410CU–01

OVERHAUL

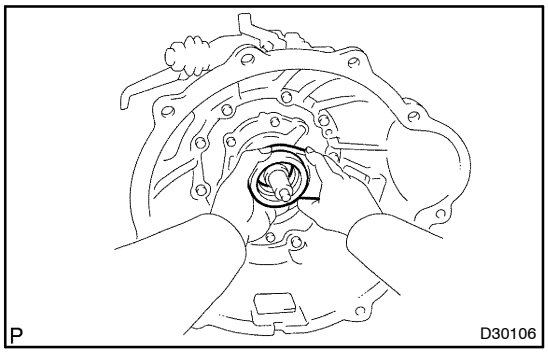
NOTICE:

When working with FIPG (Seal packing) material, you must observe the following items.

- **Using a razor blade and gasket scraper, remove all the old FIPG material from the gasket surfaces.**
- **Thoroughly clean all components to remove all the loose material.**
- **Clean both sealing surfaces with non–residue solvent.**
- **Apply FIPG to an approx. 1.2 mm (0.05 in.) wide bead along the sealing surface.**
- **Parts must be assembled within 10 minutes after application. Otherwise, the FIPG material must be removed and reapplied.**

1. REMOVE DRAIN PLUG

2. REMOVE FILLER PLUG

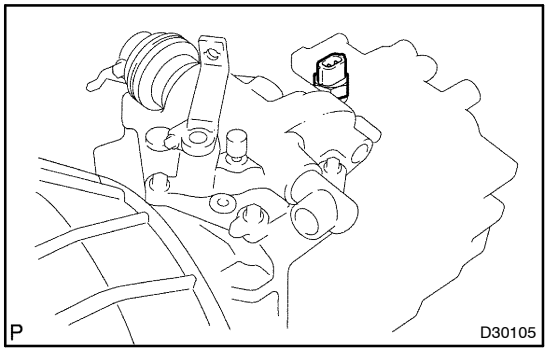


3. REMOVE CLUTCH RELEASE BEARING ASSY

4. REMOVE CLUTCH RELEASE FORK SUB–ASSY

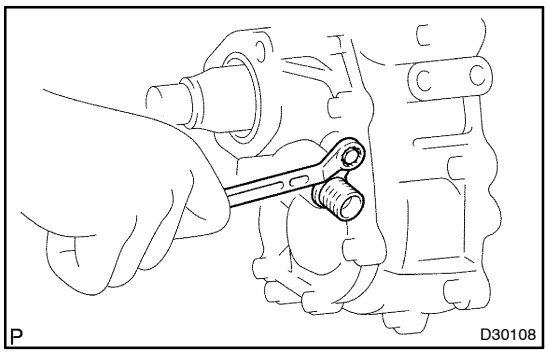
5. REMOVE RELEASE FORK SUPPORT

6. REMOVE CLUTCH RELEASE FORK BOOT

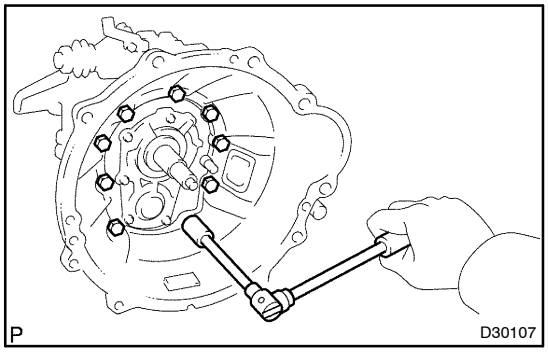


7. REMOVE BACK–UP LAMP SWITCH ASSY

(a) Using SST, remove the switch.
SST 09817–16011

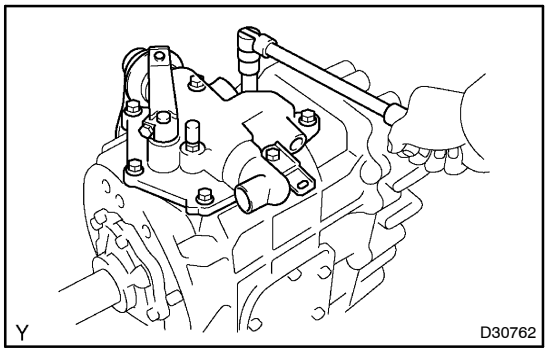


8. REMOVE SPEEDOMETER DRIVEN (MTM) GEAR SUB–ASSY



9. REMOVE CLUTCH HOUSING

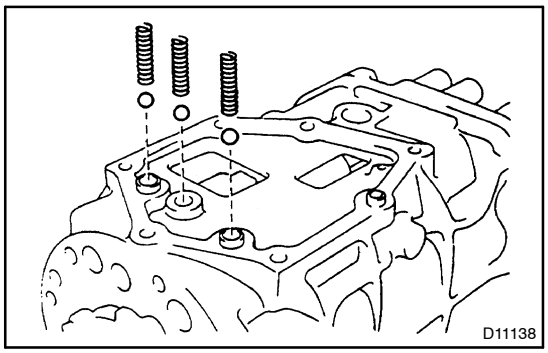
(a) Remove the 9 bolts and clutch housing.



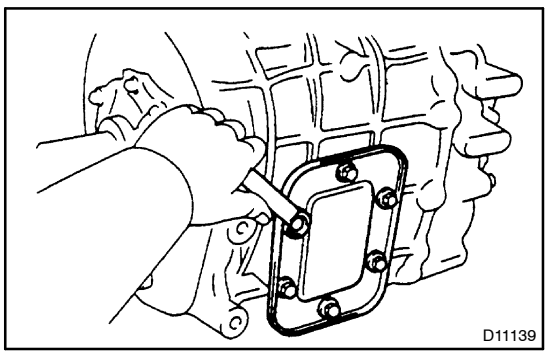
10. REMOVE SHIFT LEVER SHAFT HOUSING ASSY

(a) Remove the 7 bolts and wire clamp.

(b) Using a plastic–faced hammer, tap the shift lever shaft housing.

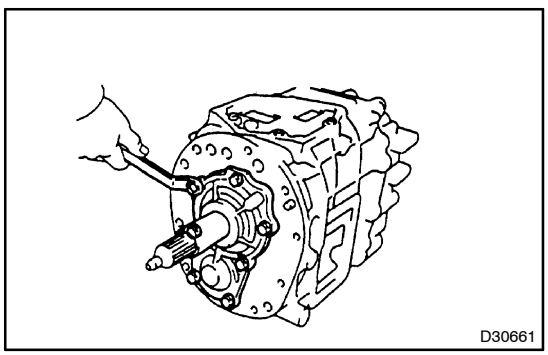


(c) Using a magnetic finger, remove the 3 springs and balls.



11. REMOVE MANUAL TRANSMISSION POWER TAKE–OFF COVER

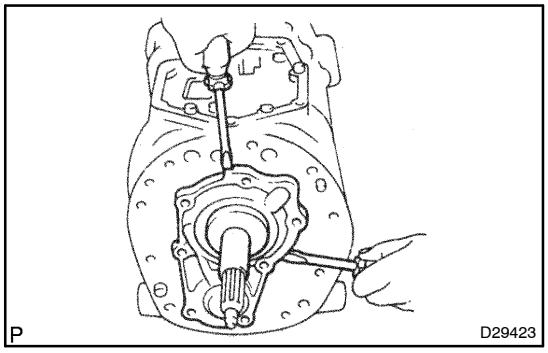
(a) Remove the 6 bolts, cover and gasket.



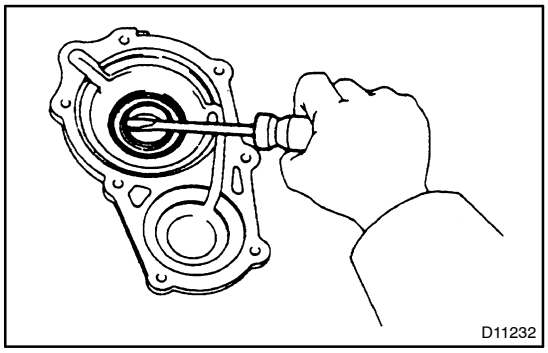
12. REMOVE BEARING RETAINER FRONT (MTM)

(a) Remove the 7 bolts.

