

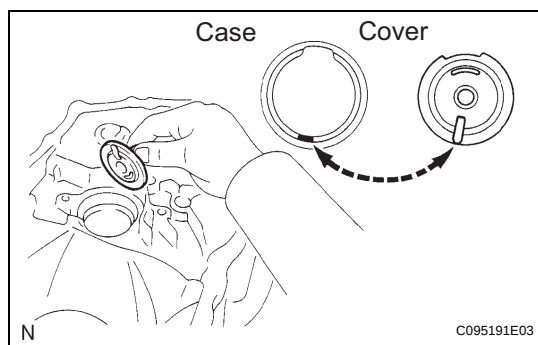
REASSEMBLY

1. INSPECT SYNCHRONIZER RING NO. 3 (See page [MX-47](#))
2. INSPECT TRANSMISSION HUB SLEEVE NO. 3 (See page [MX-48](#))
3. INSPECT 5TH GEAR (See page [MX-48](#))
4. INSPECT REVERSE IDLER GEAR SUB-ASSEMBLY (See page [MX-49](#))
5. INSTALL OUTPUT SHAFT (MTM) COVER

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

NOTICE:

Fit the output shaft (MTM) cover projection into the case side hollow.



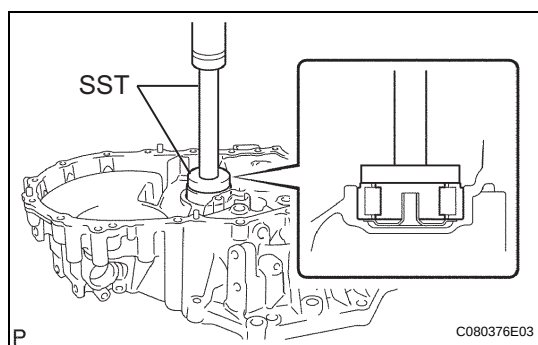
6. INSTALL OUTPUT SHAFT FRONT BEARING

- (a) Coat a new output shaft front bearing with gear oil, and using SST and a press, install it to the transaxle case.

SST 09950-60010 (09951-00550), 09950-70010 (09951-07150)

NOTICE:

- Be sure to install a new bearing in the correct direction, as shown in the illustration.
- When replacing the output shaft front bearing, replace the output shaft front bearing inner race along with it.



7. INSTALL FRONT TRANSAXLE CASE OIL SEAL

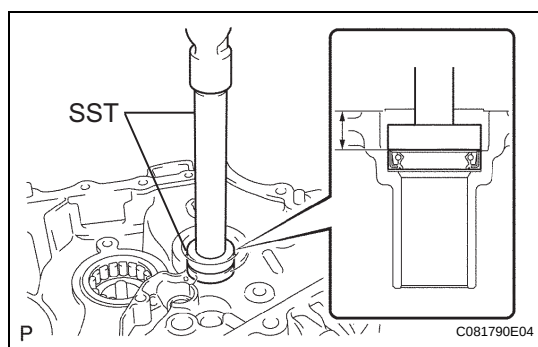
- (a) Using SST and a hammer, install a new front transaxle case oil seal to the transaxle case.

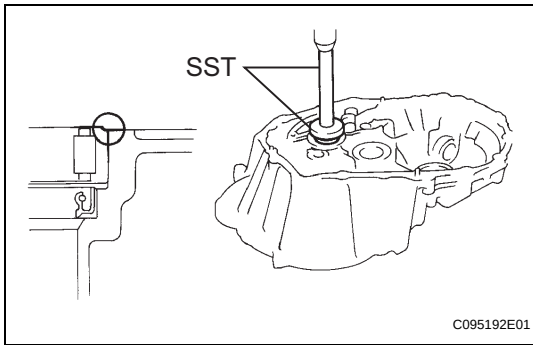
SST 09950-60010 (09951-00370), 09950-70010 (09951-07150)

Drive in depth:

15.6 to 16.0 mm (0.6142 to 0.6299 in.)

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





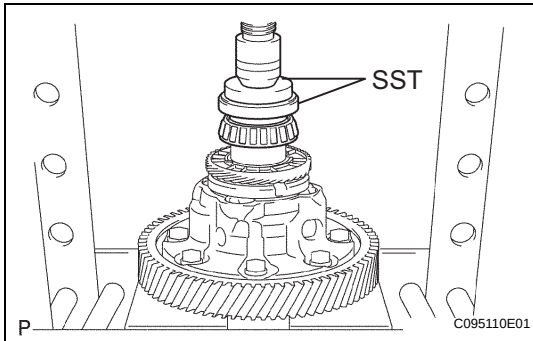
8. INSTALL INPUT SHAFT FRONT BEARING

- (a) Coat a new input shaft front bearing with gear oil, and using SST and a press, install it to the transaxle case.

SST 09950-60010 (09951-00420), 09950-70010 (09951-07150)

Drive in depth:

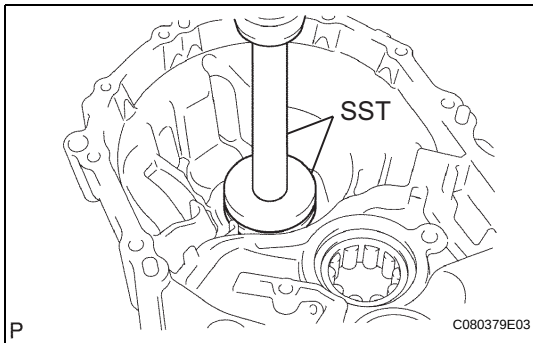
0 to 0.3 mm (0 to 0.012 in.)



9. INSTALL FR DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

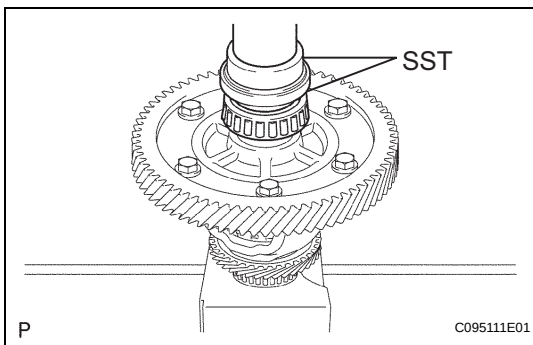
- (a) Using SST and a press, install a new FR differential case front tapered roller bearing (inner race) to the front differential case.

SST 09350-32014 (09351-32120), 09950-60010 (09951-00530)



- (b) Using SST and a press, install a new FR differential case front tapered roller bearing (outer race) with the shim to the transaxle case.

