 – 36.000 (1.4167 – 1.4173)	35.984 (1.4167)
C	27.957 – 27.972 (1.1007 – 1.1013)	27.957 (1.1007)

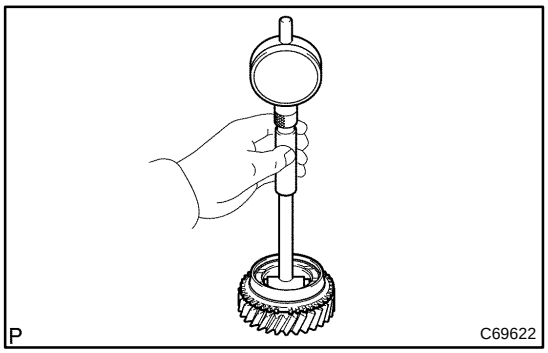
If the outer diameter is less than the minimum, replace the input shaft.



15. INSPECT 4TH GEAR

(a) Using a cylinder gauge, measure the inside diameter of the 4th gear.
Inside diameter: mm (in.)

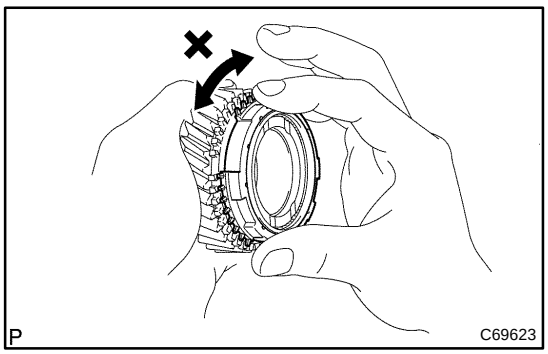
Standard inside diameter	Maximum inside diameter
42.009 – 42.025 (1.6539 – 1.6545)	42.025 (1.6545)



16. INSPECT 3RD GEAR

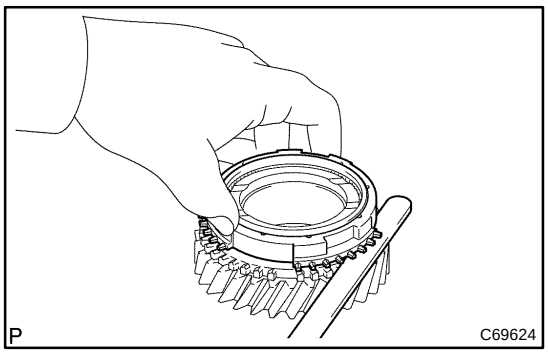
(a) Using a cylinder gauge, measure the inside diameter of the 3rd gear.
Inside diameter: mm (in.)

Standard inside diameter	Maximum inside diameter
43.009 – 43.025 (1.6933 – 1.6939)	43.025 (1.6939)



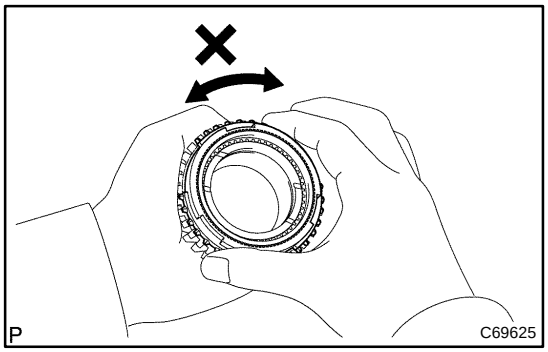
17. INSPECT 2ND SYNCHRONIZER OUTER RING

(a) Coat the 4th gear cone with gear oil. Turn the synchronizer ring No.3 in one direction while pushing it to the 4th gear cone. Check that the ring locks.



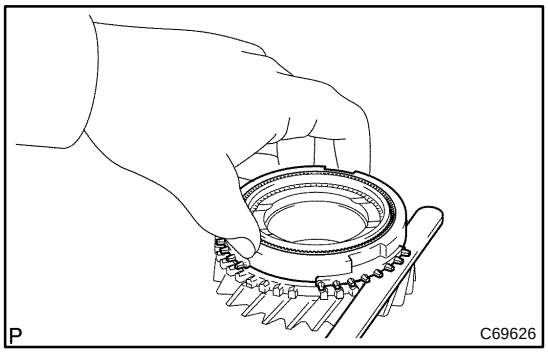
(b) Using a feeler gauge, measure the clearance between the synchronizer outer ring back and 4th gear spline end.
Standard clearance:
0.75 – 1.65 mm (0.0295 – 0.0650 in.)

If the standard clearance is out of specification, replace the synchronizer ring.



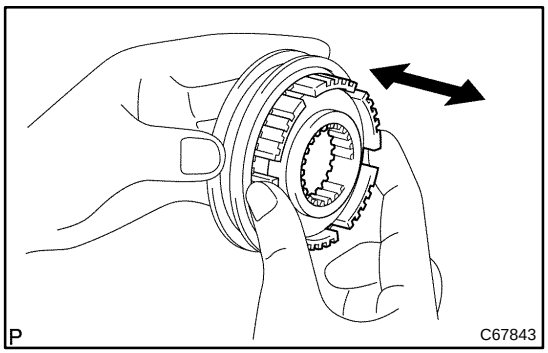
18. INSPECT SYNCHRONIZER RING NO.3

(a) Coat the 3rd gear cone with gear oil. Turn the synchronizer outer ring in one direction while pushing it to the 3rd gear cone. Check that the ring locks.



(b) Using a feeler gauge, measure the clearance between the synchronizer ring No.3 back and 3rd gear spline end.
Standard clearance:
0.65 – 1.75 mm (0.0256 – 0.0689 in.)

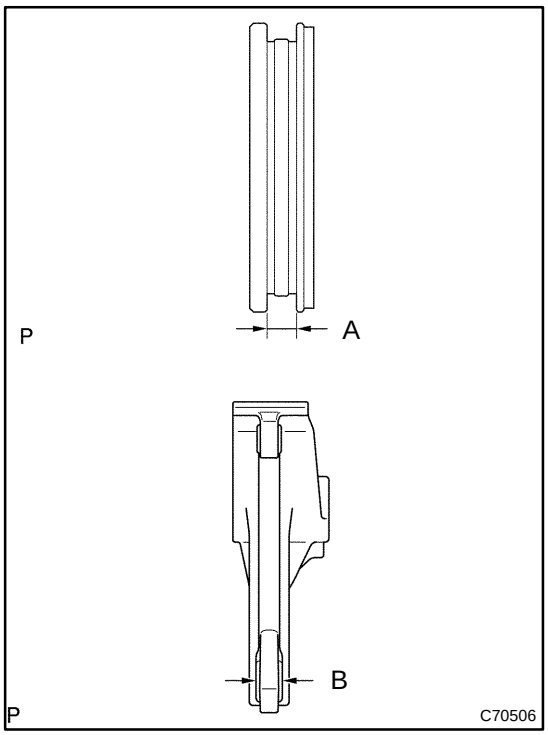
If the standard clearance is out of specification, replace the synchronizer ring No.3.



19. INSPECT TRANSMISSION HUB SLEEVE NO.2

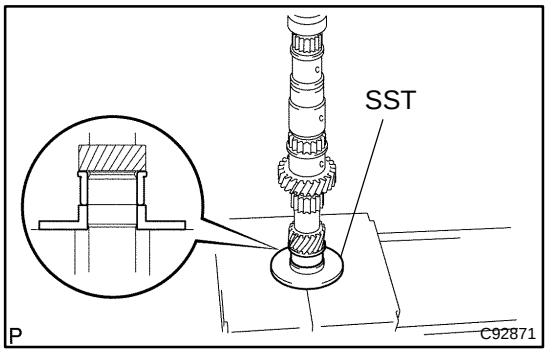
(a) Inspect the sliding condition between transmission hub sleeve No.2 and transmission clutch hub No.2.

(b) Inspect tip of spline gear on the transmission hub sleeve No.2 for wear.



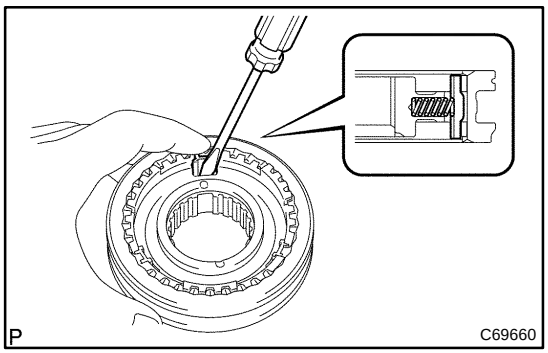
(c) Using a vernier calipers, measure the transmission hub sleeve No.3 groove and the thickness of the claw part on gear shift fork No.1, and calculate the clearance.
Standard clearance:
0.15 – 0.35 mm (0.0059 – 0.0138 in.) {A – B}

If the clearance is out of the specification, replace the transmission hub sleeve No.2 and gear shift fork No.2 with the new one.



20. INSTALL INPUT SHAFT FRONT BEARING

(a) Using SST and a press, install the input shaft front bearing (inner race).
SST 09608–00071

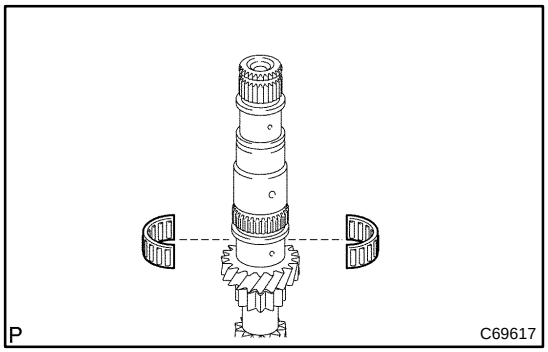


21. INSTALL TRANSMISSION HUB SLEEVE NO.2

(a) Coat the transmission hub sleeve No.2 with gear oil.
(b) Install the 3 synchromesh key springs with transmission hub sleeve No.2.

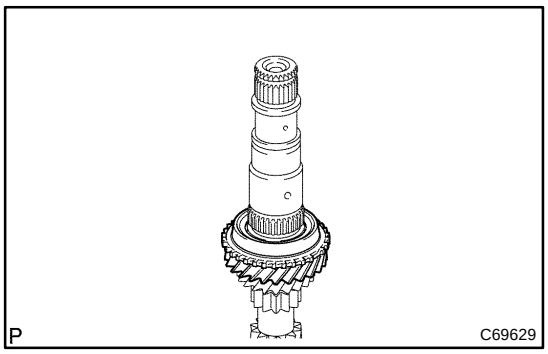
NOTICE:
Do not install the transmission clutch hub sleeve No.2 and the transmission clutch hub No.2 incorrect orientation.

(c) Using a screwdriver, install the synchromesh shifting key to the input shaft.



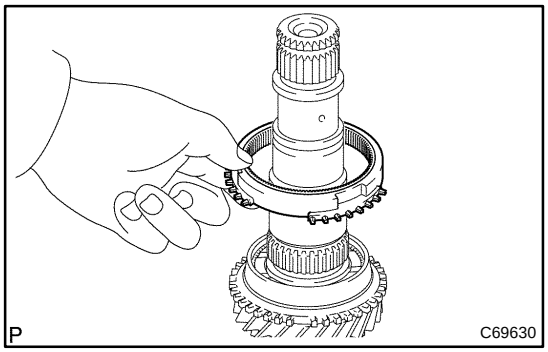
22. INSTALL 3RD GEAR NEEDLE ROLLER BEARING

(a) Coat the 3rd gear bearing with gear oil, install it to the input shaft.



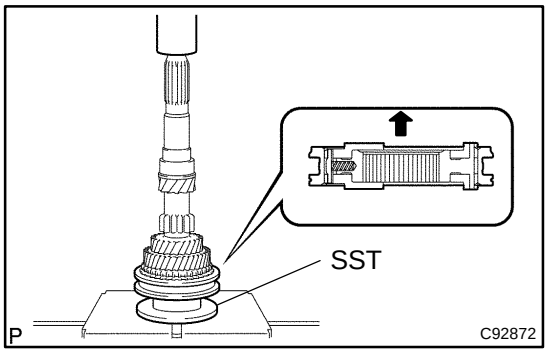
23. INSTALL 3RD GEAR

(a) Coat the 3rd gear with gear oil, install it to the input shaft.



24. INSTALL SYNCHRONIZER RING NO.3

(a) Coat the synchronizer ring No.3 with gear oil, install it to the 3rd gear.