(b) Using a brass bar and a hammer, tap the bearing retainer.

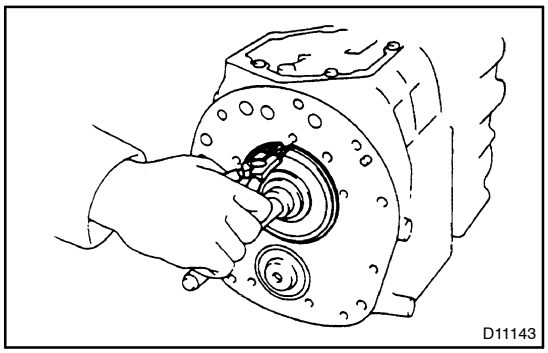


(c) Using 2 screwdrivers, pry out the bearing retainer.



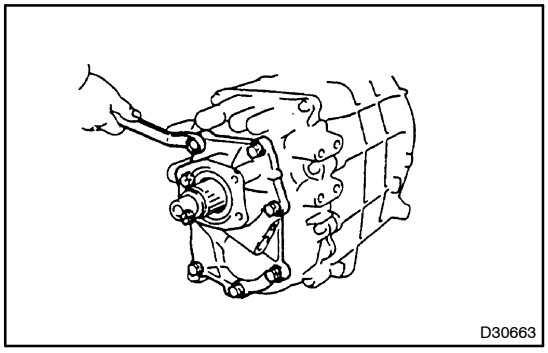
13. REMOVE TRANSMISSION FRONT BEARING RETAINER OIL SEAL

(a) Using a screwdriver, pry out the oil seal.



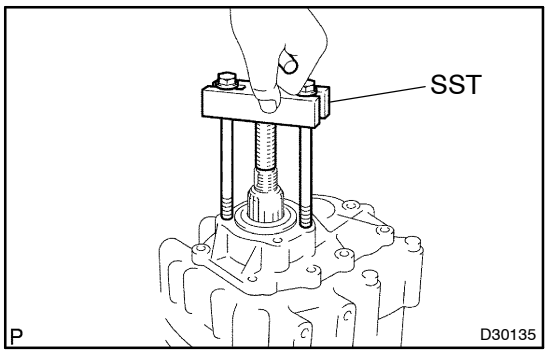
14. REMOVE FRONT BEARING SNAP RING

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

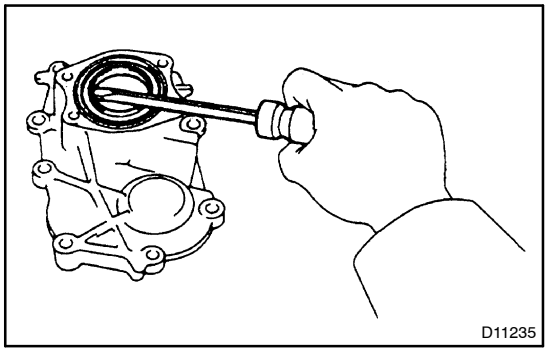


15. REMOVE OUTPUT SHAFT REAR BEARING (MTM) RETAINER

(a) Remove the 8 bolts.

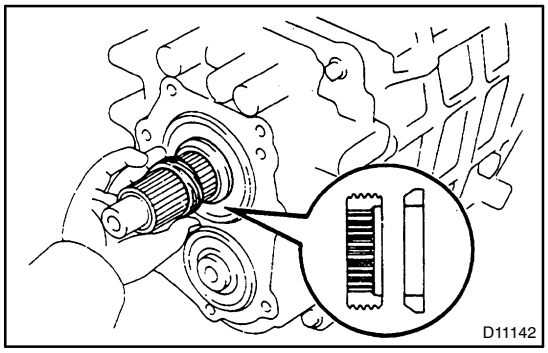


(b) Using SST, remove the bearing retainer.
SST 09950–50013 (09951–05010, 09952–05010, 09953–05020, 09954–05040)



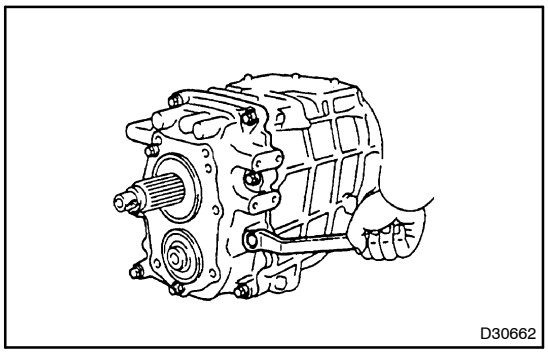
16. REMOVE TRANSMISSION REAR BEARING RETAINER OIL SEAL

(a) Using a screwdriver, pry out the oil seal.



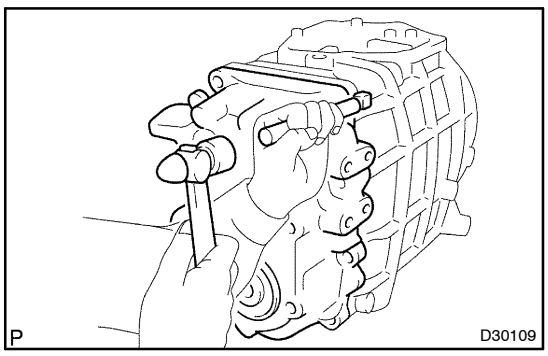
17. REMOVE SPEEDOMETER DRIVE (MTM) GEAR

18. REMOVE SPEEDOMETER DRIVE GEAR SPACER

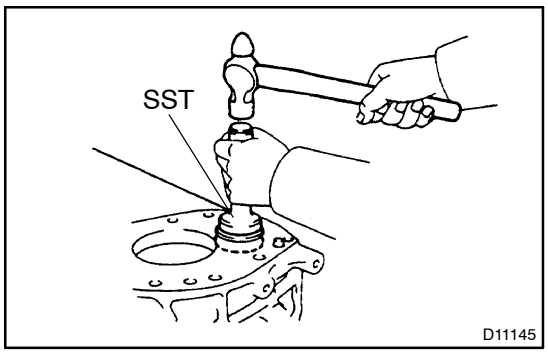


19. REMOVE TRANSMISSION FRONT CASE

(a) Remove the 9 bolts.



(b) Using a brass bar and hammer, carefully tap out the case.

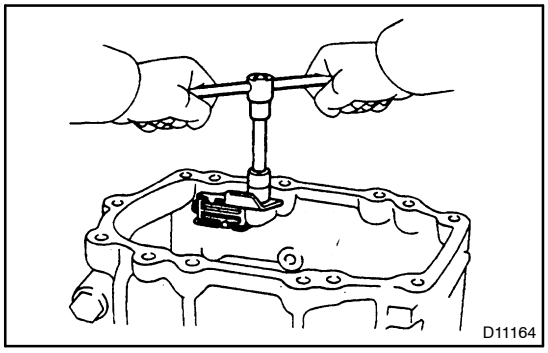


20. REMOVE COUNTER GEAR FRONT BEARING OR ROLLER

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

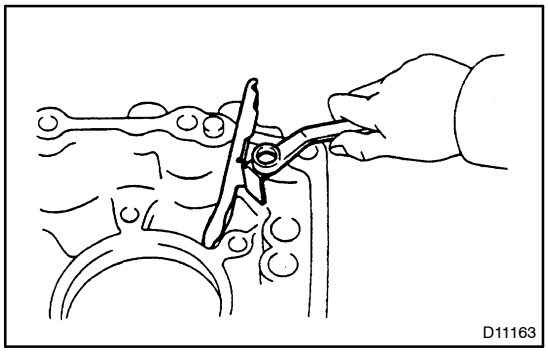
(b) Using SSTand a hammer, tap out the bearing.