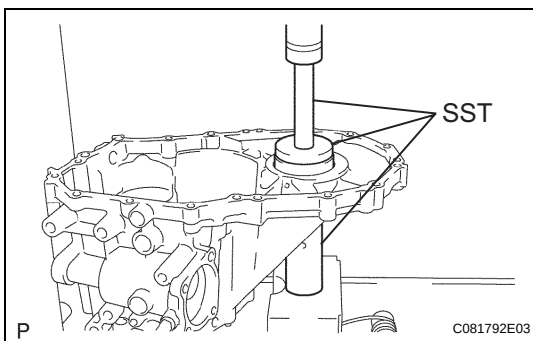
SST 09950-60020 (09951-00680), 09950-70010 (09951-07150)



10. INSTALL FR DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

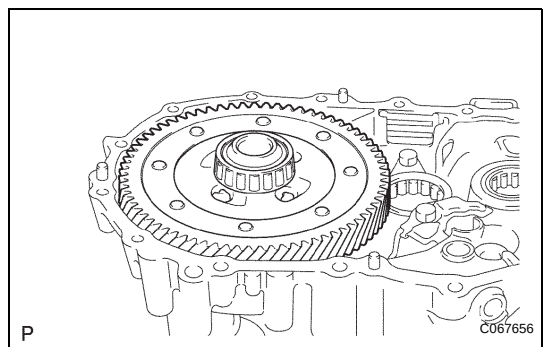
- (a) Using SST and a press, install a new FR differential case rear tapered roller bearing (inner race) to the front differential case.

SST 09350-32014 (09351-32120), 09950-60010 (09951-00530)



- (b) Using SST and a press, install a new FR differential case rear tapered roller bearing (outer race) with the shim to the manual transmission case.

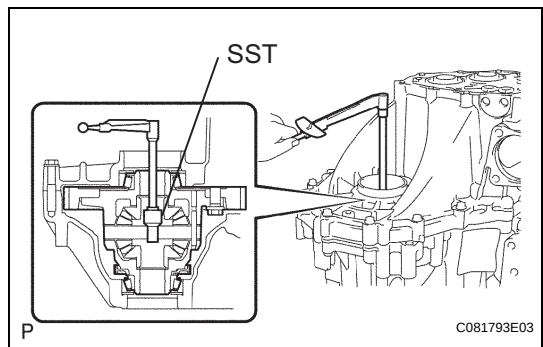
SST 09309-36010, 09950-60020 (09951-00710), 09950-70010 (09951-07150)



11. ADJUST DIFFERENTIAL SIDE BEARING PRELOAD

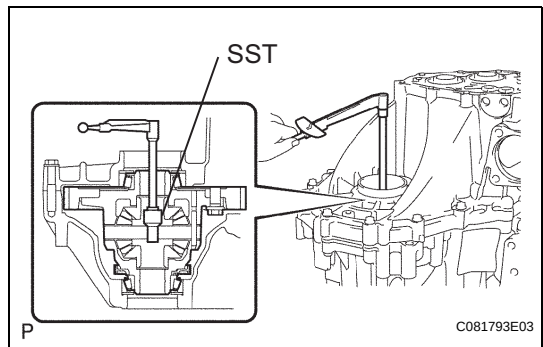
- (a) Coat the differential case assembly with gear oil, and install it to the transaxle case.
- (b) Install the manual transmission case with the 16 bolts.

Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



- (c) Using SST and a torque wrench, turn the differential case assembly to the right and left 2 or 3 times to allow the bearings to settle.

SST 09564-32011



- (d) Using SST and a torque wrench, measure the preload.

SST 09564-32011

Torque: New bearing preload (at starting)
0.78 to 1.57 N*m (8 to 16 kgf*cm, 6.9 to 13.9 in.*lbf)

If the preload is out of specification, select another shim.

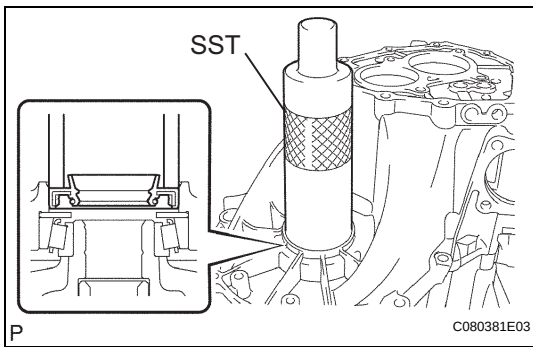
Shim thickness

Mark	Thickness: mm (in.)	Mark	Thickness: mm (in.)
AA	2.10 (0.0827)	LL	2.60 (0.1024)
BB	2.15 (0.0846)	MM	2.65 (0.1043)
CC	2.20 (0.0866)	NN	2.70 (0.1063)
DD	2.25 (0.0886)	PP	2.75 (0.1083)
EE	2.30 (0.0906)	QQ	2.80 (0.1102)
FF	2.35 (0.0925)	RR	2.85 (0.1122)
GG	2.40 (0.0945)	SS	2.90 (0.1142)
HH	2.45 (0.0965)	TT	2.95 (0.1161)
JJ	2.50 (0.0984)	UU	3.00 (0.1181)
KK	2.55 (0.1004)	-	-

HINT:

The preload will change by about 0.3 to 0.4 N*m (3 to 4 kgf*cm, 2.6 to 3.5 in.*lbf) corresponding to a change of 0.05 mm (0.0020 in.) in shim thickness.

- (e) Remove the 16 bolts and manual transmission case from the transaxle case.
- (f) Remove the differential case assembly from the transaxle case.

**12. INSTALL TRANSMISSION CASE OIL SEAL**

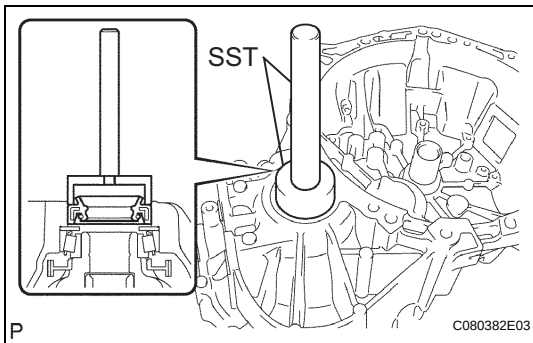
- (a) Using SST and a hammer, install a new transmission case oil seal to the manual transmission case.

SST 09316-60011 (09316-00011)

Drive in depth:

9.6 to 10.2 mm (0.378 to 0.402 in.)

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

**13. INSTALL TRANSAXLE CASE OIL SEAL**

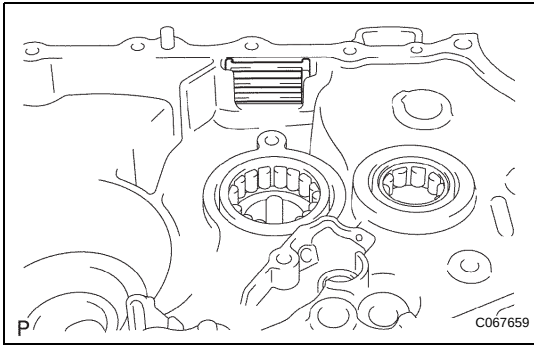
- (a) Using SST and a hammer, install a new transaxle case oil seal in the transaxle case.