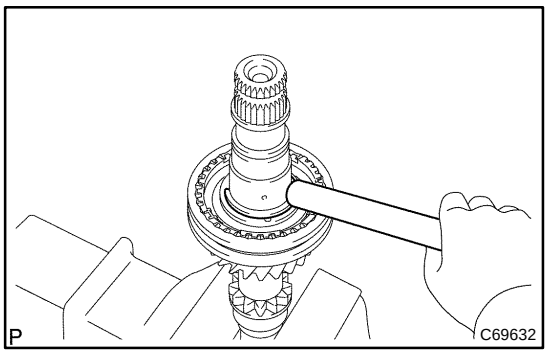


25. INSTALL TRANSMISSION CLUTCH HUB NO.2

(a) Using SST and a press, install the transmission clutch hub No.2 to the input shaft.
SST 09316–60011 (09316–00041)

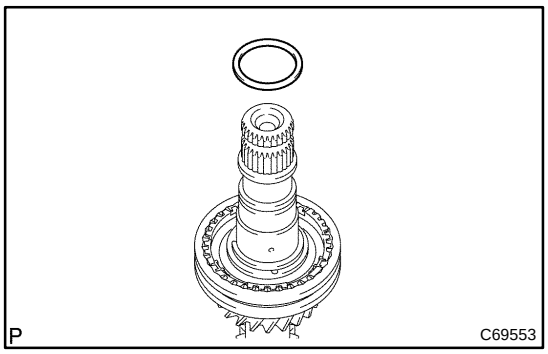
NOTICE:

- **Align the claw of clutch hub No.2 with notch of synchronizer ring No.3 and install them.**
- **Make sure that the 3rd gear should rotate.**



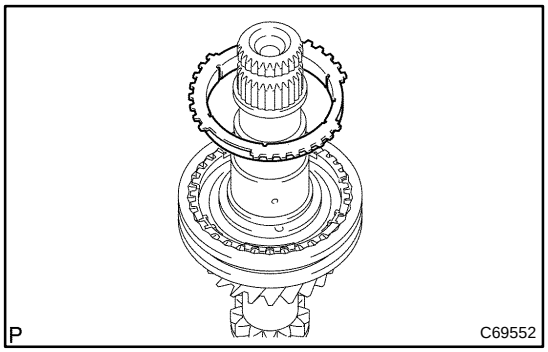
(b) Select a snap ring so that clearance between the transmission clutch hub No.2 and the clutch hub No.2 shaft snap ring will be the standard clearance. Using a brass bar and a hammer, install the snap ring.
Standard clearance: 0.1 mm or less (0.0039 or less)
Snap ring thickness

Part No.	Thickness: mm (in.)	Mark
90520–34003	2.30 – 2.35 (0.0906 – 0.0925)	H
90520–34004	2.35 – 2.40 (0.0925 – 0.0945)	J
90520–34005	2.40 – 2.45 (0.0945 – 0.0965)	K
90520–34006	2.45 – 2.50 (0.0965 – 0.0984)	L
90520–34007	2.50 – 2.55 (0.0984 – 0.1004)	M
90520–34008	2.55 – 2.60 (0.1004 – 0.1024)	N
90520–34009	2.60 – 2.65 (0.1024 –0.1043)	P



26. INSTALL 4TH GEAR BEARING SPACER

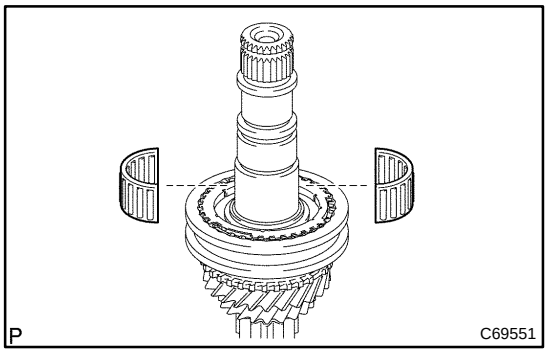
(a) Coat the 4th gear bearing spacer with gear oil, install it to the input shaft.



27. INSTALL 2ND SYNCHRONIZER OUTER RING

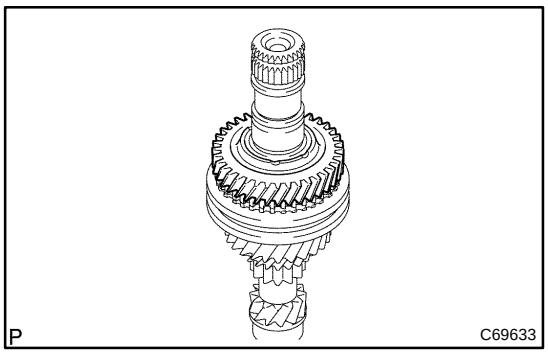
(a) Coat the 2nd synchronizer outer ring with gear oil, install it to the transmission clutch hub No.2.

NOTICE:
Align the claw of the clutch hub No.2 with the notch of the 2nd synchronizer outer ring and assemble.



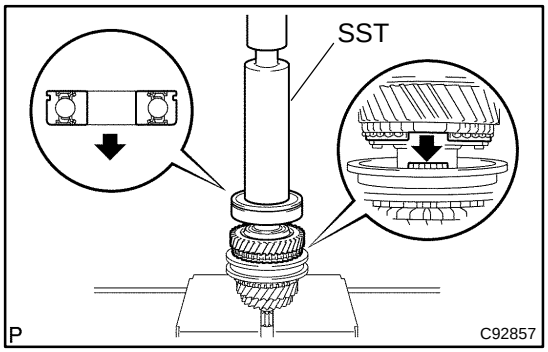
28. INSTALL 4TH GEAR NEEDLE ROLLER BEARING

(a) Coat the 4th gear needle roller bearing with gear oil, install it to the input shaft.



29. INSTALL 4TH GEAR

(a) Coat the 4th gear with gear oil, install it to the input shaft.

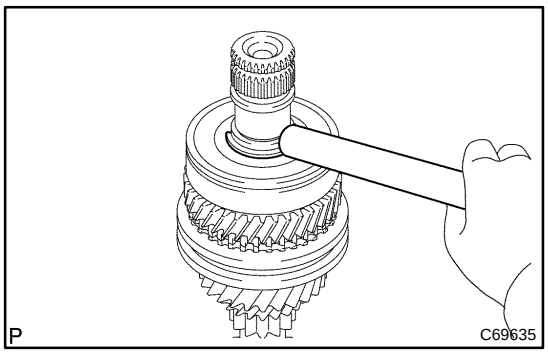


30. INSTALL INPUT SHAFT REAR RADIAL BALL BEARING

(a) Using SST and a press, install the input shaft rear radial ball bearing to the input shaft.

NOTICE:
- **Make the groove on the bearing face to the rear and install.**
- **Make sure that the 3rd gear rotates.**

SST 09608–06041

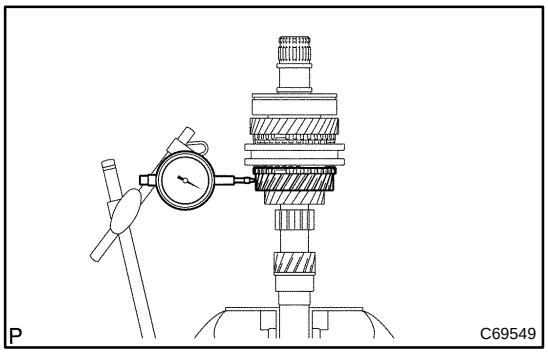


(b) Select a snap ring so that the clearance between the Input shaft radial ball rear bearing and the input shaft rear bearing snap ring will be the standard clearance. Using a brass bar and a hammer, install the snap ring.

Standard clearance: 0.1 mm or less

Snap ring

Part No.	thickness: mm (in.)	Mark
90520–30008	2.35 – 2.40 (0.0925 – 0.0945)	1
90520–30009	2.40 – 2.45 (0.0945 – 0.0965)	2
90520–30010	2.45 – 2.50 (0.0965 – 0.0984)	3
90520–30011	2.50 – 2.55 (0.0984 – 0.1004)	4
90520–30012	2.55 – 2.60 (0.1004 – 0.1024)	5
90520–30013	2.60 – 2.65 (0.1024 – 0.1043)	6
90520–30021	2.65 – 2.70 (0.1043 – 0.1063)	7
90520–30022	2.70 – 2.75 (0.1063 – 0.1083)	8



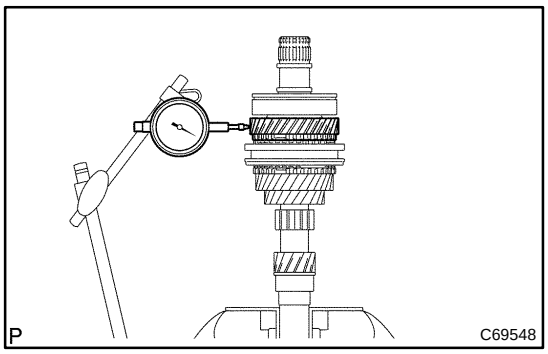
31. INSPECT 3RD GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 3rd gear radial clearance.

Standard clearance: mm (in.)

Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

If the clearance exceeds the maximum, replace the 3rd gear needle roller bearing.



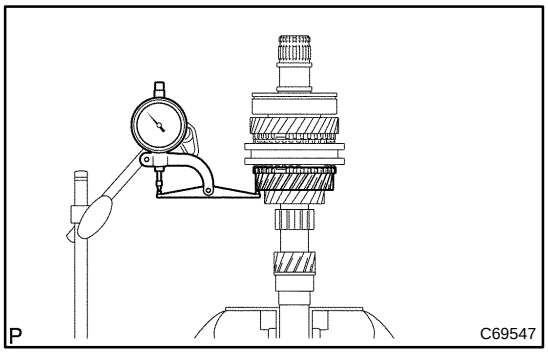
32. INSPECT 4TH GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 4th gear radial clearance.

Standard clearance: mm (in.)

Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

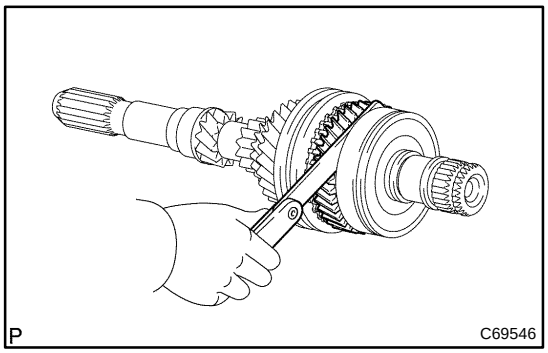
If the clearance exceeds the maximum, replace the 4th gear needle roller bearing.



33. INSPECT 3RD GEAR THRUST CLEARANCE

(a) Using a dial indicator, measure the 3rd gear thrust clearance.

Standard clearance:
0.10 – 0.35 mm (0.0039 – 0.0138 in.)



34. INSPECT 4TH GEAR THRUST CLEARANCE

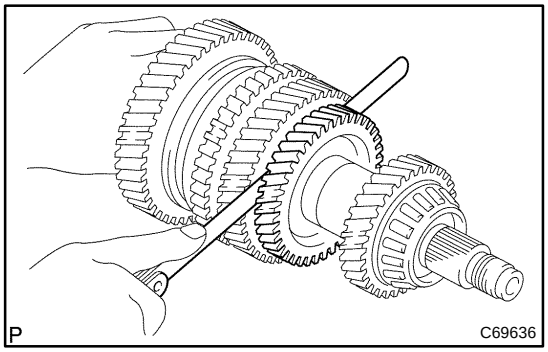
(a) Using a feeler gauge, measure the 4th gear thrust clearance.

Standard clearance:
0.10 – 0.57 mm (0.0039 – 0.0224 in.)

OUTPUT SHAFT ASSY (E351)

OVERHAUL

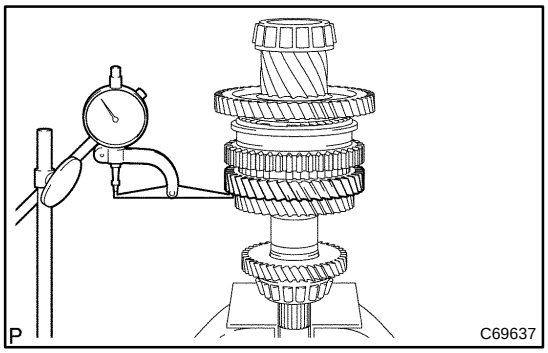
41050–01



1. INSPECT 1ST GEAR THRUST CLEARANCE

(a) Using a feeler gauge, measure the 1st gear thrust clearance.

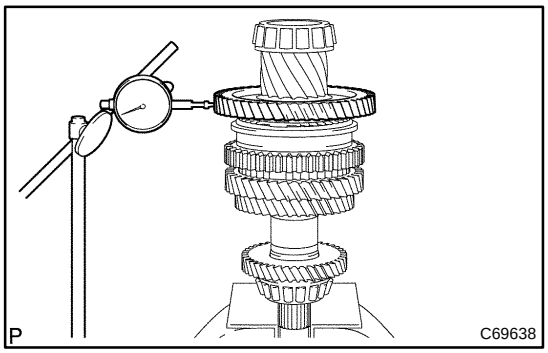
Standard clearance:
0.25 – 0.40 mm (0.0098 – 0.0157 in.)



2. INSPECT 2ND GEAR THRUST CLEARANCE

(a) Using a dial indicator, measure the 2nd gear thrust clearance.

Standard clearance:
0.10 – 0.35 mm (0.0039 – 0.0138 in.)