SST 09505–20010



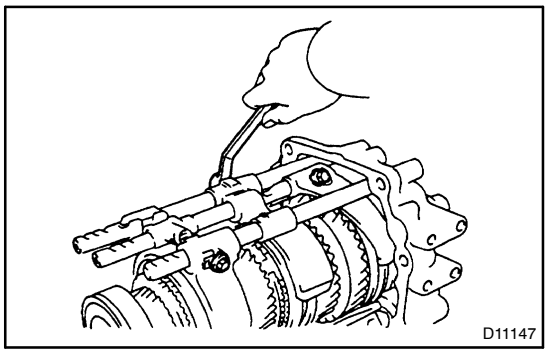
21. REMOVE TRANSMISSION MAGNET

(a) Remove the bolt and magnet.

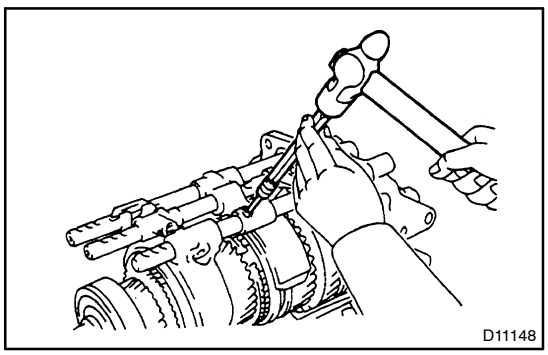


22. REMOVE OIL RECEIVER PIPE

(a) Remove the bolt and receiver pipe.

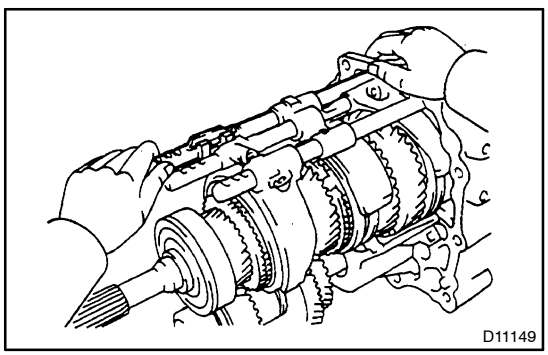


23. REMOVE SHIFT FORK SET BOLT



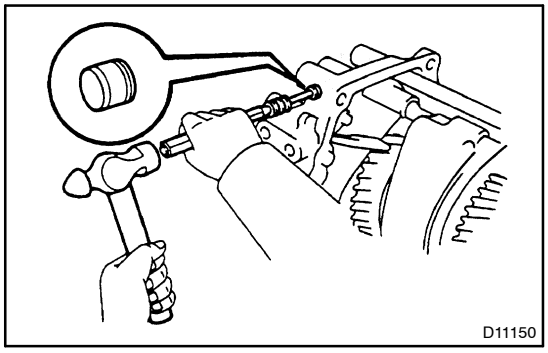
24. REMOVE SHIFT HEAD SET SLOTTED SPRING PIN

(a) Using a pin punch and hammer, tap out the pin.

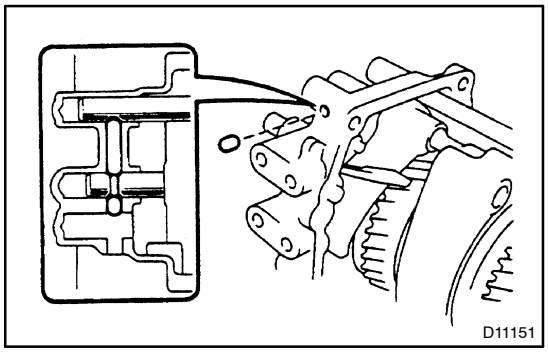


25. REMOVE GEAR SHIFT FORK SHAFT NO.2

(a) Pull out the shift fork shaft.

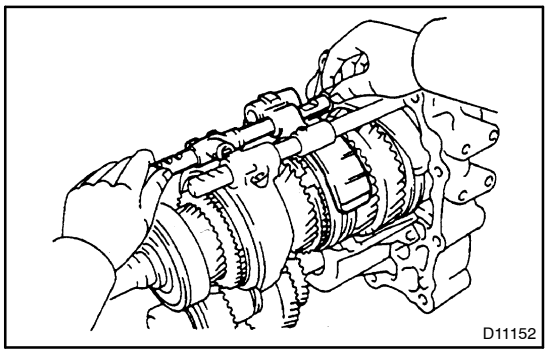


(b) Using a pin punch and a hammer, tap out the plug.



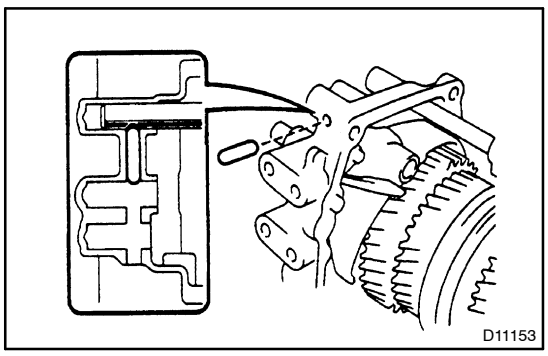
26. INSTALL INPUT SHAFT

(a) Using a magnetic finger, remove the interlock pin No.1.



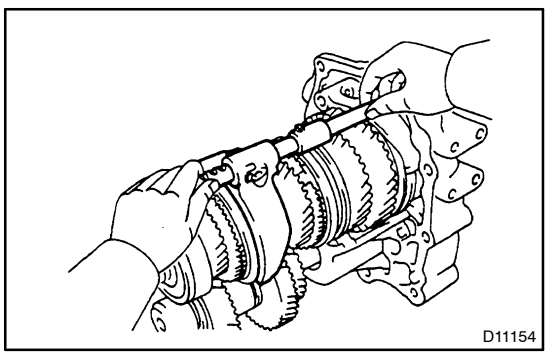
27. REMOVE GEAR SHIFT FORK SHAFT SUB–ASSY NO.1

(a) Pull out the shift fork shaft No. 1.
(b) Using a magnetic finger, remove the roller from the shaft hole.
(c) Remove the shift fork No. 2.



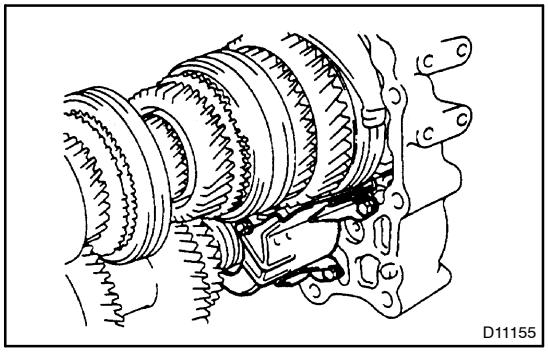
28. REMOVE SHIFT INTERLOCK PIN NO.2

(a) Using a magnetic finger, remove the interlock pin from the rear case.



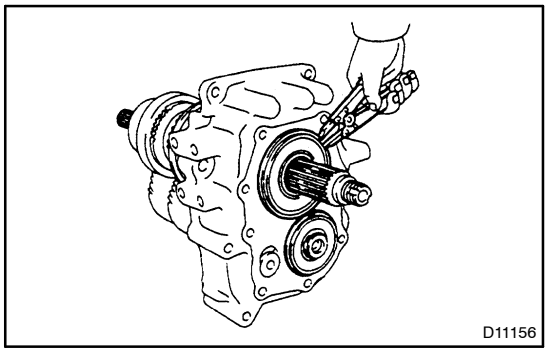
29. REMOVE GEAR SHIFT FORK SHAFT NO.3

(a) Pull out the shift fork shaft No. 3.
(b) Remove the shift fork No. 3 and shift head.



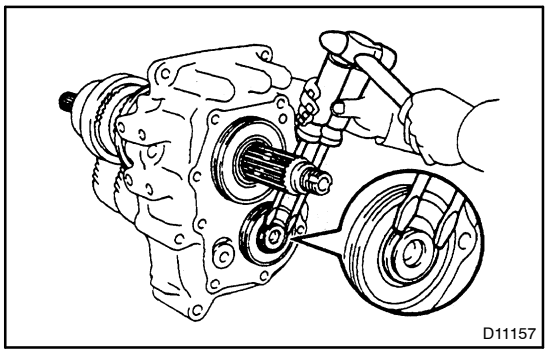
30. REMOVE MANUAL TRANSMISSION CASE RECEIVER

(a) Remove the 3 bolts and oil receiver.