SST 09710-20011 (09710-06071), 09950-70010 (09951-07150)

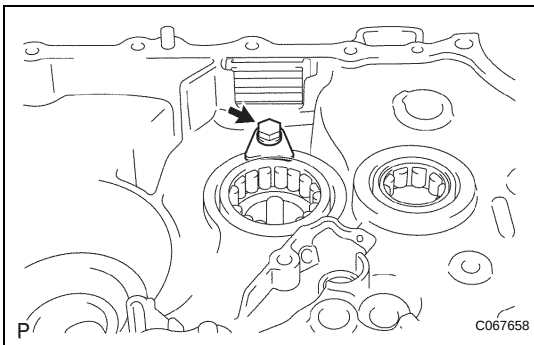
Drive in depth:

1.6 to 2.2 mm (0.063 to 0.087 in.)

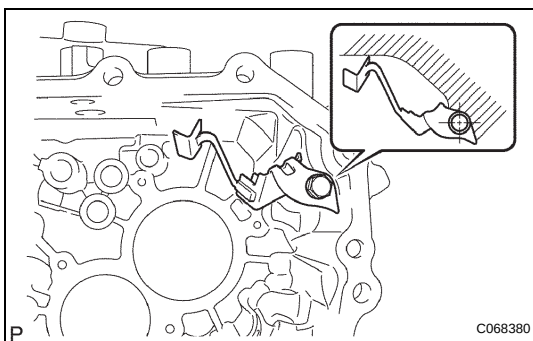
- (b) Coat the lip of the transaxle case oil seal with MP grease.

**14. INSTALL TRANSMISSION MAGNET**

- (a) Clean the transmission magnet, and install it to the transmission case.

**15. INSTALL BEARING LOCK PLATE**

- (a) Install the bearing lock plate with the bolt.
Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)

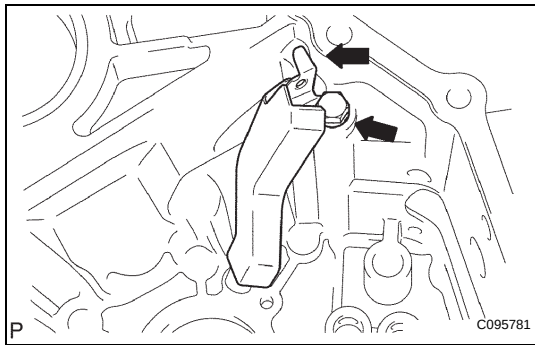
**16. INSTALL OIL RECEIVER PIPE NO. 1 (MTM)**

- (a) Install the oil receiver pipe No. 1 (MTM) with the bolt to the manual transmission case.

Torque: 17 N*m (175 kgf*cm, 13 ft.*lbf)

NOTICE:

- Prevent the oil receiver pipe No. 1 (MTM) from being deformed.
- Install the oil receiver pipe No. 1 (MTM) while placing it against the manual transmission case, as shown in the illustration.



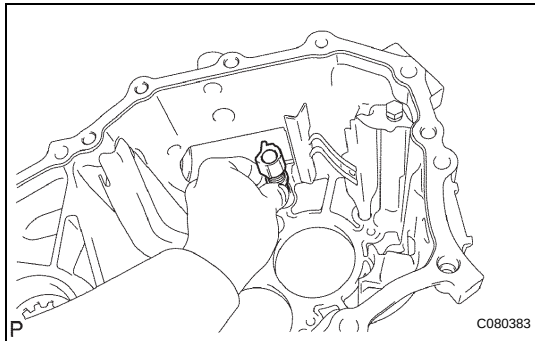
17. INSTALL OIL RECEIVER PIPE NO. 2 (MTM)

- (a) Install the oil receiver pipe No. 2 (MTM) with the bolt to the manual transmission case.

Torque: 17 N*m (175 kgf*cm, 13 ft.*lbf)

NOTICE:

- Prevent the oil receiver pipe No. 2 (MTM) from being deformed.
- Install the oil receiver pipe No. 2 (MTM) while placing it against the manual transmission case, as shown in the illustration.

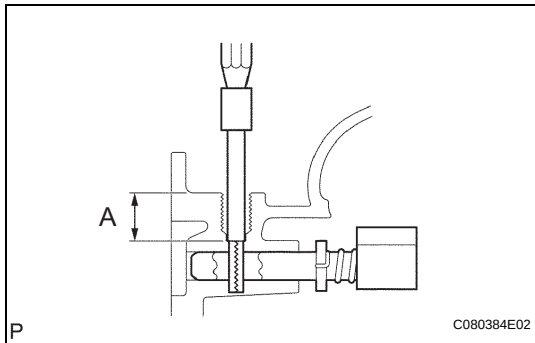


18. INSTALL REVERSE RESTRICT PIN ASSEMBLY

- (a) Install the reverse restrict pin assembly to the manual transmission case.

NOTICE:

Do not set the reverse restrict pin assembly in an incorrect orientation.



- (b) Using a pin punch ($\phi 5$ mm) and hammer, install the slotted pin to the reverse restrict pin assembly.

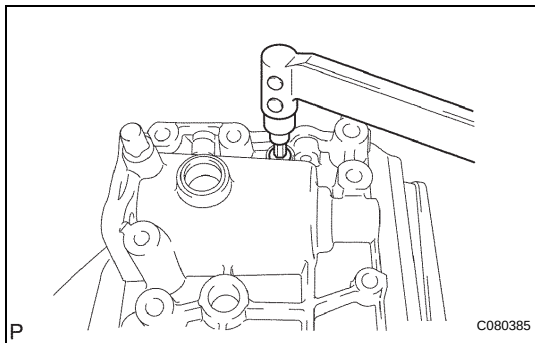
Standard clearance (A):

15.5 to 16.5 mm (0.6102 to 0.6496 in.)

- (c) Apply sealant to the reverse restrict pin plug.

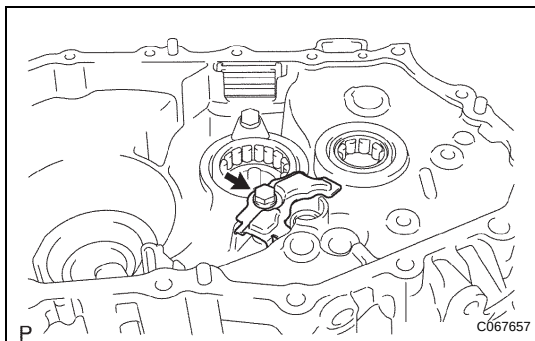
Sealant:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent



- (d) Using a hexagon wrench and a torque wrench, install the reverse restrict pin plug to the manual transmission case.

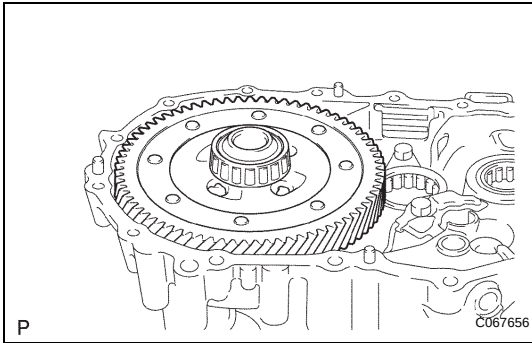
Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)



19. INSTALL MANUAL TRANSAXLE CASE RECEIVER

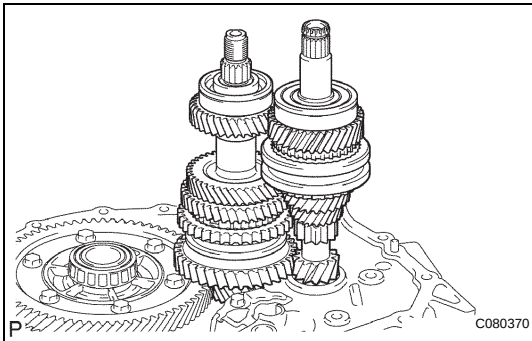
- (a) Install the manual transaxle case receiver with the bolt to the transaxle case.

Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)



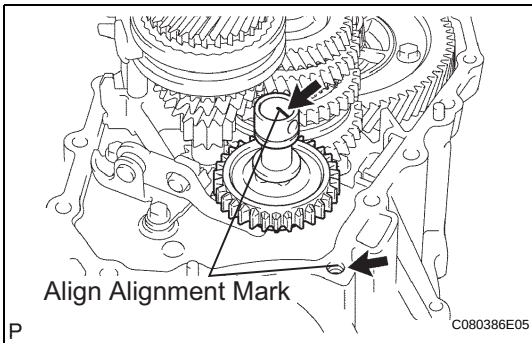
20. INSTALL DIFFERENTIAL CASE ASSEMBLY

- (a) Coat the differential case tapered roller bearing with gear oil, and install the differential case assembly to the transaxle case.



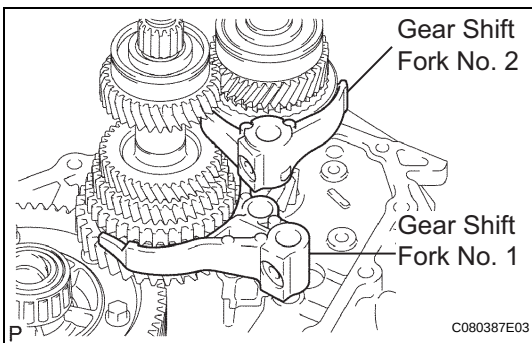
21. INSTALL INPUT SHAFT ASSEMBLY

- (a) Coat the sliding and rotating surfaces of the input and output shafts with gear oil, and install them to the transaxle case.



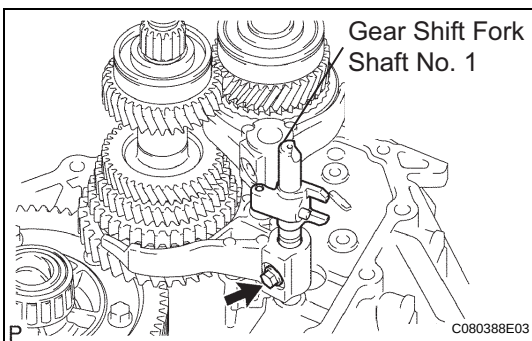
22. INSTALL REVERSE IDLER GEAR SUB-ASSEMBLY

- (a) Coat the reverse idler gear sub-assembly, thrust washer and reverse idler gear shaft with gear oil, and install them as shown in the illustration.
HINT:
Align the mark on the reverse idler gear shaft with the bolt hole shown in the illustration.



23. INSTALL GEAR SHIFT FORK SHAFT SUB-ASSEMBLY NO. 1

- (a) Coat the gear shift fork No. 1 and gear shift fork No. 2 with gear oil, and install them.

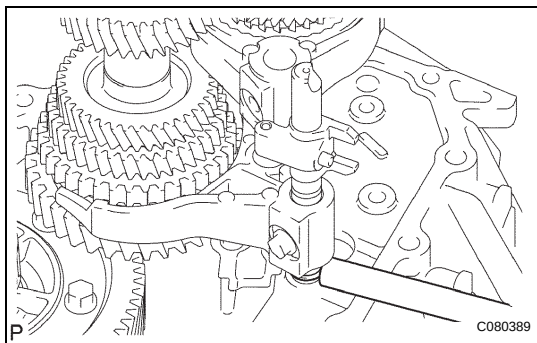


- (b) Coat the gear shift fork shaft sub-assembly No. 1 with gear oil, and install it.
- (c) Apply sealant to the shift fork lock bolt.

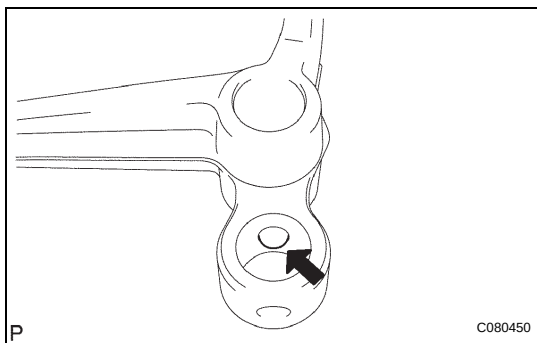
Sealant:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

- (d) Install the gear shift fork lock bolt.
Torque: 16 N*m (160 kgf*cm, 12 ft.*lbf)

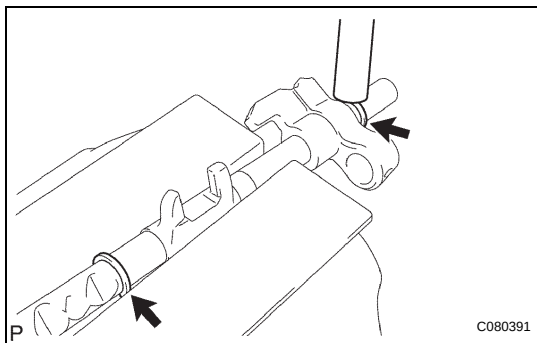


- (e) Using a brass bar and a hammer, install the snap ring to the gear shift fork shaft No. 1.

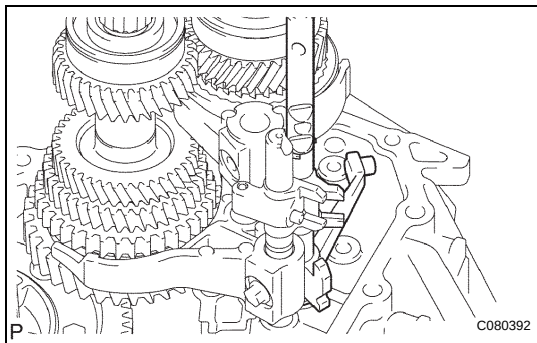


24. INSTALL GEAR SHIFT FORK SHAFT NO. 3

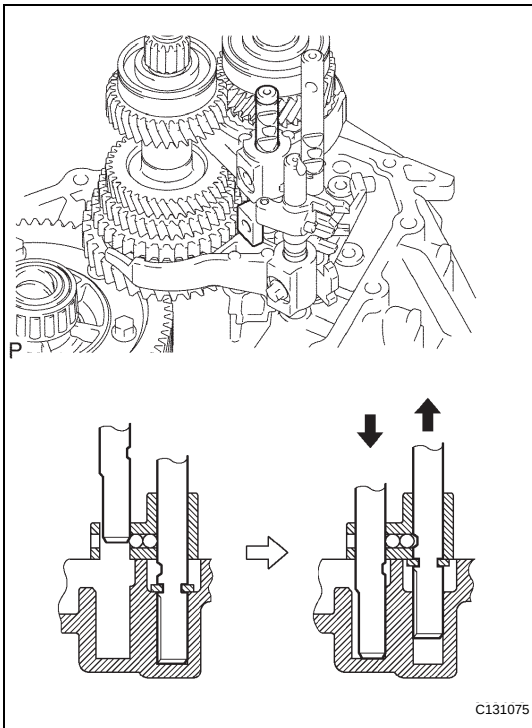
- (a) Coat the 2 balls with MP grease, and install them to the reverse shift fork.
(b) Install the reverse shift fork to the gear shift fork shaft No. 3.