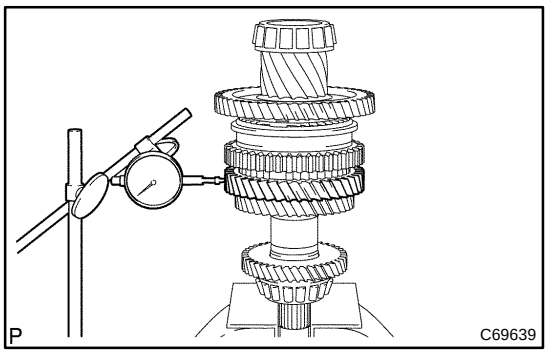
3. INSPECT 1ST GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 1st gear radial clearance.

Standard clearance: mm (in.)

Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

If the clearance is out of the specification, replace the 1st gear needle roller bearing.



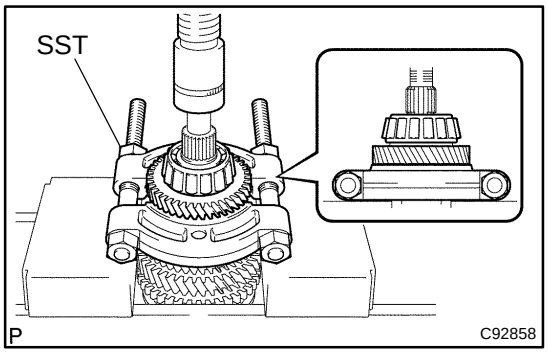
4. INSPECT 2ND GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 2nd gear radial clearance.

Standard clearance: mm (in.)

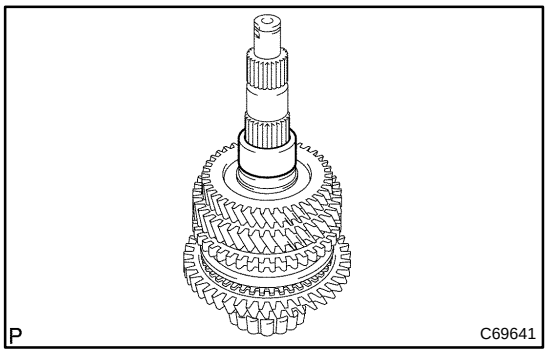
Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

If the clearance is out of the specification, replace the 2nd gear needle roller bearing.



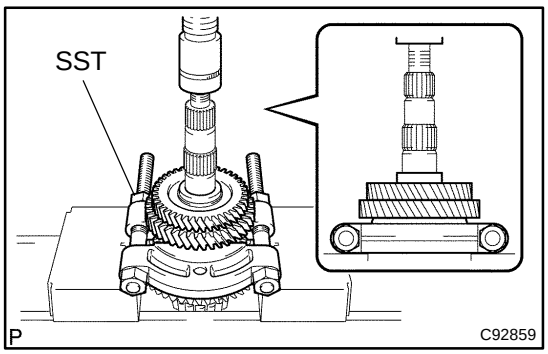
5. REMOVE 4TH DRIVEN GEAR

(a) Using SST and a press, remove the output shaft bearing rear (inner race) and 4th driven gear.
SST 09950–00020



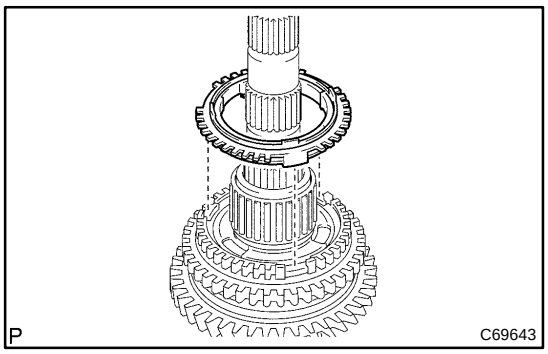
6. REMOVE OUTPUT GEAR SPACER

(a) Remove the output gear spacer from the output shaft.



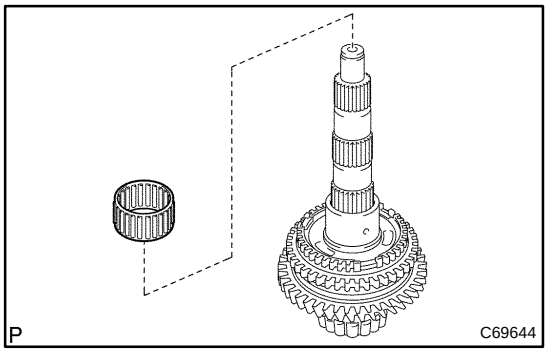
7. REMOVE 2ND GEAR

(a) Using SST and a press, remove the 3rd driven gear and 2nd gear from the out put shaft.
SST 09950–00020



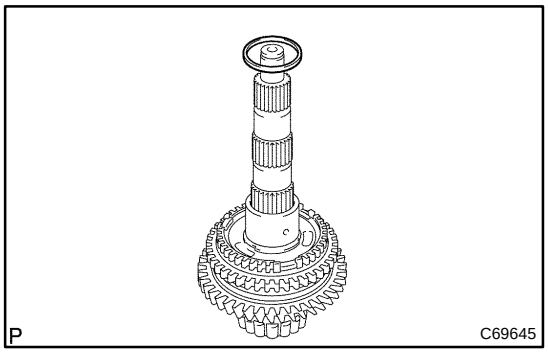
8. REMOVE SYNCHRONIZER RING SET NO.2

(a) Remove the synchronizer ring set No.2 from the transmission clutch hub No.1.



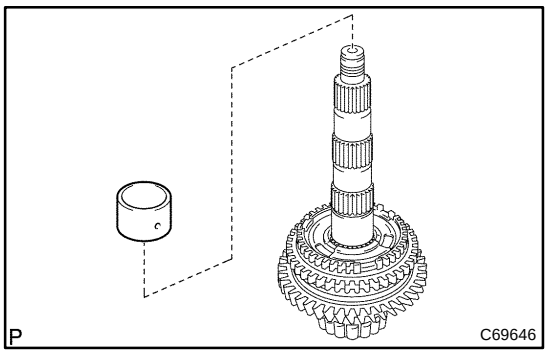
9. REMOVE 2ND GEAR NEEDLE ROLLER BEARING

(a) Remove the 2nd gear needle roller bearing from the output shaft.



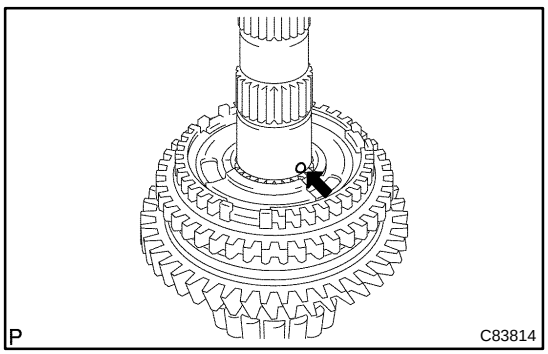
10. REMOVE 2ND GEAR BEARING SPACER

(a) Remove the 2nd gear bearing spacer from the output shaft.



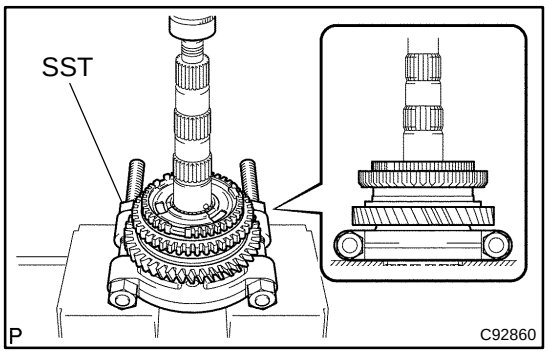
11. REMOVE 2ND GEAR BUSH

(a) Remove the 2nd gear bush from the output shaft.



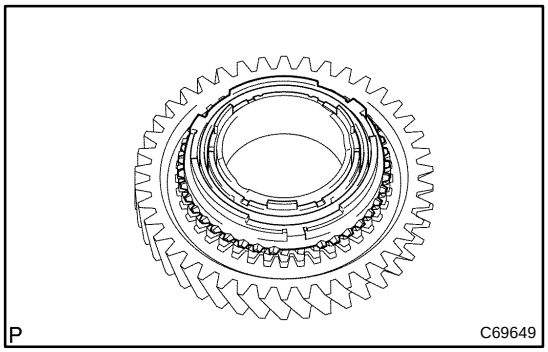
12. REMOVE 2ND GEAR BUSH BALL

(a) Using a magnetic finger, remove the 2nd gear bush ball from the output shaft.



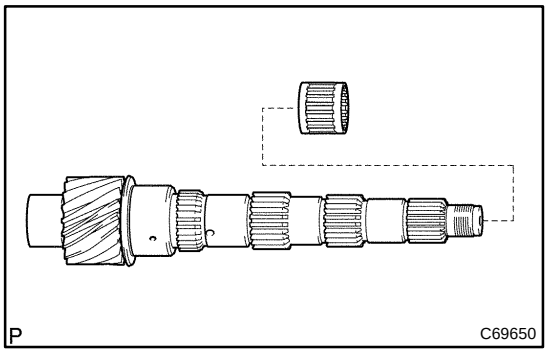
13. REMOVE 1ST GEAR

(a) Using SST and a press, remove the transmission clutch hub No.1 and 1st gear from the output shaft.
SST 09950–00020



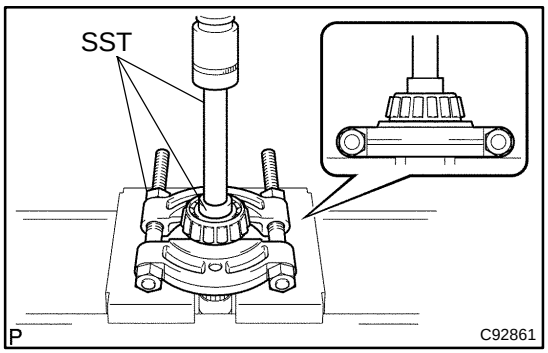
14. REMOVE SYNCHRONIZER RING SET NO.1

(a) Remove the synchronizer ring set No.1 from the 1st gear.



15. REMOVE 1ST GEAR NEEDLE ROLLER BEARING

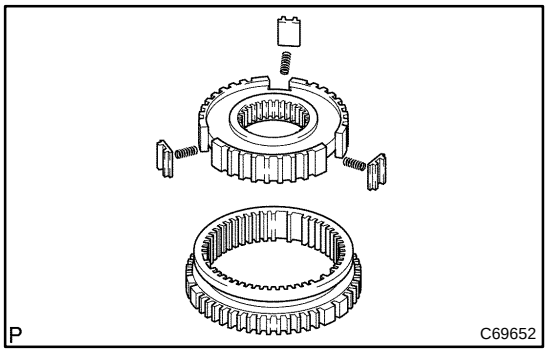
(a) Remove the 1st gear needle roller bearing from the output shaft.



16. REMOVE OUTPUT SHAFT FRONT BEARING

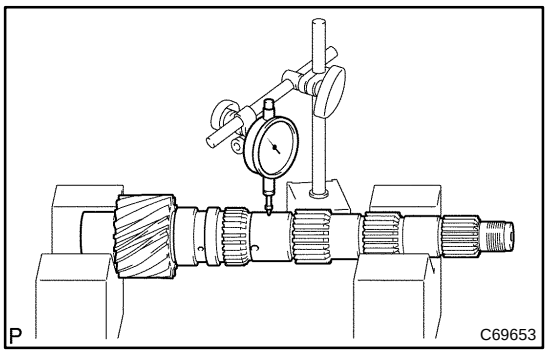
(a) Using SST and a press, remove the output shaft front bearing (inner race) from the output shaft.
SST 09950–00020, 09950–60010 (09951–00320), 09950–70010 (09951–07150)

NOTICE:
Do not tighten SST excessively.



17. REMOVE REVERSE GEAR

(a) Remove the reverse gear, 3 synchromesh shifting keys and 3 synchromesh shifting key springs from the transmission clutch hub No.1.

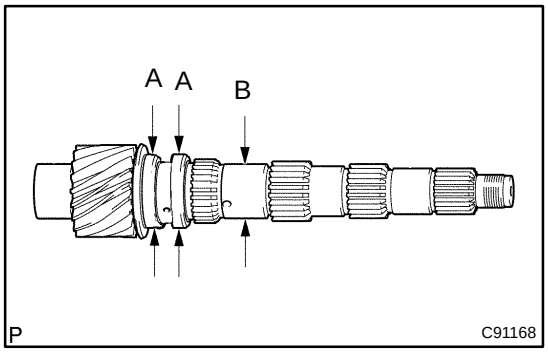


18. INSPECT OUTPUT SHAFT

(a) Using V–block and a dial indicator, measure the shaft run out.

Maximum run out: 0.03 mm (0.0012 in.)

If the run out exceeds the maximum, replace the input shaft.

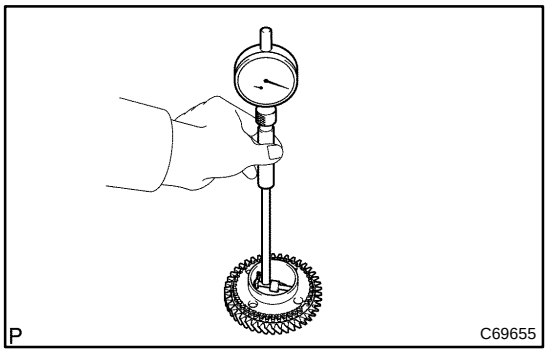


(b) Using a micrometer, measure the outer diameter of the output shaft journal surface.