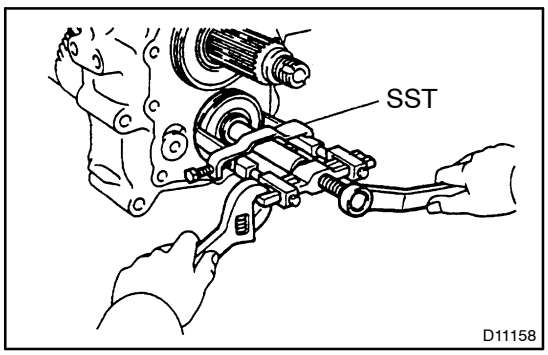
31. REMOVE OUTPUT SHAFT BEARING SHAFT SNAP RING

(a) Using snap ring pliers, remove the 2 snap rings.



32. REMOVE SNAP RING COUNTER GEAR REAR BEARING

(a) Using 2 screwdrivers and a hammer, tap out the snap ring.

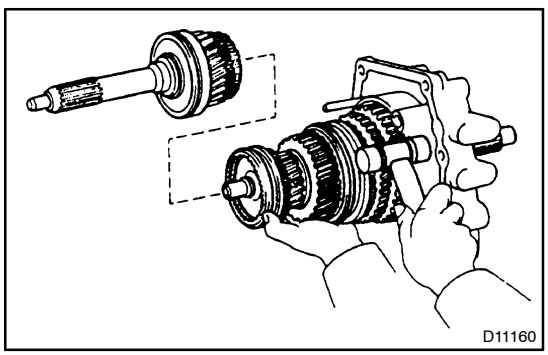


33. REMOVE COUNTER GEAR REAR BEARING

(a) Using SST, remove the rear bearing.

SST 09950–40011 (09951–04010, 09952–04010, 09953–04030, 09954–04010, 09955–04011, 09957–04010, 09958–04010)

34. REMOVE COUNTER GEAR



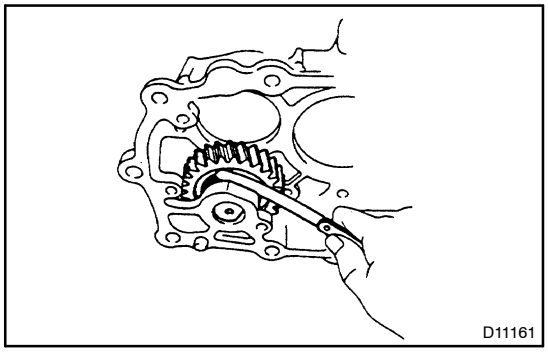
35. REMOVE INPUT SHAFT

(a) Remove the input shaft with the 12 needle roller bearings from the output shaft.

36. REMOVE OUTPUT SHAFT

(a) Remove the output shaft from the rear case by pulling the output shaft and tapping on the rear case with a plastic hammer.

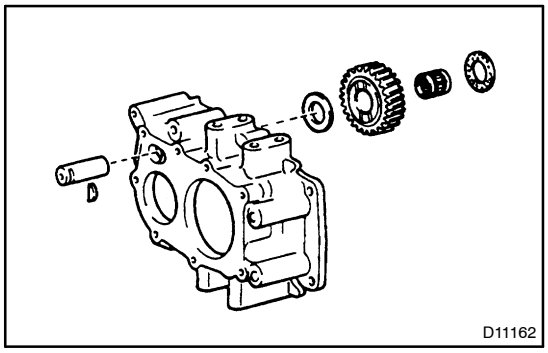
(b) Remove the shift fork No. 1.



37. INSPECT REVERSE IDLER GEAR THRUST CLEARANCE

(a) Using a filler gauge, measure the gear thrust clearance.
Standard clearance:
0.10 – 0.50 mm (0.0039 – 0.0197 in.)

If the clearance is greater than the standard, replace the thrust washers.

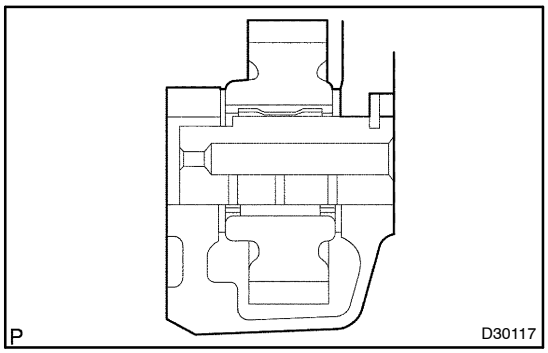


38. REMOVE REVERSE IDLER GEAR SUB–ASSY

(a) Pull out the shaft toward the rear.
(b) Remove the idler gear and thrust washers.

39. INSTALL REVERSE IDLER GEAR SUB–ASSY

(a) Apply MP grease to the thrust washers.
(b) Install the idle gear and thrust washers.

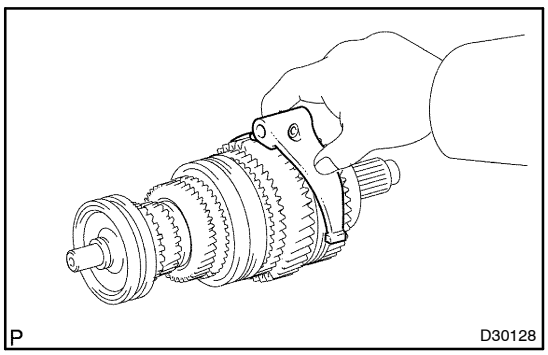


HINT:

- Make sure that the dimpled surfaces of both washers face the reverse idler gear.
- Make sure that the protruding part of the rear washer fits in the case groove.

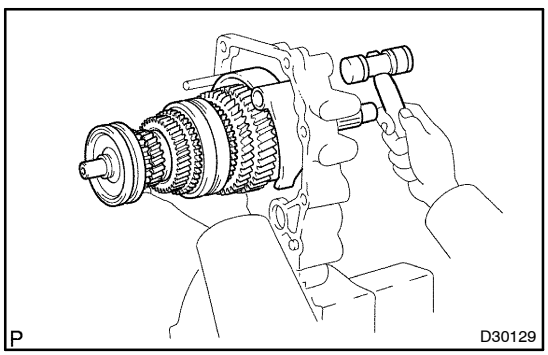
(c) Install the shaft with the woodruff key through the gear.

40. INSPECT REVERSE IDLER GEAR THRUST CLEARANCE (See Step 37)

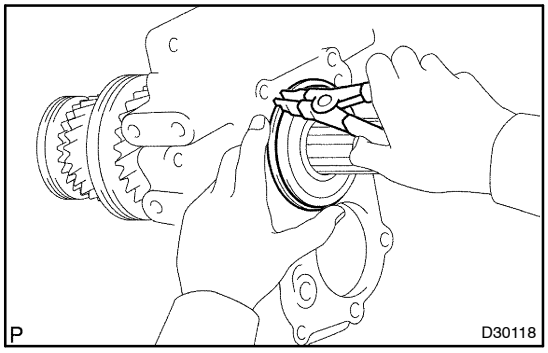


41. INSTALL OUTPUT SHAFT

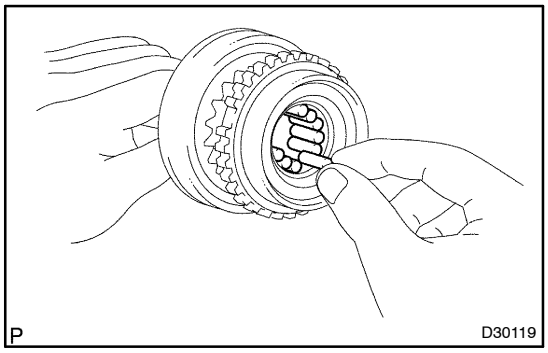
(a) Place the shift fork No. 1 into the groove of the hub sleeve No. 1.



(b) Install the output shaft into the rear case by pushing on the output shaft and tapping on the rear case.