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



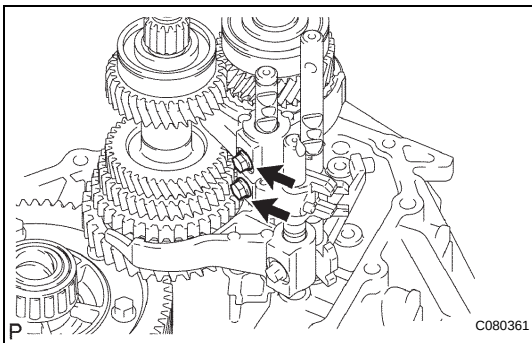
- (d) Coat the gear shift fork shaft No. 3 with gear oil, and install it.

**25. INSTALL GEAR SHIFT FORK SHAFT NO. 2**

- (a) Coat the gear shift head No. 1 and gear shift fork shaft No. 2 with gear oil, and install them.

NOTICE:

To avoid the interference of the 2 shift fork balls, lift up the gear shift fork shaft No. 3 to the position shown in the illustration.

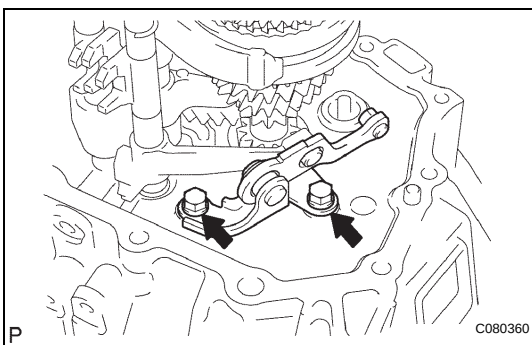


- (b) Coat the 2 shift lock bolts with sealant, and install them to the gear shift fork No. 2 and gear shift head No. 1.

Sealant:

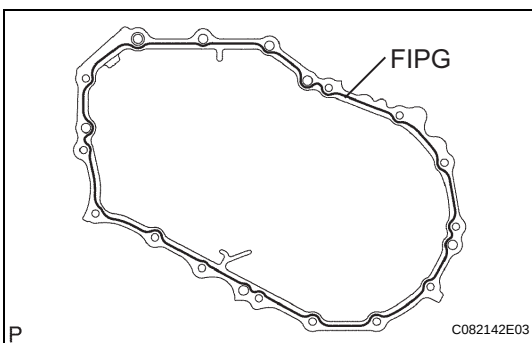
Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

Torque: 16 N*m (160 kgf*cm, 12 ft.*lbf)

**26. INSTALL REVERSE SHIFT ARM BRACKET ASSEMBLY**

- (a) Install the reverse shift arm bracket assembly with the 2 bolts to the transaxle case.

Torque: 17 N*m (175 kgf*cm, 13 ft.*lbf)

**27. INSTALL MANUAL TRANSMISSION CASE**

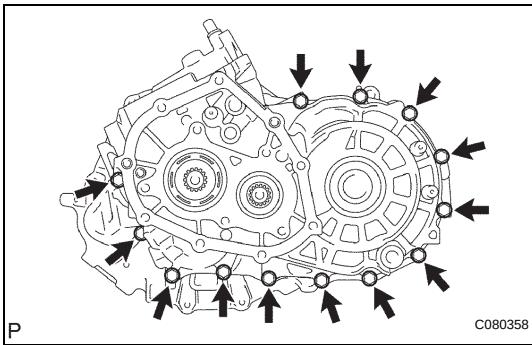
- (a) Apply FIPG to the manual transmission case, as shown in the illustration.

FIPG:

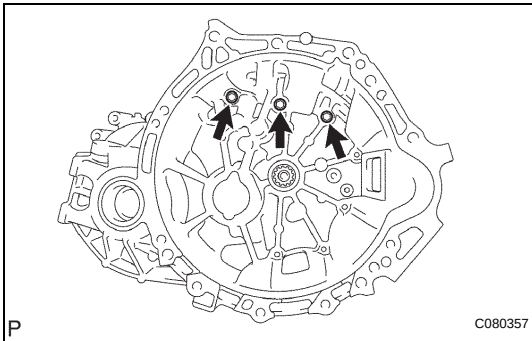
Toyota Genuine Seal Packing 1281, Three Bond 1281 or equivalent

NOTICE:

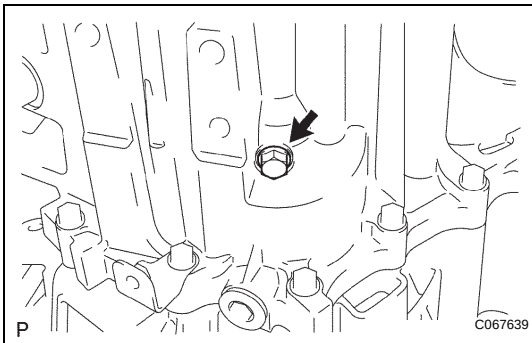
Parts must be assembled within 10 minutes of application. Otherwise, the packing (FIPG) material must be removed and reapplied.



- (b) Install the 13 bolts to the manual transmission side.
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



- (c) Install the 3 bolts to the transaxle case side.
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



28. INSTALL REVERSE IDLER GEAR SHAFT BOLT

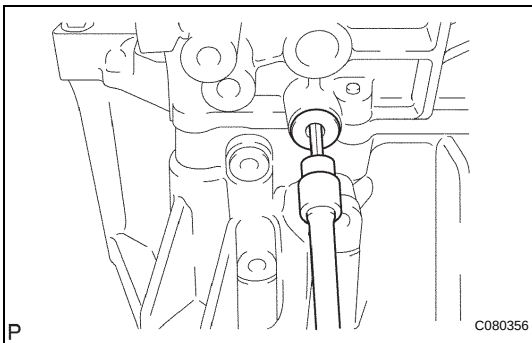
- (a) Coat the reverse idler gear shaft bolt with sealant, and install it with a new gasket.

Sealant:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)

MX



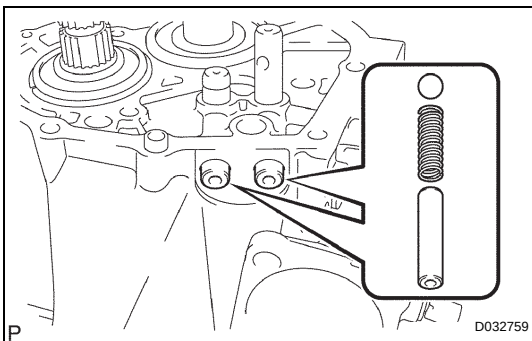
29. INSTALL LOCK BALL ASSEMBLY NO. 1

- (a) Coat the lock ball assembly No. 1 with sealant, and install it using a hexagon wrench.