Outer diameter: mm (in.)

Part	Standard outer diameter	minimum outer diameter
A	37.610 – 37.626 (1.4807 – 1.4813)	37.610 (1.4807)
B	34.802 – 34.512 (1.3702 – 1.3587)	34.802 (1.3702)

If the outer diameter is less than the minimum, replace the input shaft.



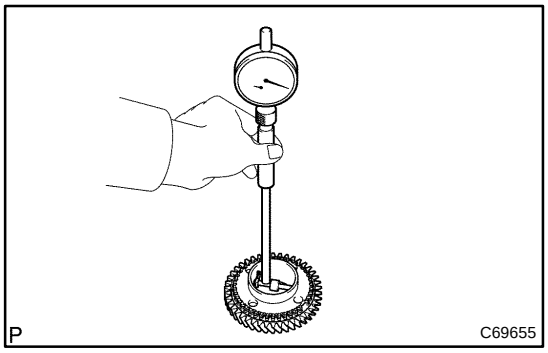
19. INSPECT 2ND GEAR

(a) Using a cylinder gauge, measure the inside diameter of the 2nd gear.

Inside diameter: mm (in.)

Standard inside diameter	Maximum inside diameter
50.009 – 50.025 (1.9689 – 1.9695)	50.025 (1.9695)

If the inside diameter exceeds the maximum, replace the 2nd gear.



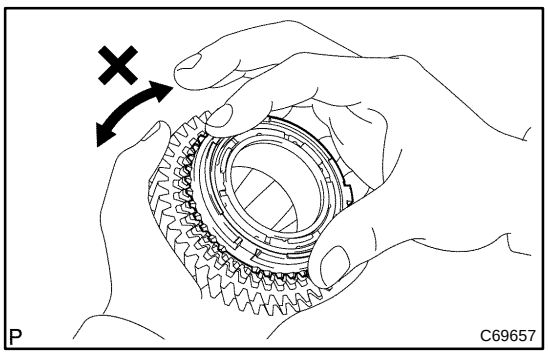
20. INSPECT 1ST GEAR

(a) Using a cylinder gauge, measure the inside diameter of the 1st gear.

Inside diameter: mm (in.)

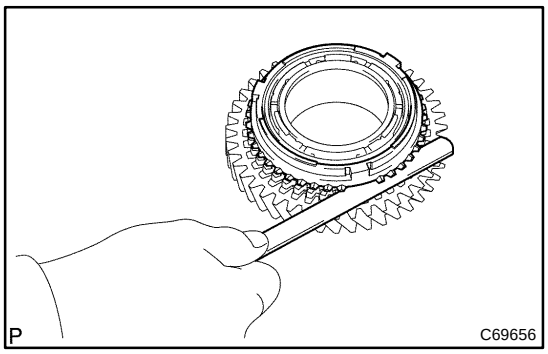
Standard inside diameter	Maximum inside diameter
51.009 – 51.025 (2.0082 – 2.0089)	51.025 (2.0089)

If the inside diameter exceeds the maximum, replace the 1st gear.



21. INSPECT SYNCHRONIZER RING SET NO.2

(a) Coat the cone of the 2nd gear with gear oil, check that it does not turn in the both circumference directions while pushing it to the synchronizer ring No.2.

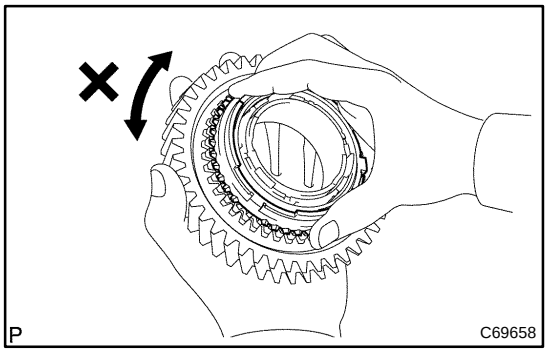


(b) Check the clearance between the synchronizer ring No.2 and 2nd gear while pushing it to the synchronizer ring No.2.

Standard clearance:

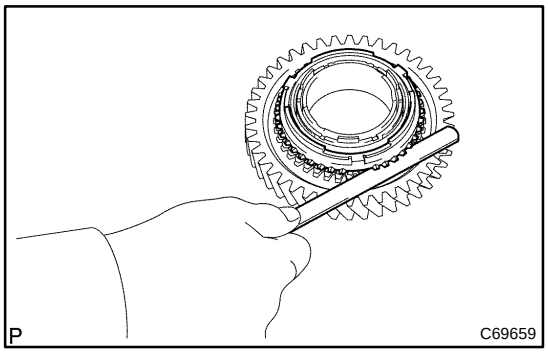
0.70 – 1.45 mm (0.0276 – 0.0571 in.)

If the standard clearance is out of the specification, replace the synchronizer ring set No.2 with a new one.



22. INSPECT SYNCHRONIZER RING SET NO.1

(a) Coat the 1st gear cone with gear oil. Turn the synchronizer ring set No.1. in one direction while pushing it to the 1st gear cone. Check that the ring locks.

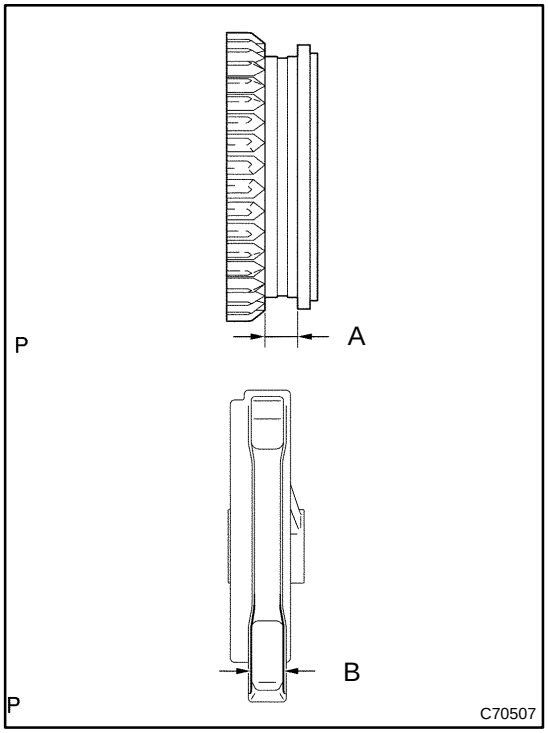


(b) Check the clearance between the synchronizer ring set No.1 and 1st gear while pushing it to the cone of synchronizer ring set No.1.

Standard clearance:

0.70 – 1.45 mm (0.0276 – 0.0571 in.)

If the standard clearance is out of the specification, replace the synchronizer ring set No.1 with a new one.



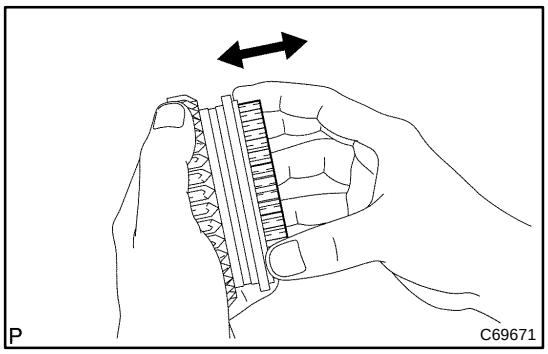
23. INSPECT REVERSE GEAR

(a) Using a vernier calipers, measure the reverse gear groove and thickness of the claw part on gear shift fork No.1, and calculate

Standard clearance:

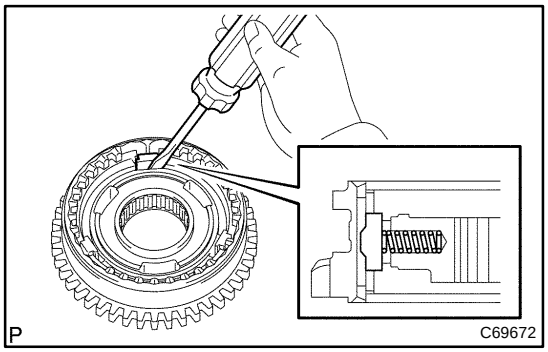
0.15 – 0.35 mm (0.0059 – 0.0138 in.) {A – B}

If the clearance is out of the specification, replace the reverse gear and gear shift fork No.1 with the new one.



24. INSPECT TRANSMISSION CLUTCH HUB NO.1

(a) Check the sliding condition between the transmission clutch hub No.1 and reverse gear.
(b) Check the tip of spline gear on the sleeve of reverse gear for wear.

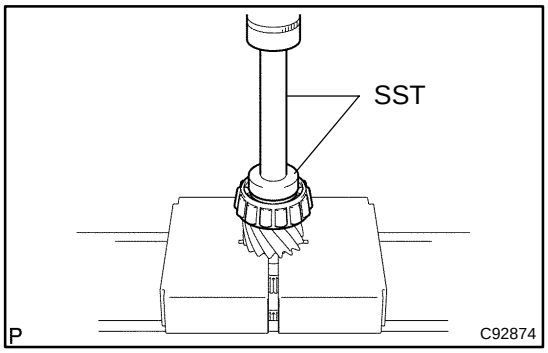


25. INSTALL REVERSE GEAR

(a) Coat the reverse gear with gear oil.
(b) Install the 3 synchromesh shifting key spring No.1 and transmission clutch hub No.1 to the reverse gear.

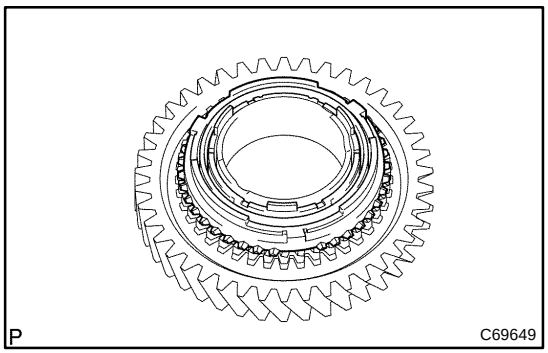
NOTICE:
Do not set the reverse gear and the transmission clutch hub No.1 in the incorrect direction.

(c) Using a screwdriver, install the synchromesh sifting key No.1 to the reverse gear.



26. INSTALL OUTPUT SHAFT FRONT BEARING

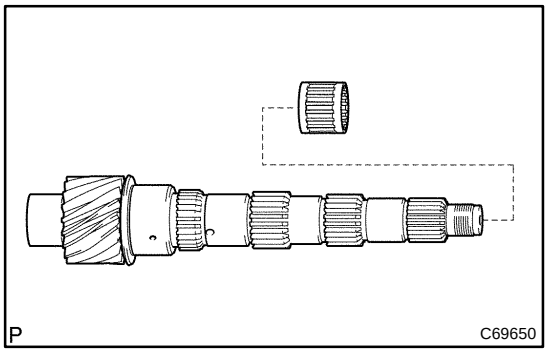
(a) Using SST and a press, install the output shaft front bearing (inner race) to the output shaft.
SST 09950–60010 (09951–00430), 09950–70010 (09951–07150)



27. INSTALL SYNCHRONIZER RING SET NO.1

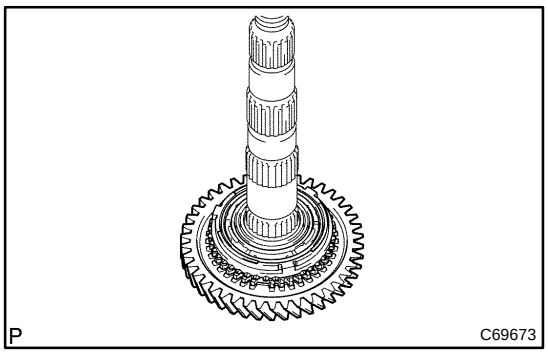
(a) Coat the synchronizer ring set No.1 with gear oil, install it to the 1st gear.

NOTICE:
Align the synchronizer ring set No.1 with the hole of 1st gear and install.



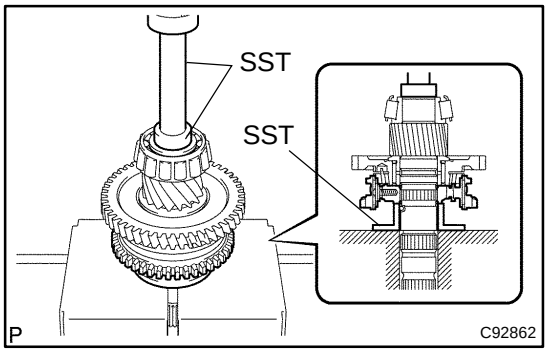
28. INSTALL 1ST GEAR NEEDLE ROLLER BEARING

(a) Coat the 1st gear needle roller bearing with gear oil, install it to the output shaft.