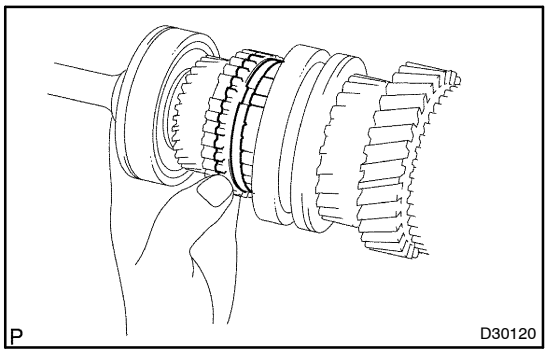


(c) Using snap ring pliers, install the snap ring.

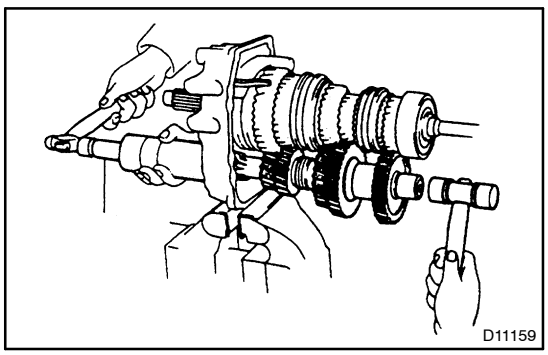


42. INSTALL INPUT SHAFT

(a) Apply MP grease to the 12 needle roller bearings and install them into the input shaft.



(b) Install the input shaft to the output shaft with the synchronizer ring slots aligned with the shifting keys.



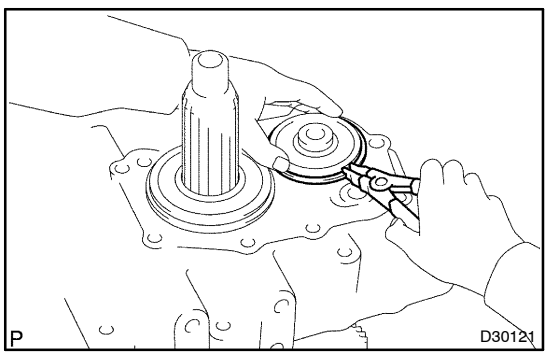
43. INSTALL COUNTER GEAR

(a) Install the counter gear into the rear case while holding the counter gear, and install the counter rear bearing with SST.

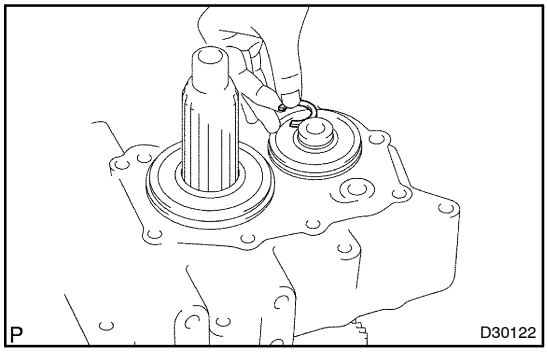
SST 09316–60011 (09316–00011, 09316–00031)

HINT:

When installing the rear bearing, support the counter gear in front with a 3–5 lb hammer or equivalent. Make sure that the output shaft and counter gear do not interfere with each other.



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

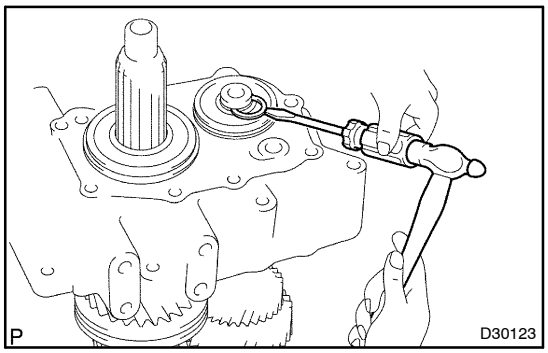


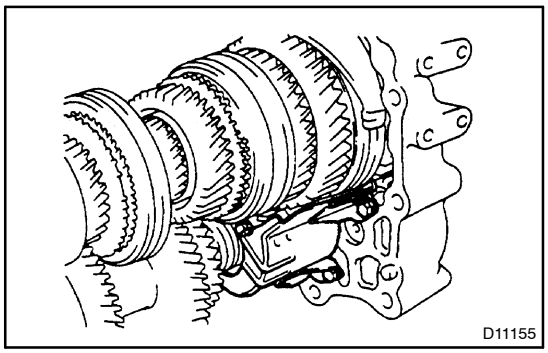
44. INSTALL OUTPUT SHAFT BEARING SHAFT SNAP RING

(a) Select a snap ring that allows minimum axial play.

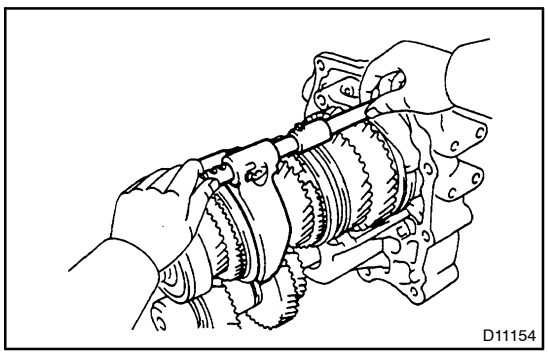
Mark	Thickness mm (in.)
0	1.95 – 2.00 (0.0768 – 0.0787)
1	2.00 – 2.05 (0.0787 – 0.0807)
2	2.05 – 2.10 (0.0807 – 0.0827)
3	2.10 – 2.15 (0.0827 – 0.0846)
4	2.15 – 2.20 (0.0846 – 0.0866)
5	2.20 – 2.25 (0.0866 – 0.0886)

(b) Using a screwdriver and hammer, tap in the snap ring.





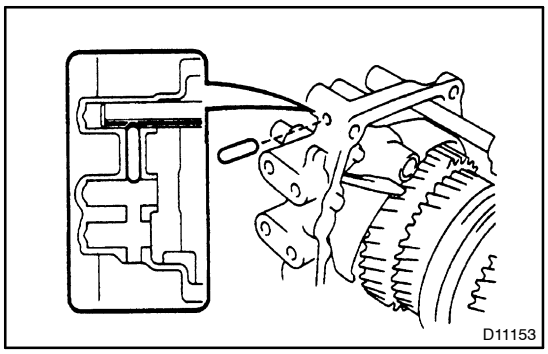
45. INSTALL MANUAL TRANSMISSION CASE RECEIVER



46. INSTALL GEAR SHIFT FORK SHAFT NO.3

(a) Place the shift fork No. 3 into the groove of the hub sleeve No. 3.

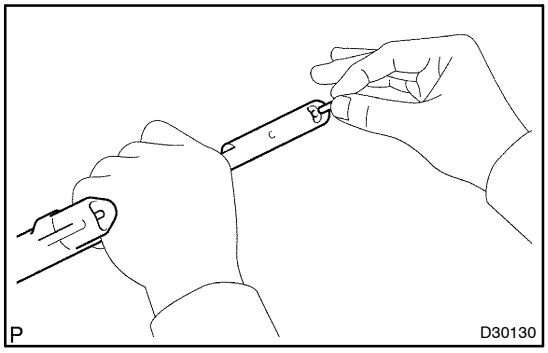
(b) Install the shift fork shaft No. 3 to the rear case through the shift fork No. 3 and shift head.



47. INSTALL SHIFT INTERLOCK PIN NO.2

(a) Apply MP grease to the interlock pin No.2.

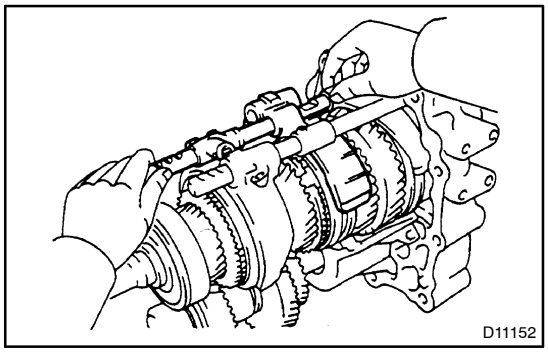
(b) Insert the interlock pin into the rear case.