Sealant:

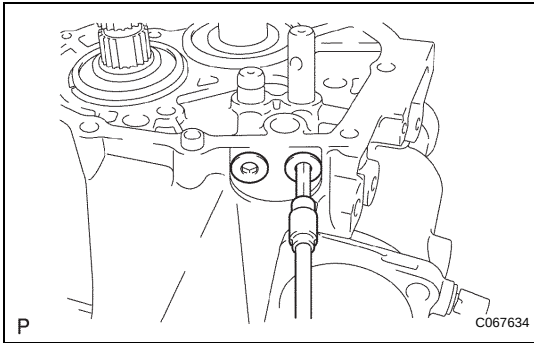
Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

Torque: 29 N*m (296 kgf*cm, 21 ft.*lbf)



30. INSTALL SHIFT DETENT BALL

- (a) Install the 2 shift detent balls, 2 springs, and 2 seats to the manual transmission case.

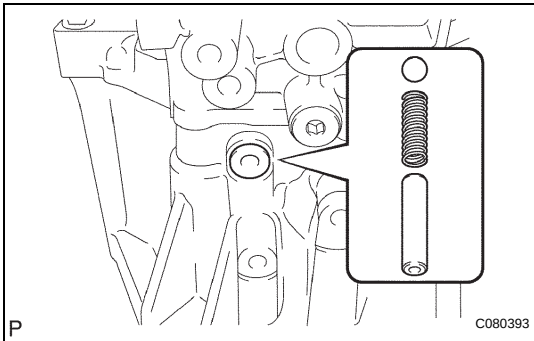


- (b) Coat the 2 shift detent ball plugs with sealant, and install them using a hexagon wrench.

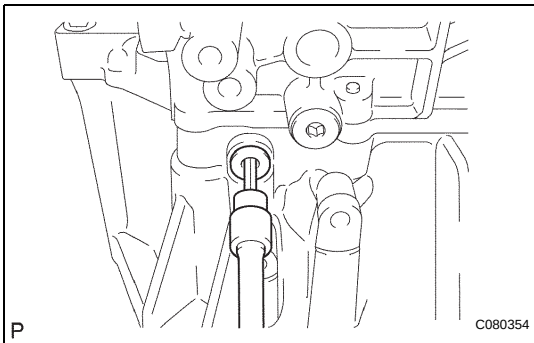
Sealant:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

Torque: 22 N*m (224 kgf*cm, 16 ft.*lbf)



- (c) Install the shift detent ball, spring and seat to the transaxle case.

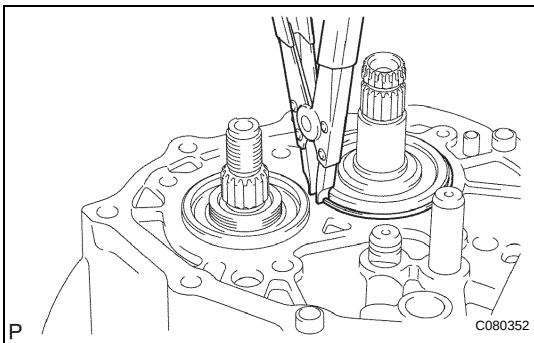


- (d) Coat the shift detent ball plug with sealant, and install it using a hexagon wrench.

Sealant:

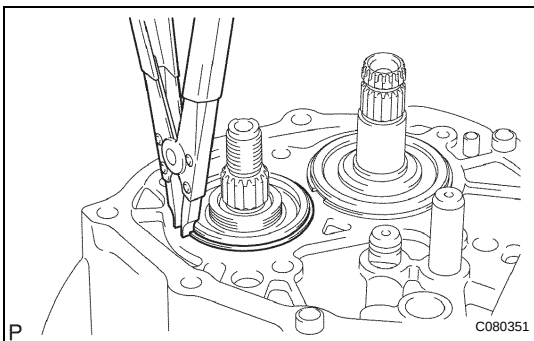
Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

Torque: 22 N*m (224 kgf*cm, 16 ft.*lbf)



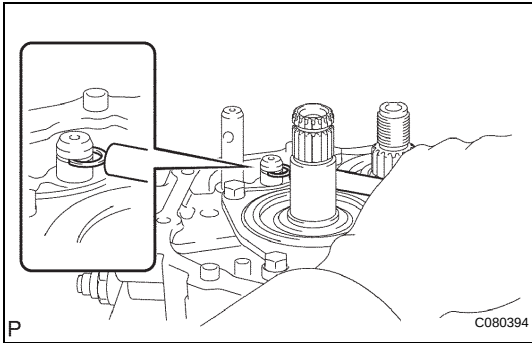
31. INSTALL INPUT SHAFT REAR BEARING HOLE SNAP RING

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

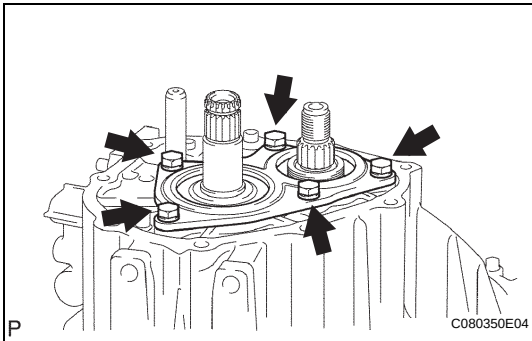


32. INSTALL OUTPUT SHAFT REAR BEARING HOLE SNAP RING

- (a) Using a snap ring expander, install the output shaft rear bearing hole snap ring to the output shaft.

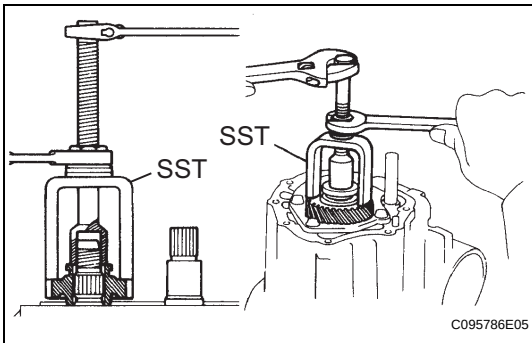
**33. INSTALL SHIFT FORK SHAFT SHAFT SNAP RING**

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

**34. INSTALL BEARING RETAINER REAR (MTM)**

- (a) Coat the 5 bolts with sealant, and install them and bearing retainer rear (MTM) to the manual transmission case.