29. INSTALL 1ST GEAR

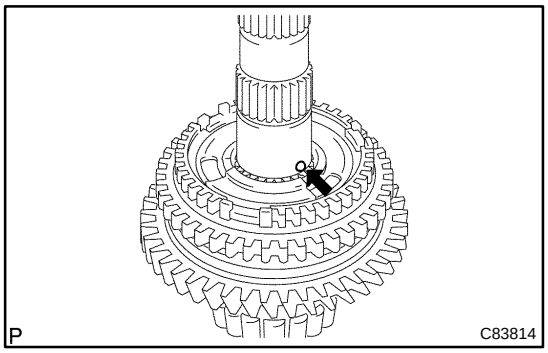
(a) Coat the 1st gear with gear oil, install it to the output shaft.



30. INSTALL TRANSMISSION CLUTCH HUB NO.1

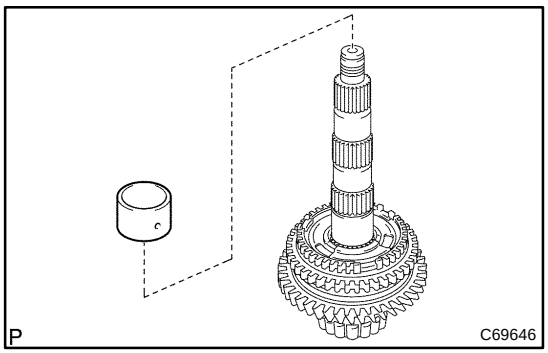
(a) Using SST and a press, install transmission clutch hub No.1 to the output shaft.
SST 09316–60011 (09316–00031), 09950–60010 (09951–00320), 09950–70010 (09951–07100)

NOTICE:
- **Align the synchronizer ring No.1 with synchromesh shifting key No.1 and install.**
- **Make sure that the 1st gear rotates.**



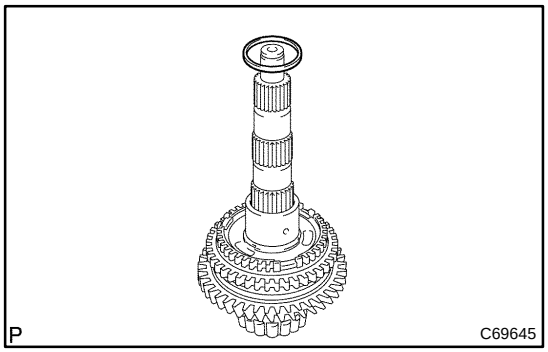
31. INSTALL 2ND GEAR BUSH BALL

(a) Coat the gear bush with MP grease, install it to the output shaft.



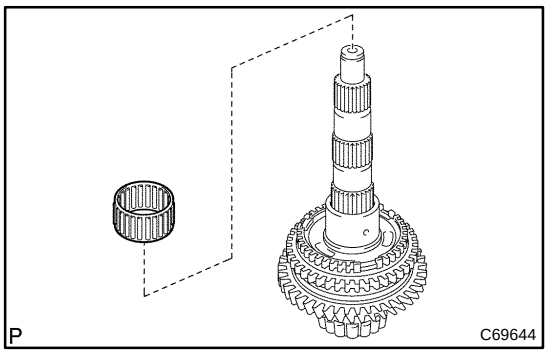
32. INSTALL 2ND GEAR BUSH

(a) Coat the 2nd gear bush with gear oil, install it to the output shaft.



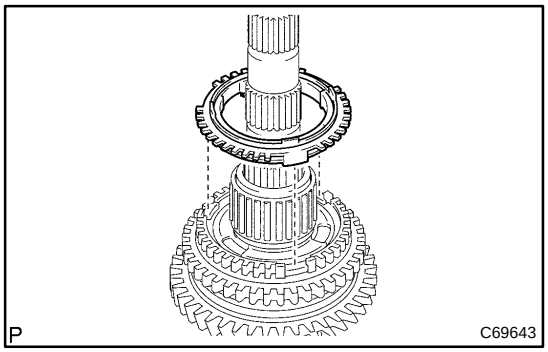
33. INSTALL 2ND GEAR BEARING SPACER

(a) Coat the 2nd gear bearing spacer with gear oil, install it to the output shaft.



34. INSTALL 2ND GEAR NEEDLE ROLLER BEARING

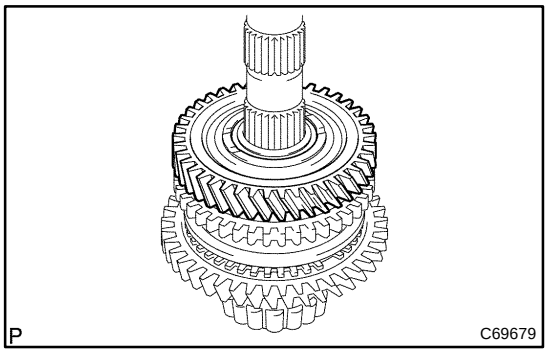
(a) Coat the 2nd gear needle roller bearing with gear oil, install it to the output shaft.



35. INSTALL SYNCHRONIZER RING SET NO.2

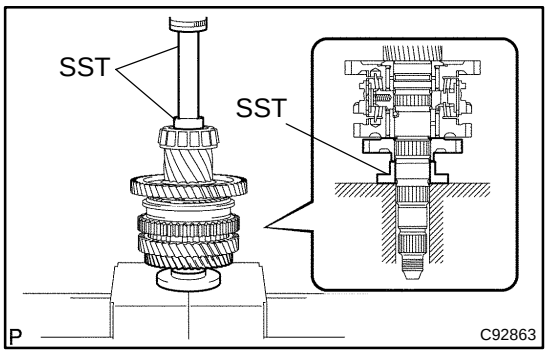
(a) Coat the synchronizer ring set No.2 with gear oil, install it to the transmission clutch hub No.1

NOTICE:
Align the key groove on the synchronizer ring set No.2 with the synchromesh shifting key No.1.



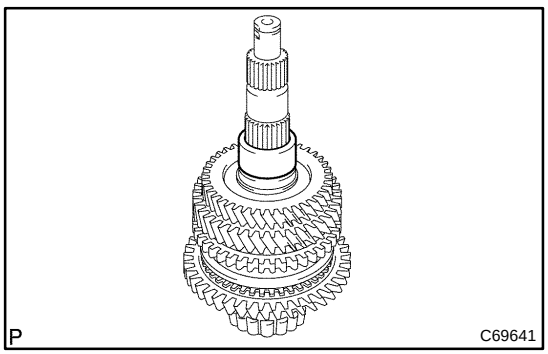
36. INSTALL 2ND GEAR

(a) Coat the 2nd gear with gear oil, install it to the output shaft.



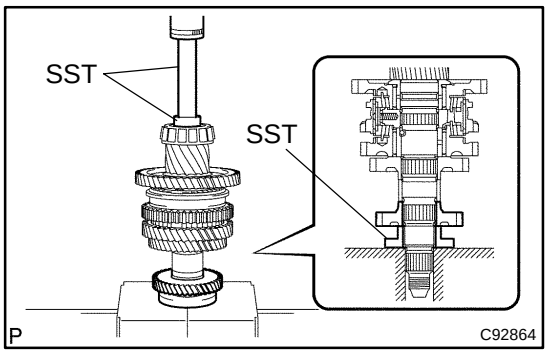
37. INSTALL 3RD DRIVEN GEAR

(a) Using SST and a press, install the 3rd driven gear to the output shaft.
SST 09608–00071, 09950–60010 (09951–00320), 09950–70010 (09951–07100)



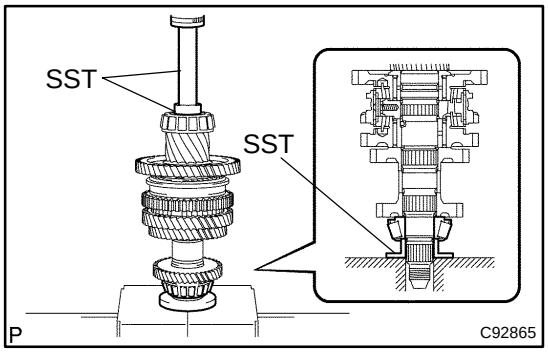
38. INSTALL OUTPUT GEAR SPACER

(a) Install the output gear spacer to the output shaft.



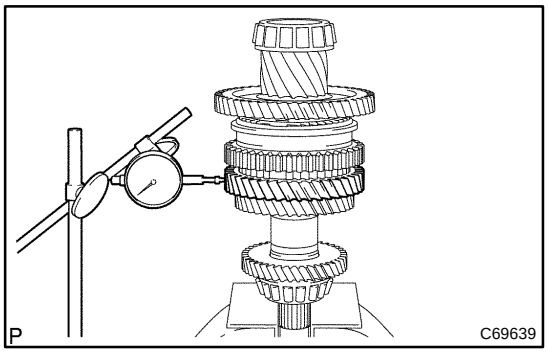
39. INSTALL 4TH DRIVEN GEAR

(a) Using SST and a press, install the 4th driven gear to the output shaft.
SST 09608–00071, 09950–60010 (09951–00320), 09950–70010 (09951–07100)



40. INSTALL OUTPUT SHAFT FRONT BEARING

(a) Using SST and a press, install the output shaft front bearing (inner race) to the output shaft.
SST 09506–30012, 09950–60010 (09951–00320), 09950–70010 (09951–07100)

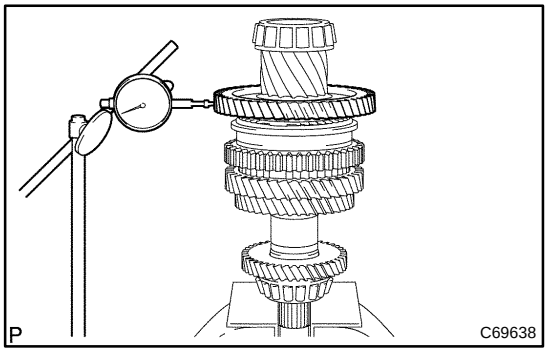


41. INSPECT 2ND GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 2nd gear radial clearance.
Standard clearance: mm (in.)

Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

If the clearance is out of the specification, replace the 2nd gear needle roller bearing.

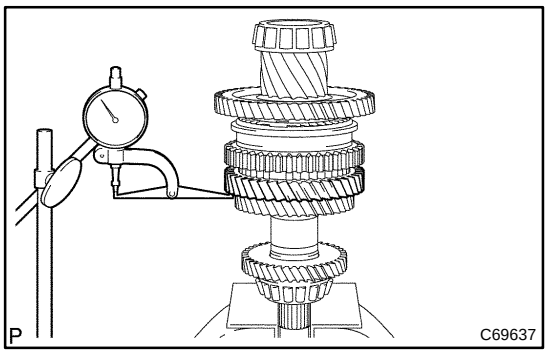


42. INSPECT 1ST GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the 1st gear radial clearance.
Standard clearance: mm (in.)

Bearing	Standard clearance
KOYO made	0.009 – 0.053 (0.0004 – 0.0021)
NSK made	0.009 – 0.051 (0.0004 – 0.0020)

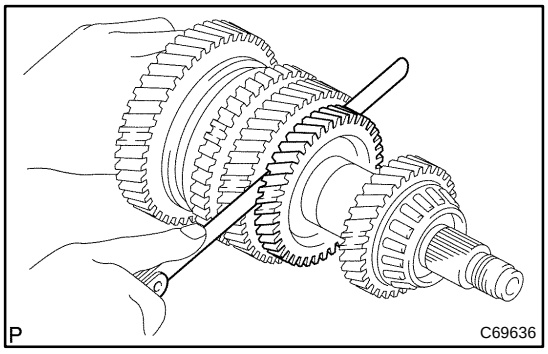
If the clearance is out of the specification, replace the 1st gear needle roller bearing.



43. INSPECT 2ND GEAR THRUST CLEARANCE

(a) Using a dial indicator, measure the 2nd gear thrust clearance.

Standard clearance:
0.10 – 0.35 mm (0.0039 – 0.0138 in.)



44. INSPECT 1ST GEAR THRUST CLEARANCE

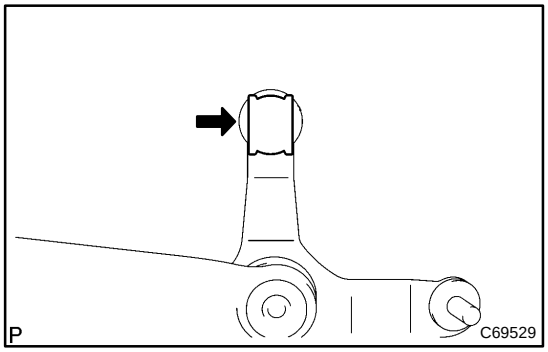
(a) Using a feeler gauge, measure the 1st gear thrust clearance.

Standard clearance:
0.25 – 0.40 mm (0.0098 in. – 0.0157 in.)