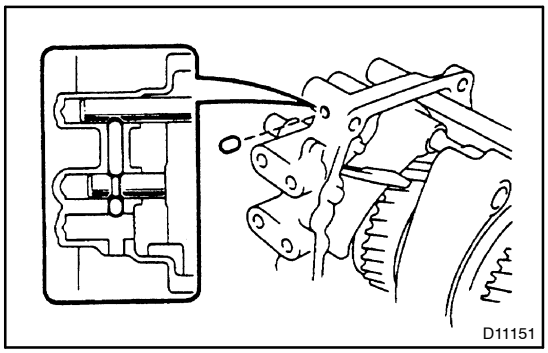
48. INSTALL GEAR SHIFT FORK SHAFT SUB–ASSY NO.1

(a) Apply MP grease to the roller.

(b) Install the roller into the shaft hole.



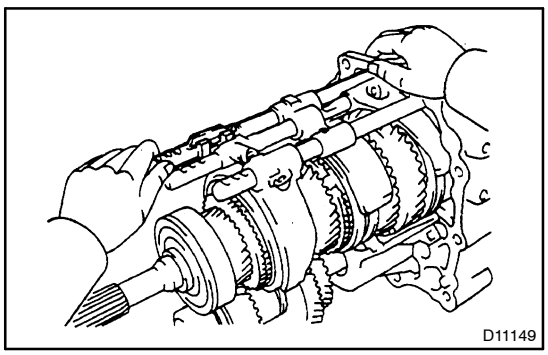
(c) Install the shift fork shaft No. 1 to the rear case through the shift fork No. 2 and shift fork No. 1.



49. INSTALL SHIFT INTERLOCK PIN NO.1

(a) Apply MP grease to the interlock pin No.1.

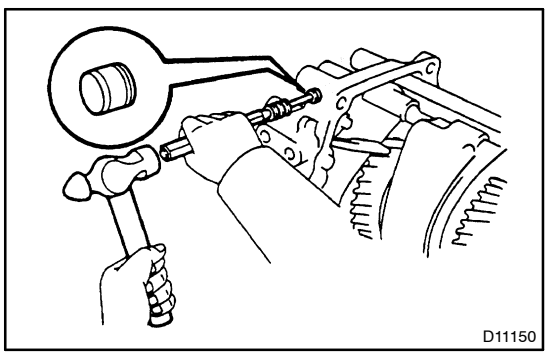
(b) Install the interlock pin No.1 into the rear case.



50. INSTALL GEAR SHIFT FORK SHAFT NO.2

(a) Place the shift fork No. 2 into the groove of the hub sleeve No. 2.

(b) Install the shift fork shaft No. 2 to the rear case through the shift fork No. 2.

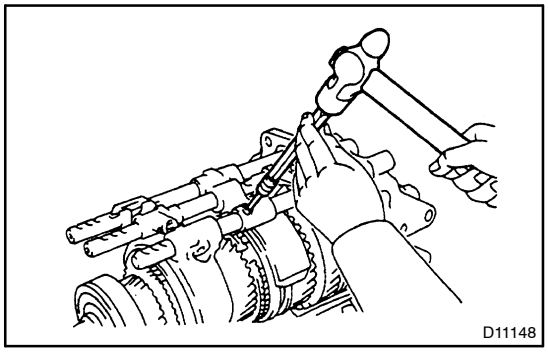


(c) Apply seal packing to the hole plug, and install the hole plug to the rear case.

Seal packing:

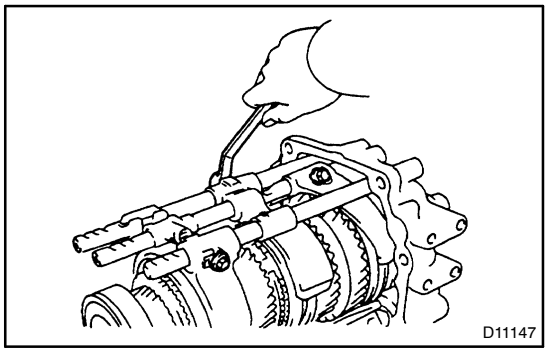
Part No. 08833 – 00070, THREE BOND 1324 or equivalent

Tap in depth: 0.3 – 1.3 mm (0.012 – 0.051 in.)



51. INSTALL SHIFT HEAD SET SLOTTED SPRING PIN

(a) Using a pin punch and hammer, tap in the slotted spring pin to the shift head.



52. INSTALL SHIFT FORK SET BOLT

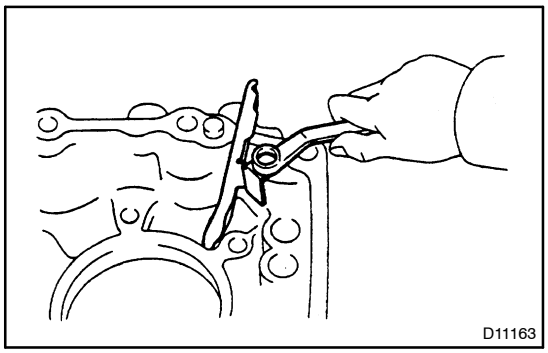
(a) Install the 3 bolts.

Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)

53. CHECK INTERLOCK

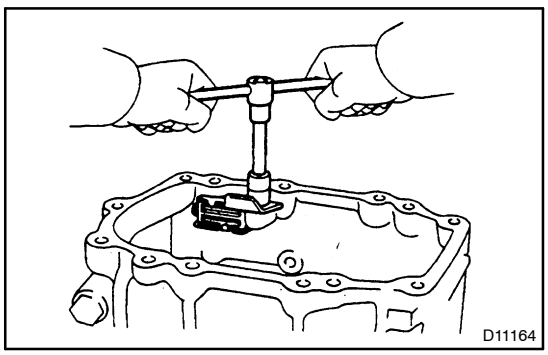
(a) Shift the fork shaft No. 1 into the 1st speed position.

(b) Check that the fork shaft No. 2 and fork shaft No. 3 should not move.



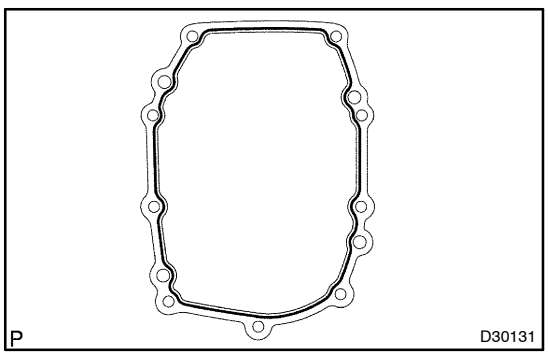
54. INSTALL OIL RECEIVER PIPE

Torque: 4.9 N·m (50 kgf·cm, 43 in.·lbf)



55. INSTALL TRANSMISSION MAGNET

Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

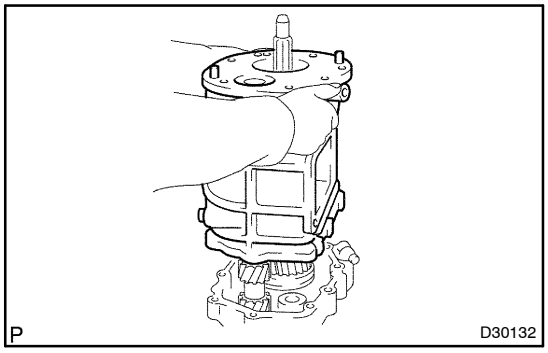


56. INSTALL MANUAL TRANSMISSION CASE SUB–ASSY

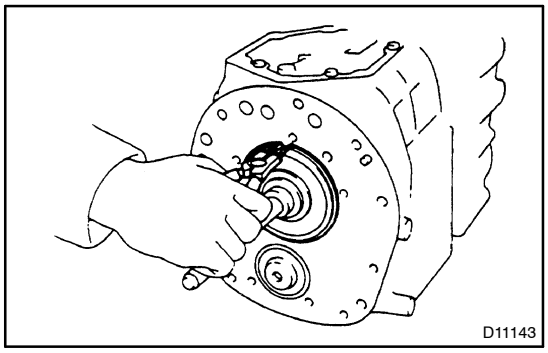
(a) Apply seal packing to the case, as shown in the illustration.