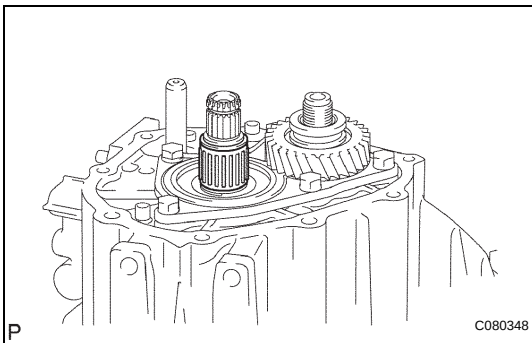
Torque: 27 N*m (279 kgf*cm, 20 ft.*lbf)

**35. INSTALL 5TH DRIVEN GEAR**

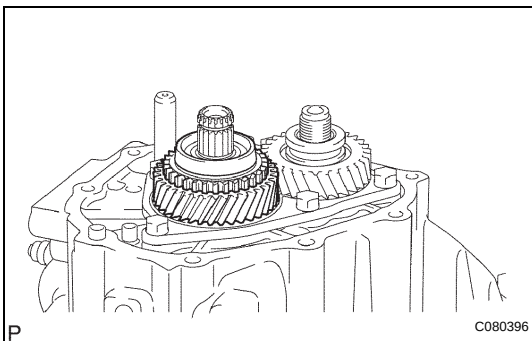
- (a) Using SST, install the 5th driven gear to the output shaft.

SST 09309-12020

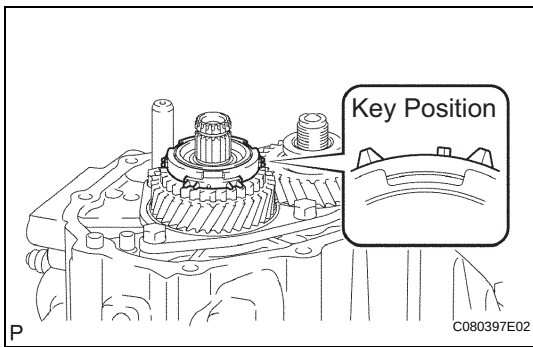
MX

**36. INSTALL 5TH GEAR NEEDLE ROLLER BEARING**

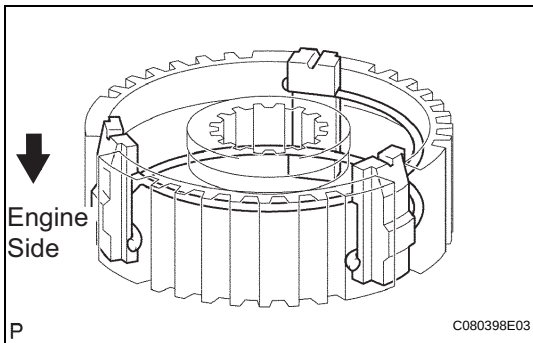
- (a) Coat the 5th gear needle roller bearing and 5th gear bearing spacer with gear oil, and install them to the input shaft.

**37. INSTALL 5TH GEAR**

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

**38. INSTALL SYNCHRONIZER RING NO. 3**

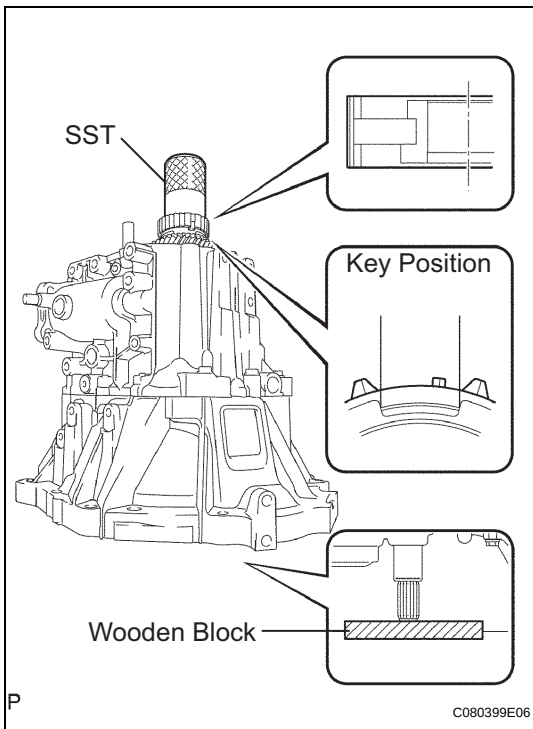
- (a) Coat the synchronizer ring No. 3 with gear oil, and install it to the 5th gear.

**39. INSTALL TRANSMISSION CLUTCH HUB NO. 3**

- (a) Install the 3 synchromesh shifting keys and 2 synchromesh shifting key springs to the transmission clutch hub No. 3.

HINT:

Do not set the openings of the shifting key springs in the same position.

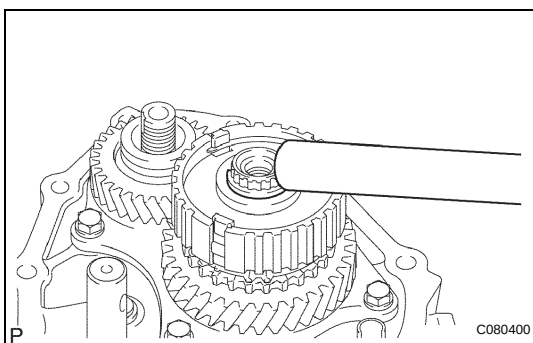


- (b) Using SST and a hammer, install the transmission clutch hub No. 3 to the input shaft.

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NOTICE:

- Before driving in the No. 3 clutch hub assembly, place a suitable sized wooden block under the rear side of the input shaft, as shown in the illustration.
- When driving it in, fix the input shaft firmly so that it is not pushed downward. Otherwise the input shaft rear bearing is over loaded and might be damaged.



- (c) Select a snap ring from the table below that will make the thrust clearance of the transmission clutch hub No. 3 below 0.1 mm (0.004 in.).

Snap ring thickness

Mark	Thickness: mm (in.)	Mark	Thickness: mm (in.)
A	2.25 (0.0886)	E	2.49 (0.0980)
B	2.31 (0.0909)	F	2.55 (0.1004)
C	2.37 (0.0933)	G	2.61 (0.1028)
D	2.43 (0.0957)	-	-

- (d) Using a brass bar and a hammer, install the snap ring to the input shaft.

40. INSPECT 5TH GEAR THRUST CLEARANCE (See page MX-47)

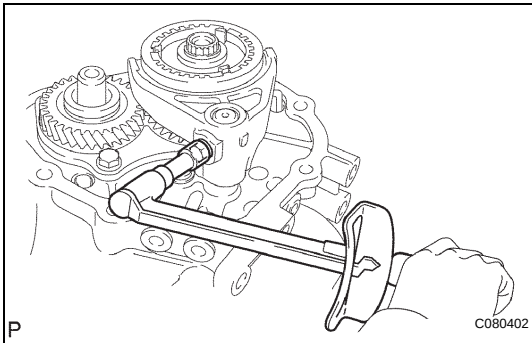
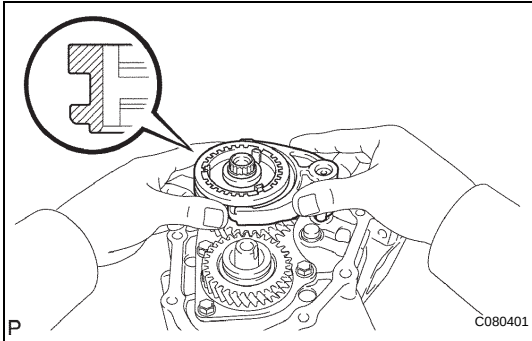
41. INSPECT 5TH GEAR RADIAL CLEARANCE (See page MX-47)

42. INSTALL GEAR SHIFT FORK NO. 3

- (a) Coat the transmission clutch hub sleeve No. 3 with gear oil, and install it and gear shift fork No. 3 to the transmission clutch hub No. 3.