SHIFT & SELECT LEVER SHAFT ASSY (E351)

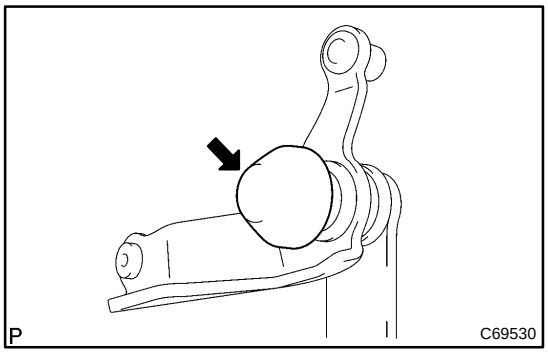
OVERHAUL

4104Y–01



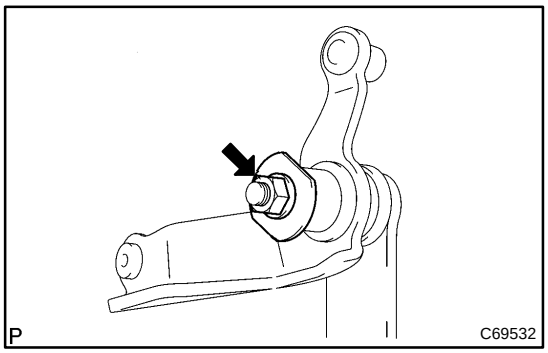
1. REMOVE CONTROL SHIFT LEVER BUSH

(a) Remove the control shift lever bush from the selecting bellcrank No.2.



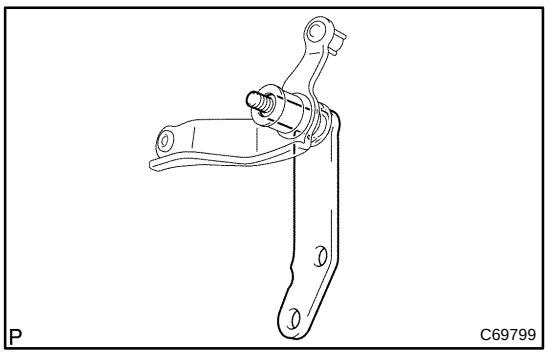
2. REMOVE SELECTING BELLCRANK DUST COVER NO.1

(a) Remove the selecting bellcrank dust cover No.1 from the selecting bellcrank No.2.

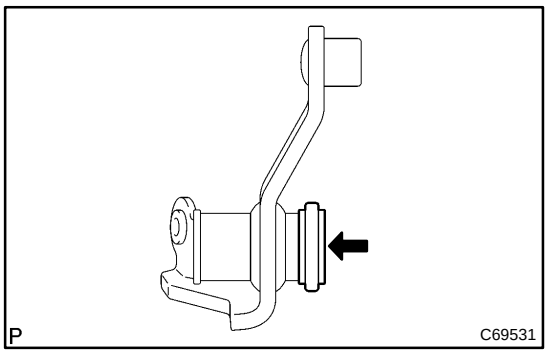


3. REMOVE SELECTING BELLCRANK SUPPORT SUB–ASSY

(a) Remove the nut, washer and selecting bellcrank No.2 plate washer from the selecting bellcrank No.2.

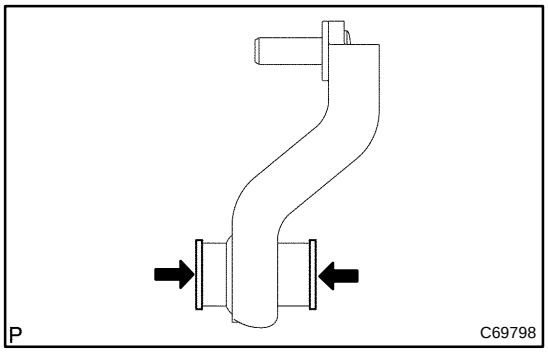


(b) Remove the selecting bellcrank support sub–assy from the selecting bell crank No.2.



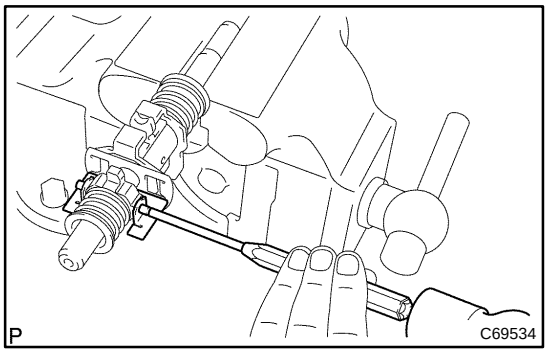
4. REMOVE SELECTING BELLCRANK DUST COVER NO.2

(a) Remove the selecting bell crank dust cover No.2 from the selecting bellcrank No.2.



5. REMOVE SELECTING BELLCRANK NO.2 BUSH

(a) Remove the selecting bellcrank bush from the selecting bellcrank No.2.



6. REMOVE SHIFT LEVER INNER NO.2

(a) Hold the shift & select lever on the vise through the soft jaw.

NOTICE:

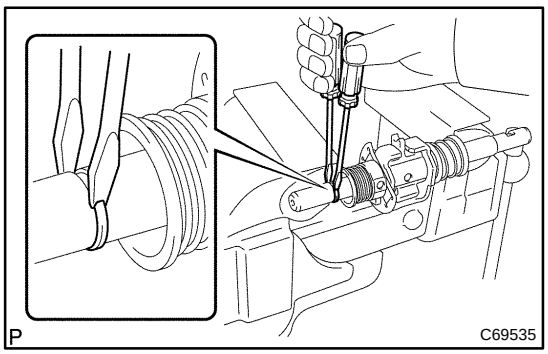
Do not damage the shift & select lever shaft.

(b) Using a pin punch (ϕ 5 mm), remove the shift & select lever inner slotted pin and oil baffle.

NOTICE:

Do not damage the shift & select lever shaft.

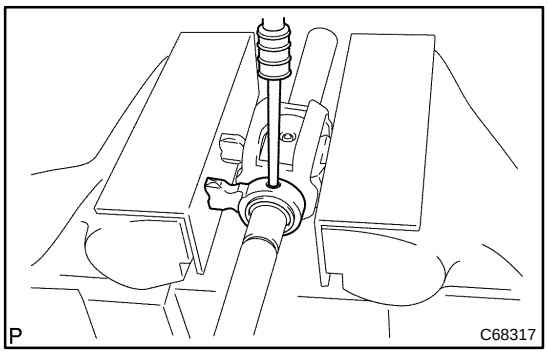
(c) Apply the force to the select return spring No.1 and select return spring No.2 then hold it on the vise through the soft jaw.



(d) Using 2 screwdrivers and a hammer, remove the select seat snap ring from the shift & select lever shaft.

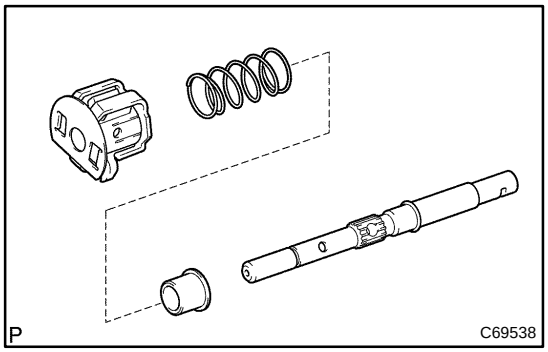
NOTICE:

Do not damage the shift & select lever shaft.

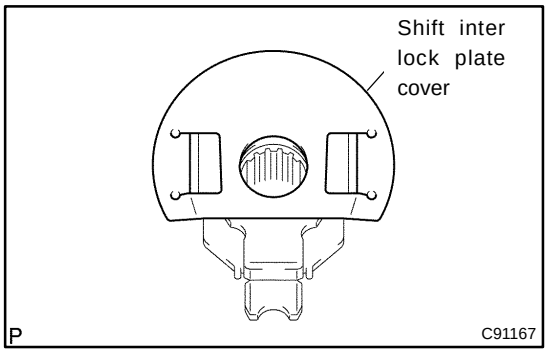


7. REMOVE SELECT SPRING SEAT NO.1

(a) Using a pin punch (ϕ 5 mm), remove the shift inner lever slotted pin from the shift & select lever shaft.

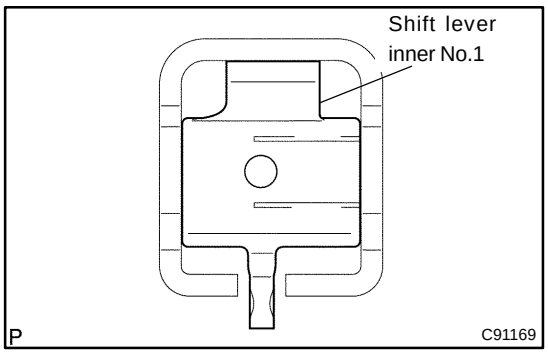


(b) Remove the shift lever assy select return spring No.1 and select spring seat from the shift & select lever shaft.



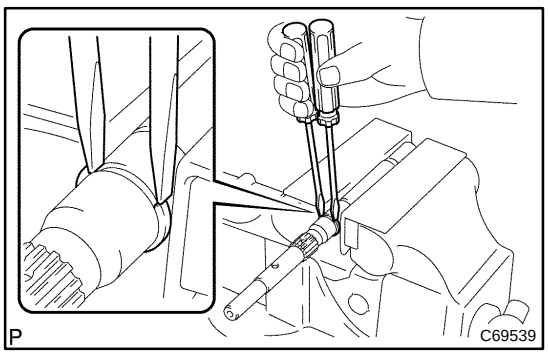
8. REMOVE SHIFT INTER LOCK PLATE COVER

(a) Remove the shift inter lock plate cover from the shift inter lock plate.



9. REMOVE SHIFT LEVER INNER NO.1

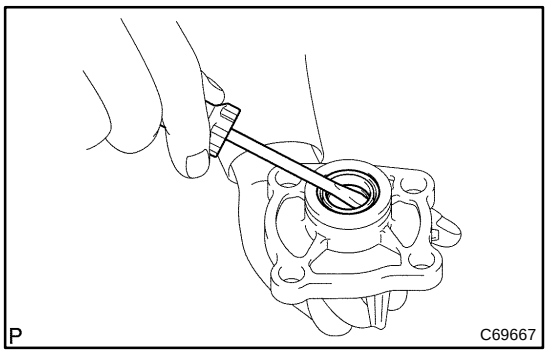
(a) Remove the shift lever inner No.1 from the shift inter lock plate.



10. REMOVE SELECT SPRING NO.1 SEAT SHAFT SNAP RING

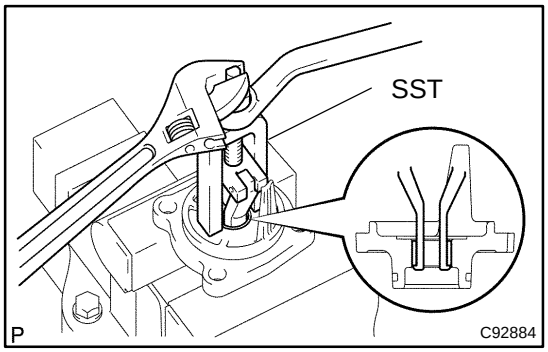
(a) Using 2 screwdrivers and a hammer, remove the select spring No.1 seat shaft snap ring.

NOTICE:
Do not damage the shaft.



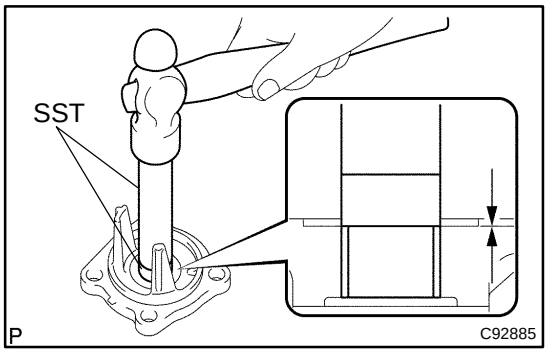
11. REMOVE CONTROL SHAFT COVER OIL SEAL

(a) Using a screwdriver, remove the control shaft cover oil seal from the control shaft cover.



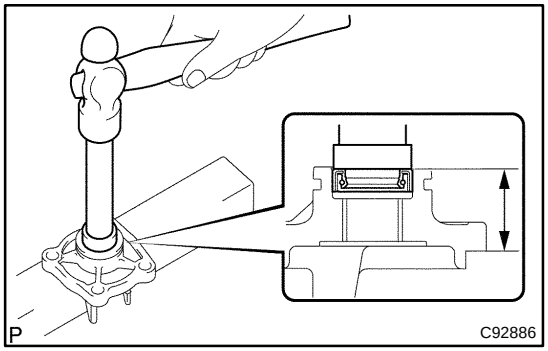
12. REMOVE CONTROL SHAFT COVER BIMETAL FORMED BUSH

(a) Using SST, remove the control shaft cover bimetal formed bush from the control shift cover.
SST 09319–60020



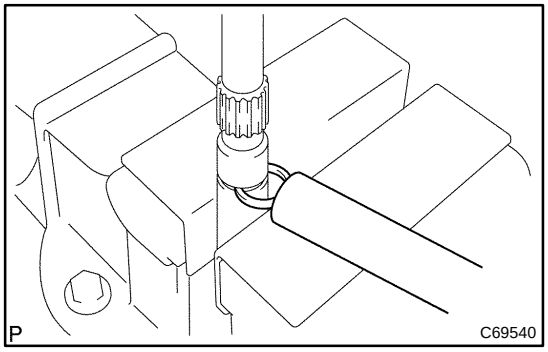
13. INSTALL CONTROL SHAFT COVER BIMETAL FORMED BUSH

(a) Using SST and hammer, install a new control shaft cover bimetal formed bush to the control shaft cover.
SST 09950–60010 (09951–00210), 09950–70010 (09951–07100)
Oil seal drive in depth:
0 ± 0.25 mm (0 ± 0.010 in.)