Seal packing:

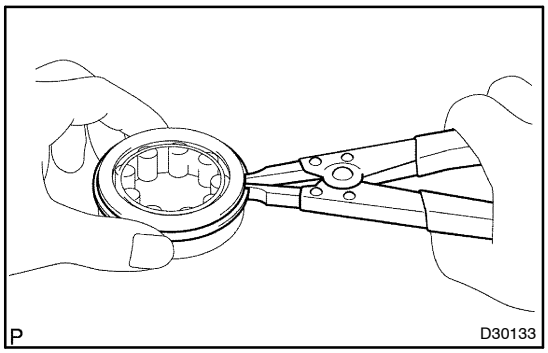
Part No. 08826 – 000090, THREE BOND 1281 or equivalent



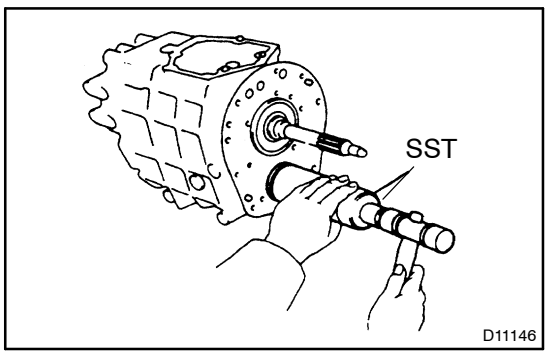
(b) Align each bearing outer race and each fork shaft end with the case installation holes, and install the case. If necessary, tap on the case with a plastic–faced hammer.



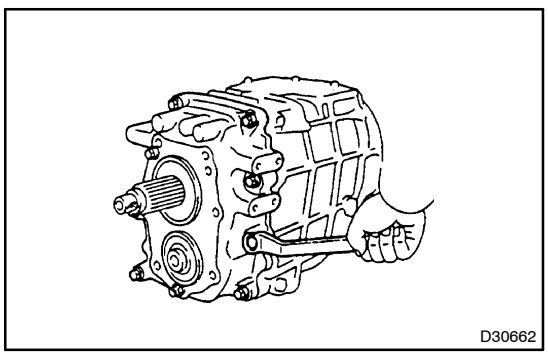
(c) Using snap ring pliers, install the snap ring to the input shaft bearing.



(d) Using snap ring pliers, install the snap ring.

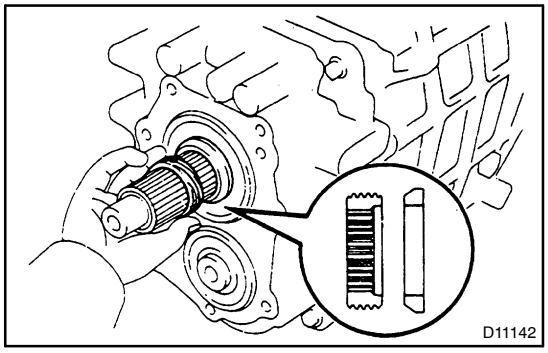


(e) Using SST, tap in the counter front bearing.
SST 09316–60011 (09316–00011)



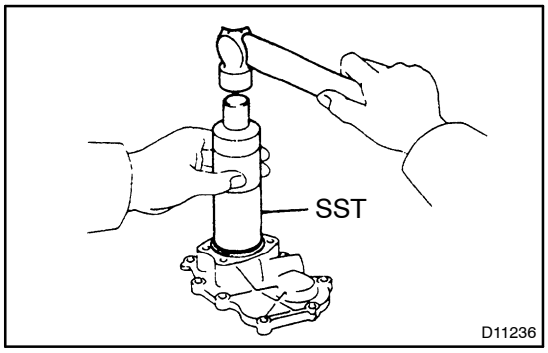
(f) Apply seal packing to the bolts.
Seal packing:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent

(g) Install the 9 bolts.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)



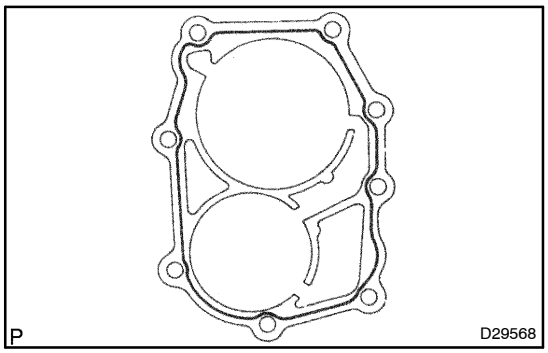
57. INSTALL SPEEDOMETER DRIVE GEAR SPACER

58. INSTALL SPEEDOMETER DRIVE (MTM) GEAR



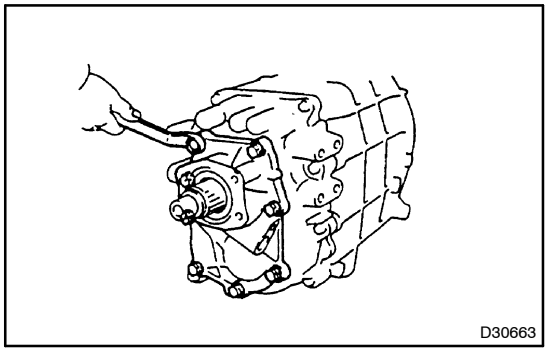
59. INSTALL TRANSMISSION REAR BEARING RETAINER OIL SEAL

(a) Using SST and a hammer, tap in a new oil seal.
SST 09316–60011 (09316–00011)
Drive–in depth: 0.1 – 0.9 mm (0.004 – 0.0035 in.)



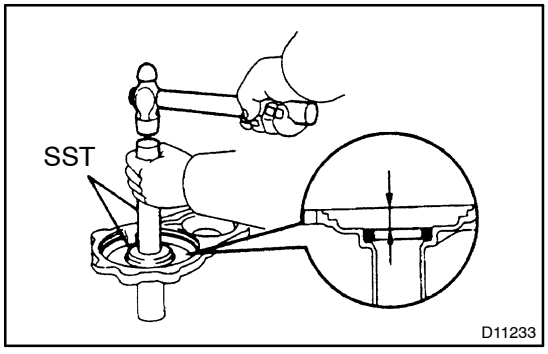
60. INSTALL OUTPUT SHAFT REAR BEARING (MTM) RETAINER

(a) Apply seal packing to the retainer, as shown in the illustration, and install the retainer to the rear case.
Seal packing:
Part No. 08826–00090, THREE BOND 1281 or equivalent



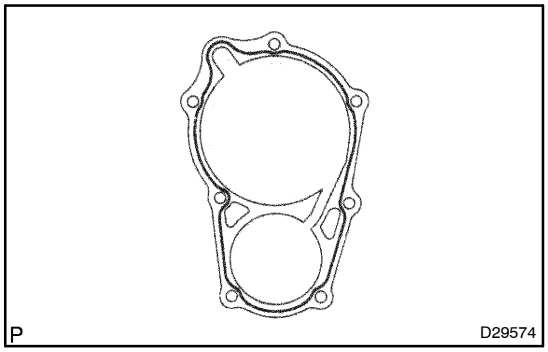
(b) Apply seal packing to the bolts.
Seal packing:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent

(c) Install the 8 bolts.
Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)



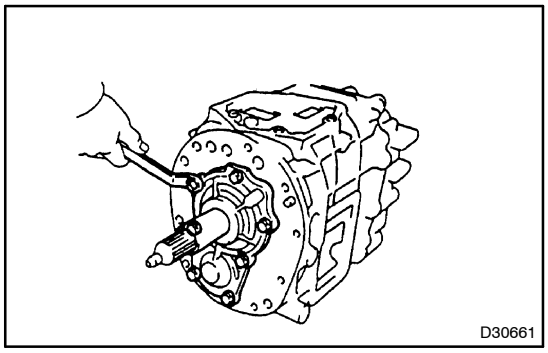
61. INSTALL TRANSMISSION FRONT BEARING RETAINER OIL SEAL