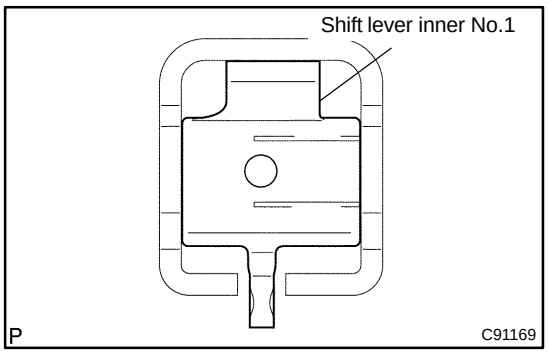
14. INSTALL CONTROL SHAFT COVER OIL SEAL

(a) Using SST and hammer, install a new control shaft cover oil seal to the control shaft cover.
SST 09950–60010 (09951–00280), 09950–70010 (09951–07100)
Oil seal drive in depth:
28.5 ± 0.50 mm (1.122 ± 0.020 in.)



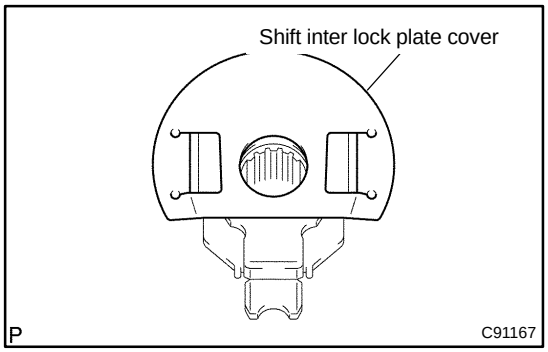
15. INSTALL SELECT SPRING NO.1 SEAT SHAFT SNAP RING

(a) Using a brass bar and a hammer, install the select spring No.1 seat shaft snap ring.



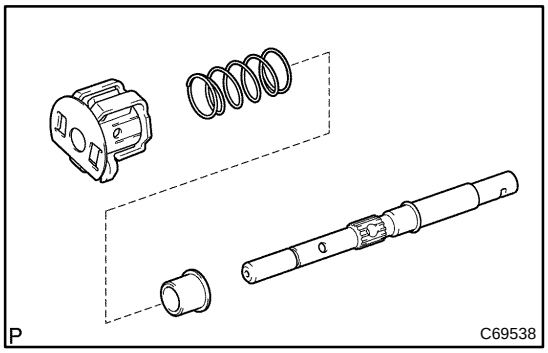
16. INSTALL SHIFT LEVER INNER NO.1

(a) Install the shift lever inner No.1 to the shift inter lock plate.



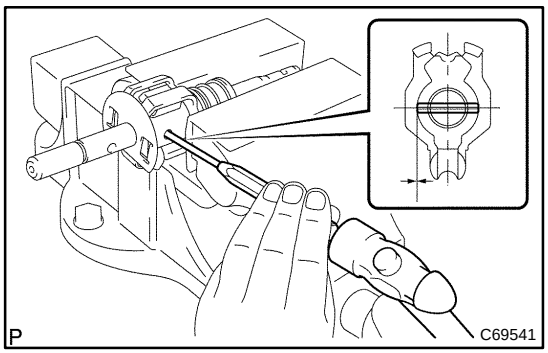
17. INSTALL SHIFT INTER LOCK PLATE COVER

(a) Install the shift inter lock plate cover to the shift inter lock plate.



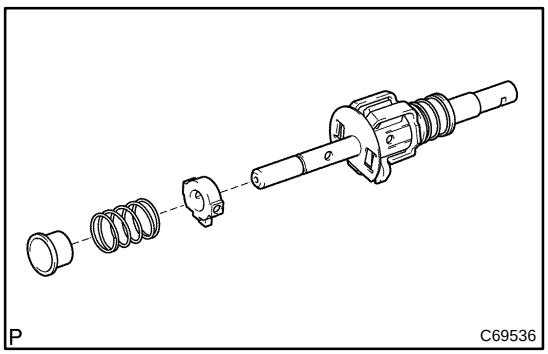
18. INSTALL SELECT SPRING SEAT NO.1

(a) Install the select spring seat No.1, select return spring No.1 and shift lever inner assy to the shift & select lever shaft.



(b) Hold the shift & select lever on the vise through the soft jaw.

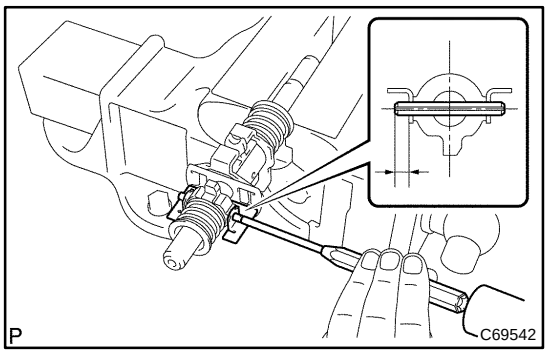
(c) Using a pin punch (ϕ 5 mm), install the shift lever slotted pin to the shift & select lever shaft.
Clearance: –0.5 – 0.5 mm (– 0.0197 – 0.0197 in.)



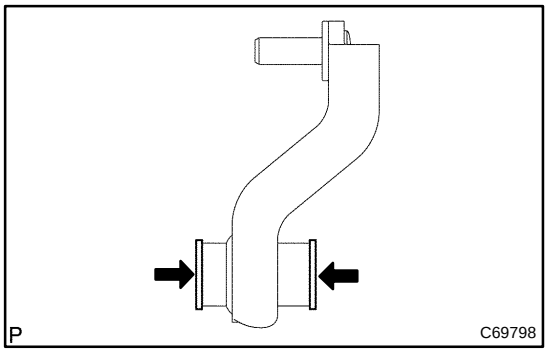
19. INSTALL SHIFT LEVER INNER NO.2

(a) Install shift lever inner No.2, select return spring No.2 and select return spring seat No.2 to the shift & select lever shaft.

(b) Using a brass bar and a hammer, install the select seat snap ring to the shift & select lever shaft.

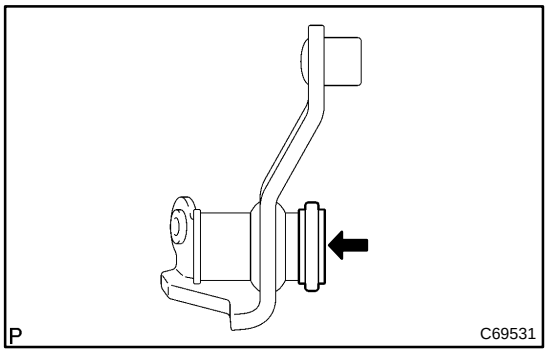


(c) Install the transmission oil baffle. Using a pin punch (ϕ 5 mm) and a hammer, install the shift inner lever slotted pin to the shift & select lever shaft.
Clearance: 5.8 – 6.8 mm (0.228 – 0.268 in.)



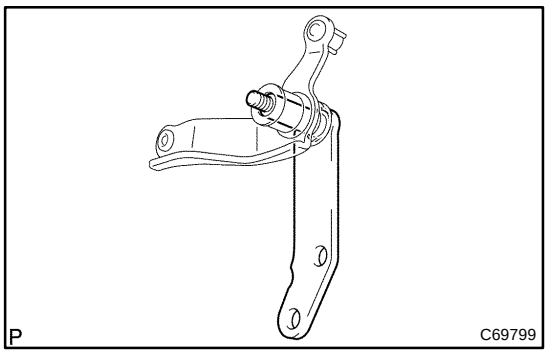
20. INSTALL SELECTING BELLCRANK NO.2 BUSH

(a) Coat the 2 selecting bellcrank No.2 bushes with MP grease, install it to the selecting bellcrank No.2.



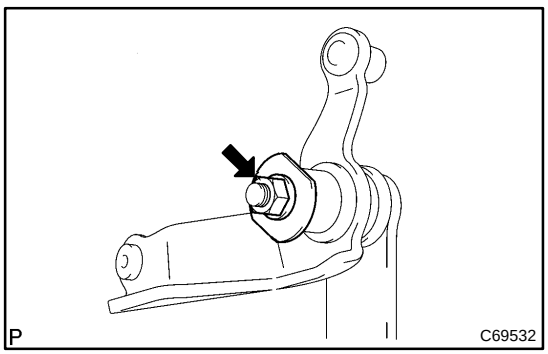
21. INSTALL SELECTING BELLCRANK DUST COVER NO.2

(a) Coat the selecting bellcrank dust cover No.2 with MP grease, install it to the selecting bellcrank No.2.

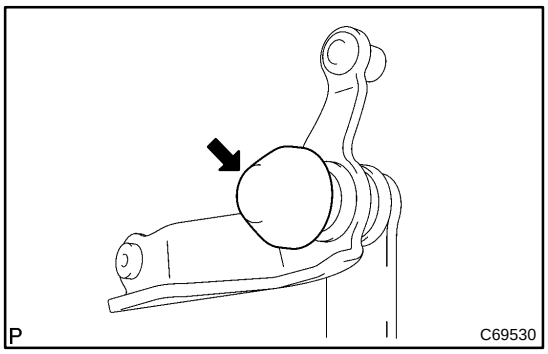


22. INSTALL SELECTING BELLCRANK SUPPORT SUB–ASSY

(a) Install the selecting bellcrank support sub–assy to the selecting bellcrank No.2.

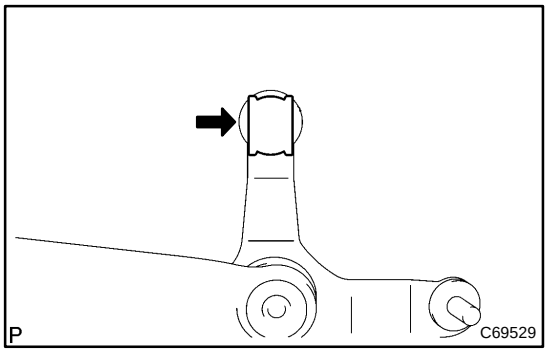


(b) Install the selecting bellcrank No.2 plate washer, washer and nut.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)



23. INSTALL SELECTING BELLCRANK DUST COVER NO.1

(a) Install the selecting bellcrank dust cover No.1 to the selecting bellcrank No.2.



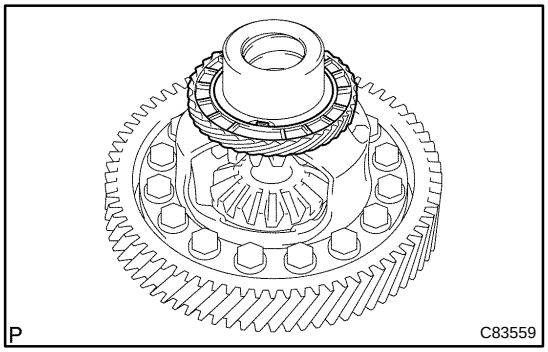
24. INSTALL CONTROL SHIFT LEVER BUSH

(a) Install the control shift lever bush to the selecting bell crank No.2.

DIFFERENTIAL CASE ASSY (E351)

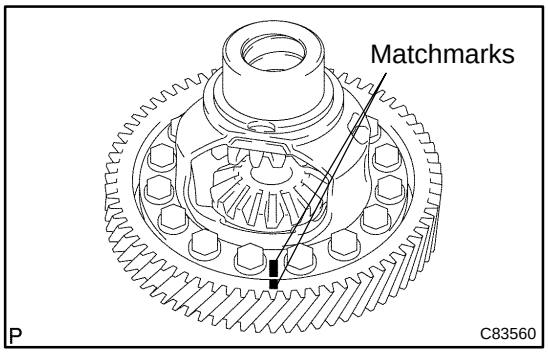
OVERHAUL

4104X–01



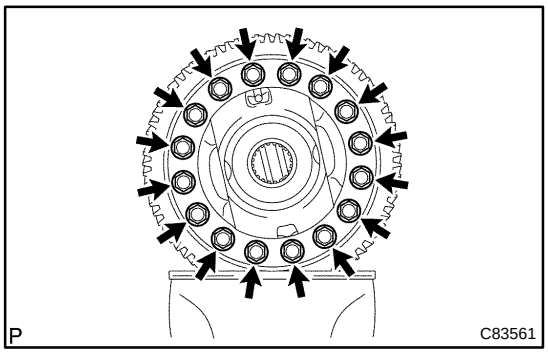
1. REMOVE SPEEDOMETER DRIVE (MTM) GEAR

(a) Remove the speedometer drive (MTM) gear from front differential case assy.