(a) Uning SST and a hammer, tap in a new oil seal.
SST 09950–60010 (09951–00460), 09950–70010 (09951–07150)
Oil seal depth:
14B engine: 15.0 – 15.8 mm (0.590 – 0.622 in.)
W04D–J engine: 15.3 – 16.1 mm (0.602 – 0.634)



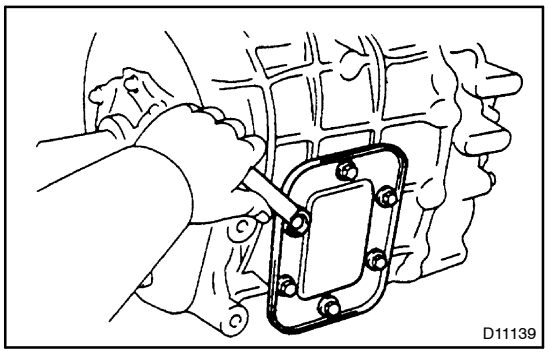
62. INSTALL BEARING RETAINER FRONT (MTM)

(a) Apply seal packing to the retainer, as shown in the illustration, and install the retainer to the front case.
Seal packing:
Part No. 08826–00090, THREE BOND 1281 or equivalent



(b) Apply seal packing to the bolts.
Seal packing:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent

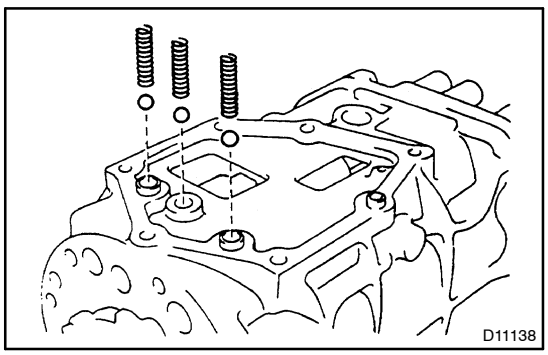
(c) Install the 7 bolts.
Torque: 17 N·m (170 kgf·cm, 12 ft·lbf)



63. INSTALL MANUAL TRANSMISSION POWER TAKE–OFF COVER

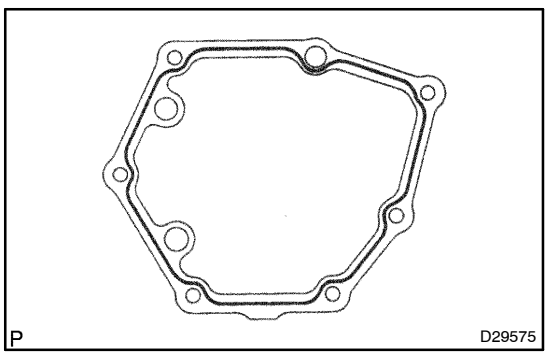
(a) Apply seal packing to the bolts.
Seal packing:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent

(b) Install a new gascket and the power take–off cover with the 6 bolts.
Torque: 14 N·m (145 kgf·cm, 11 ft·lbf)



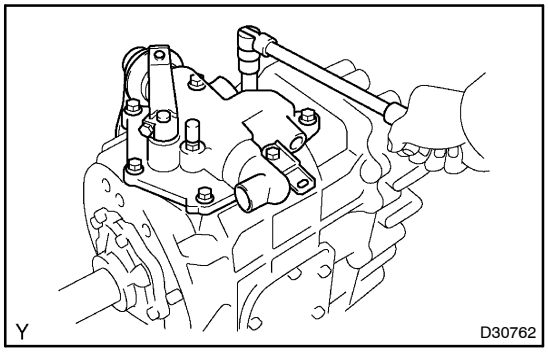
64. INSTALL SHIFT LEVER SHAFT HOUSING ASSY

(a) Install the 3 balls and springs.



(b) Apply seal packing to the housing as shown in the illustration, and install the housing to the front case.
Seal packing:
Part No. 08826–00090, THREE BOND 1281 or equivalent

HINT:
Make sure that the tip of the shift lever No. 2 is securely positioned in the shift head.

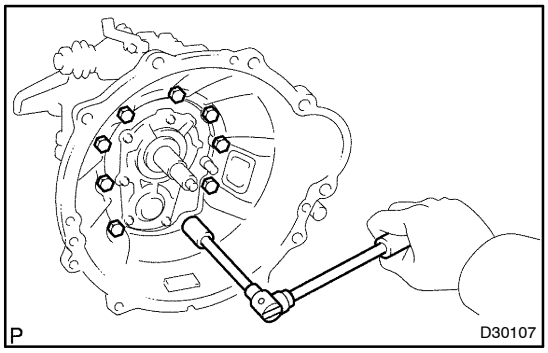


(c) Apply seal packing to the bolts.
Seal packing:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent

(d) Install the 7 bolts.
Torque: 17 N·m (170 kgf·cm, 12 ft·lbf)

HINT:

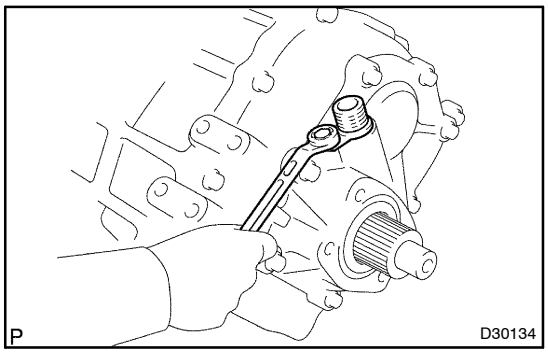
- Check to see that the input and output shafts rotate smoothly.
- Check to see that shifting into all positions is smooth.



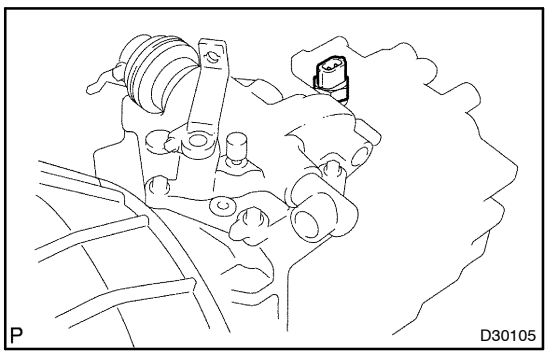
65. INSTALL CLUTCH HOUSING

(a) Install the clutch housing.

(b) Install the 9 bolts.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)



66. INSTALL SPEEDOMETER DRIVEN (MTM) GEAR SUB–ASSY
Torque: 11.3 N·m (115 kgf·cm, 8 ft·lbf)

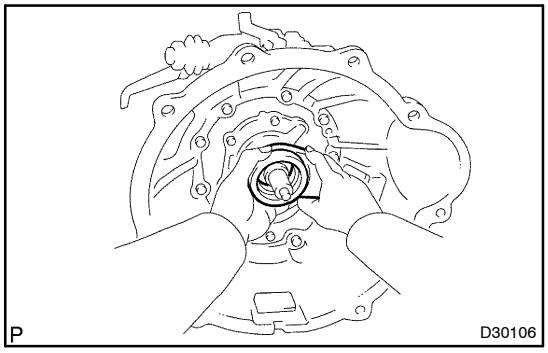


67. INSTALL BACK–UP LAMP SWITCH ASSY

(a) Using SST, install the switch.
SST 09817–16011
Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

68. INSTALL CLUTCH RELEASE FORK BOOT

69. INSTALL RELEASE FORK SUPPORT
Torque: 47 N·m (480 kgf·cm, 35 ft·lbf)



70. INSTALL CLUTCH RELEASE FORK SUB–ASSY

(a) Apply release hub grease to the release fork and hub contact, the release fork and push rod contact, and the release fork pivot points.
Grease:
Part No. 08887–01806, RELEASE HUB GREASE or equivalent

71. INSTALL CLUTCH RELEASE BEARING ASSY

(a) Apply clutch spline grease to the input shaft spline.
Grease:
Part No. 08887–01706, CLUTCH SPLINE GREASE or equivalent

(b) Install the bearing to the release fork, and then install them to the transmission.

72. INSTALL DRAIN PLUG

(a) Install a new gasket and the drain plug.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)

73. INSTALL FILLER PLUG

(a) Install a new gasket and the filler plug.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)