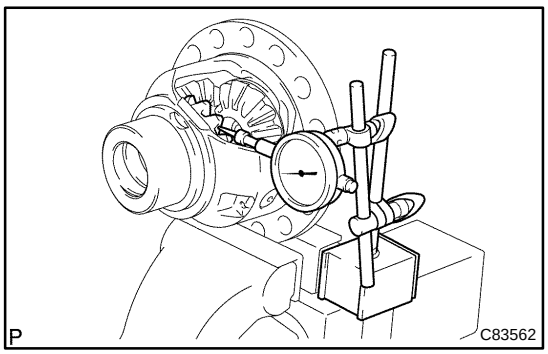


2. REMOVE FRONT DIFFERENTIAL RING GEAR

(a) Place machmarks on the front differential ring gear and from the front differential case.



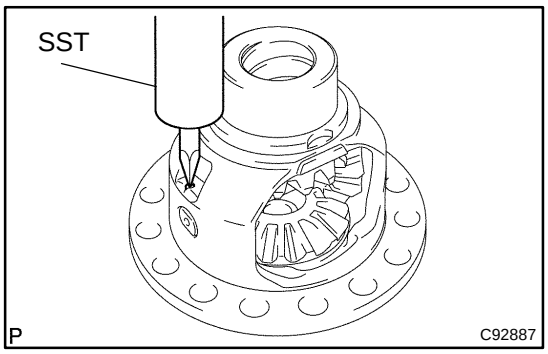
(b) Remove the 16 bolts. Using a plastic hammer, remove the front differential case.



3. INSPECT FRONT DIFFERENTIAL SIDE GEAR BACKLASH

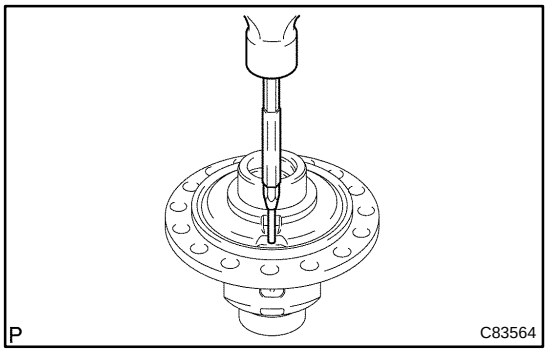
(a) Fixing the front differential pinion to the front differential case side. Using a dial indicator, measure the front differential side gear backlash.

Standard backlash:
0.05 – 0.20 mm (0.0020 – 0.0079 in.)

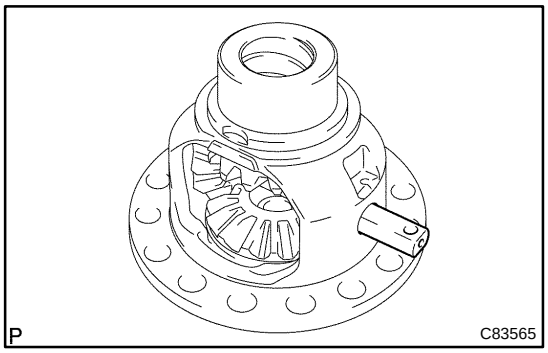


4. REMOVE FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN

(a) Using SST and a hammer, unstake the stacked part of the front differential case.
SST 09930–00010

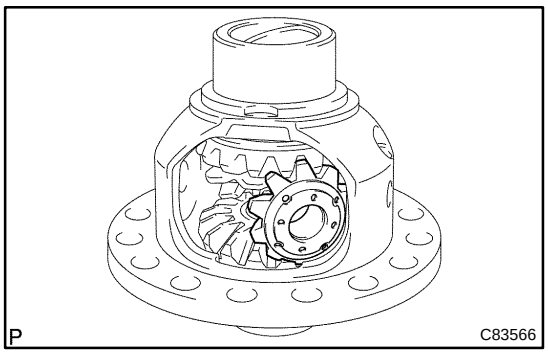


(b) Using a pin punch and a hammer, remove the front differential pinion shaft straight pin from the front differential case.



5. REMOVE FRONT DIFFERENTIAL PINION SHAFT NO.1

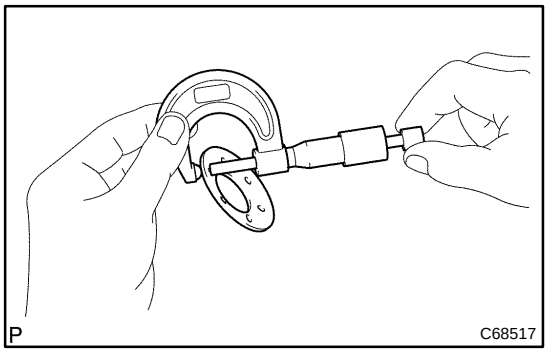
(a) Remove the front differential pinion shaft No.1 to the front differential case.



6. REMOVE FRONT DIFFERENTIAL SIDE GEAR

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

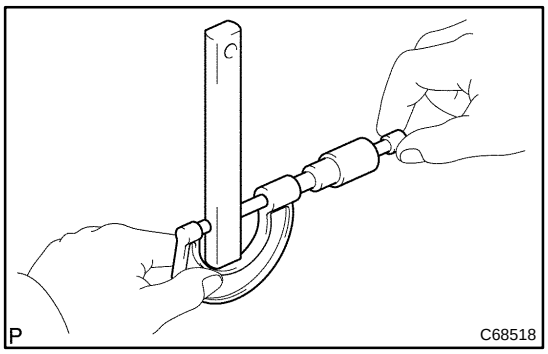
HINT:
Revolving front differential pinion, remove the 2 pinion thrust washers and side gear thrust washers.



7. INSPECT FRONT DIFFERENTIAL PINION THRUST WASHER

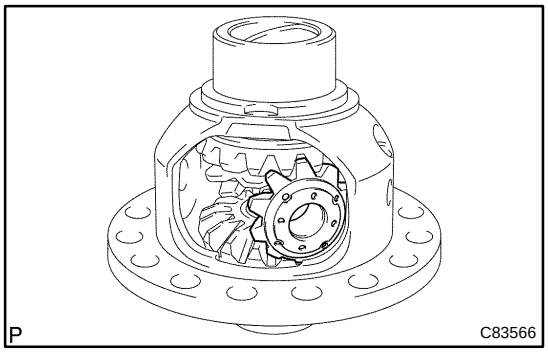
(a) Using a micrometer, measure the thickness of the front differential pinion thrust washer.
Minimum thickness: 0.9 mm (0.035 in.)

If the thickness smaller than the minimum, replace the front differential pinion thrust washer.



8. INSPECT FRONT DIFFERENTIAL PINION SHAFT NO.1

(a) Using a micrometer, measure the outer diameter of the front differential pinion shaft No.1.
Minimum thickness: 17.975 mm (0.70768 in.)



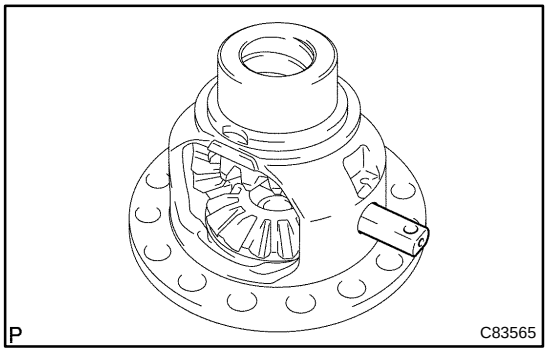
9. INSTALL FRONT DIFFERENTIAL SIDE GEAR

(a) Coat the rotating surface of the front differential side gear with gear oil.
(b) Install the 2 front differential side gear thrust washers to the 2 front differential side gears.

HINT:
Install the front differential side gear as thick as the removed one.

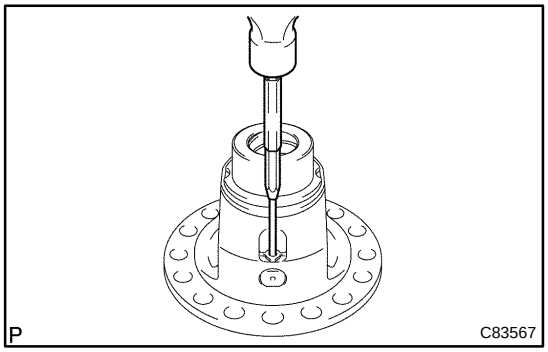
(c) Install the 2 front differential side gears, 2 front differential pinions and 2 front differential side gear thrust washers to the front differential case.

HINT:
Revolving the front differential pinion, install the 2 front differential pinions with front differential washers.



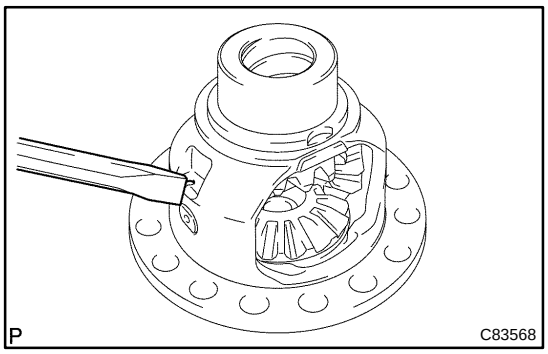
10. INSTALL FRONT DIFFERENTIAL PINION SHAFT NO.1

(a) Coat the rotating surface of the front differential pinion shaft No.1 with gear oil.
(b) Install the front differential pinion shaft No.1 to the front differential case so that the hole for the front differential pinion shaft straight pin is aligned with the hole in the front differential case.

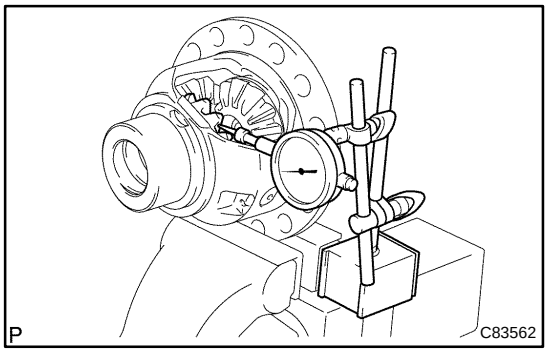


11. INSTALL FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN

(a) Using a pin punch and a hammer, install the front differential pinion shaft straight pin to the front differential case.



(b) Using a chisel and hammer, stake the front differential case hole.

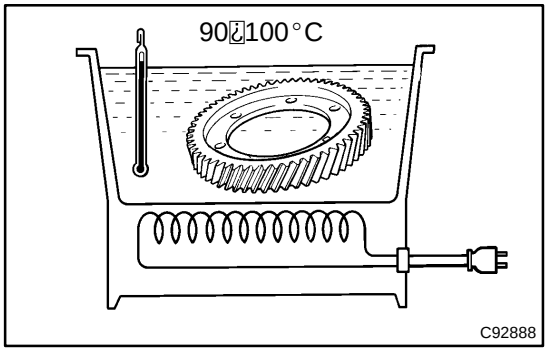


12. ADJUST FRONT DIFFERENTIAL SIDE GEAR BACKLASH

(a) Hold the front differential pinion to the front differential case side. Using a dial indicator, measure the front differential side gear backlash.
Standard backlash: 0.05 – 0.2 mm (0.0020 – 0.0079 in.)

(b) If the backlash is out of the specification, select another front differential side gear thrust washer and adjust it.
Thrust washer: mm (in.)

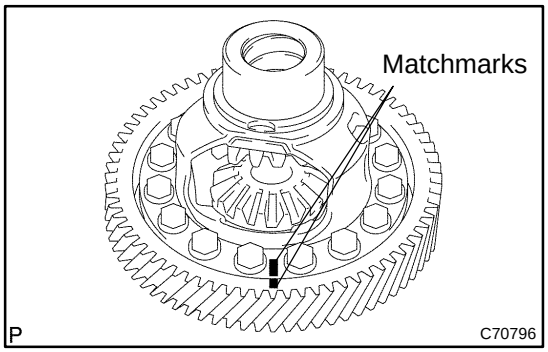
Part No.	Thickness	Mark
41361–28230	1.00 (0.0394)	1
41361–28240	1.10 (0.0433)	2
41361–28250	1.20 (0.0472)	3
41361–28260	1.30 (0.0512)	4



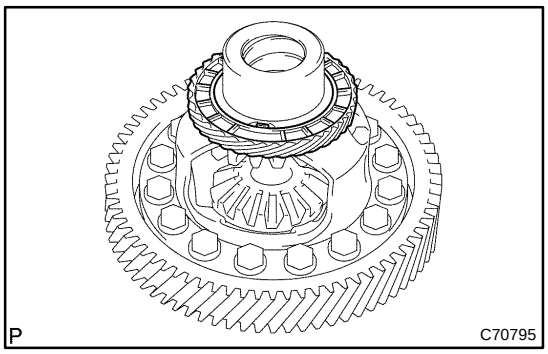
13. INSTALL FRONT DIFFERENTIAL RING GEAR

(a) Using a heater, heat the front differential ring gear to 90 – 100 °C (194.0 – 230.0 °F).

(b) Clean the contact surface differential case.



(c) Aligning the matchmarks, quickly install the front differential ring gear to the front differential case.
Torque: 106 N·m (1,081 kgf·cm, 78 ft·lbf)



14. INSTALL SPEEDOMETER DRIVE (MTM) GEAR

(a) Install the speedometer drive (MTM) gear to the front differential case.