HINT:

Do not set the transmission clutch hub No. 3 in an incorrect orientation.

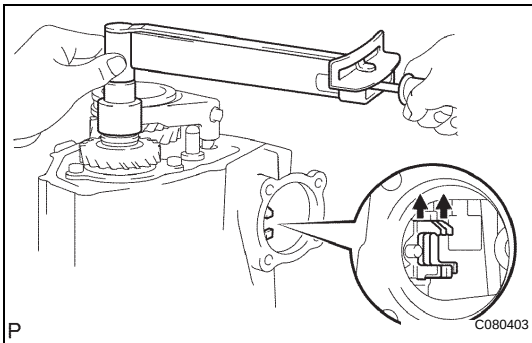


- (b) Coat the gear shift lock fork ball with sealant, and install it to the gear shift fork No. 3.

Sealant:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

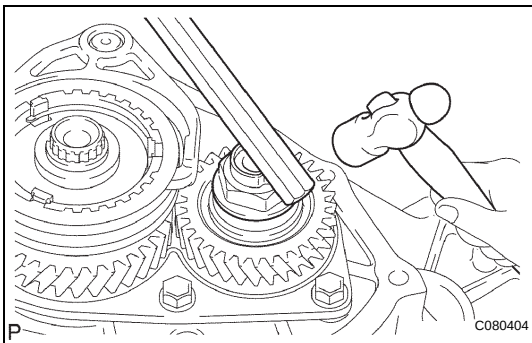
Torque: 16 N*m (160 kgf*cm, 12 ft.*lbf)



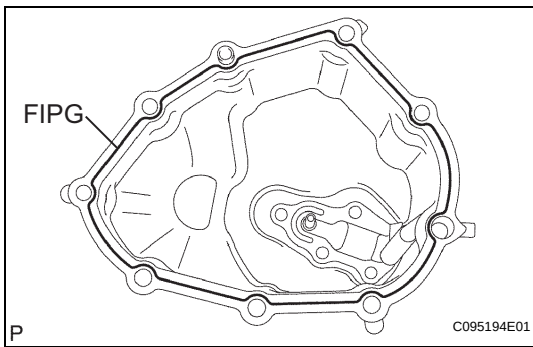
43. INSTALL MANUAL TRANSMISSION OUTPUT SHAFT REAR SET NUT

- (a) Engage two gears simultaneously to lock the transmission.
(b) Install a new manual transmission output shaft rear set nut.

Torque: 118 N*m (1,200 kgf*cm, 87 ft.*lbf)



- (c) Using a chisel and a hammer, stake the manual transmission output shaft rear set nut.
(d) Disengage the two gears.



44. INSTALL MANUAL TRANSMISSION CASE COVER SUB-ASSEMBLY

- (a) Apply FIPG to the manual transmission case cover sub-assembly as shown in the illustration.

FIPG:

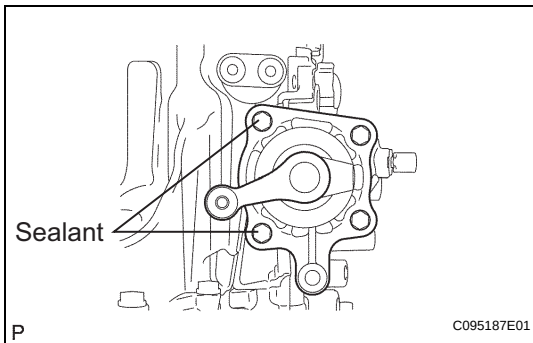
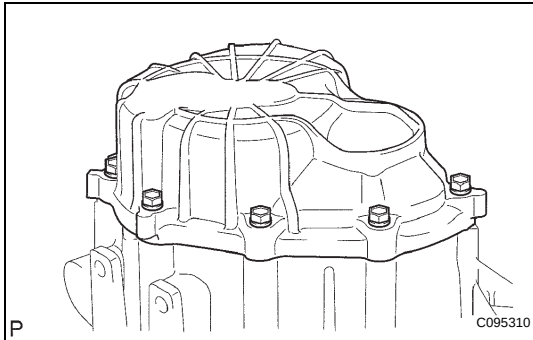
Toyota Genuine Seal Packing 1281, Three Bond 1281 or equivalent

NOTICE:

Parts must be assembled within 10 minutes of application. Otherwise, the packing (FIPG) material must be removed and reapplied.

- (b) Install the manual transmission case cover sub-assembly with the 9 bolts to the manual transmission case.

Torque: 18 N*m (185 kgf*cm, 13 ft.*lbf)



45. INSTALL SHIFT AND SELECT LEVER SHAFT ASSEMBLY

- (a) Coat the 2 bolts with sealant, and install them, 2 bolts, a new gasket and the shift & select lever shaft assembly to the manual transmission case.

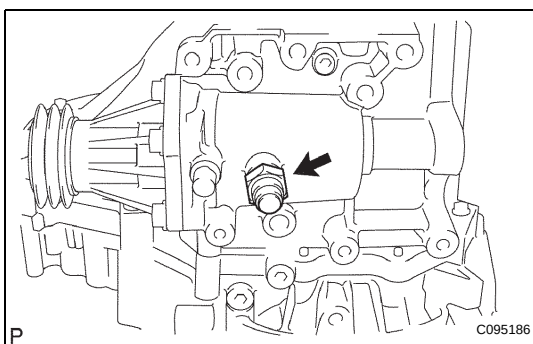
Sealant:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

Torque: 20 N*m (200 kgf*cm, 14 ft.*lbf)

NOTICE:

Set the claws of the shift interlock plate into the shift head part of the gear shift fork shaft securely.



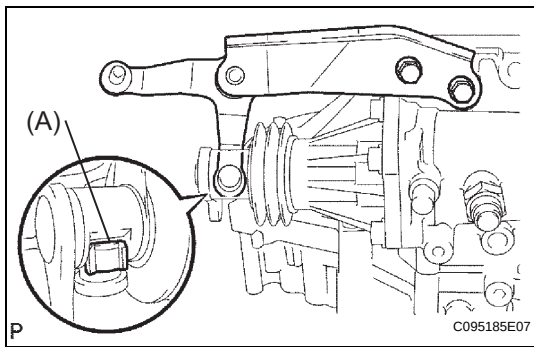
46. INSTALL LOCK BALL ASSEMBLY NO. 1

- (a) Coat the lock ball assembly No. 1 with sealant, and install it to the manual transmission case.

Sealant:

Toyota Genuine Adhesive 1344, Three Bond 1344 or equivalent

Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)

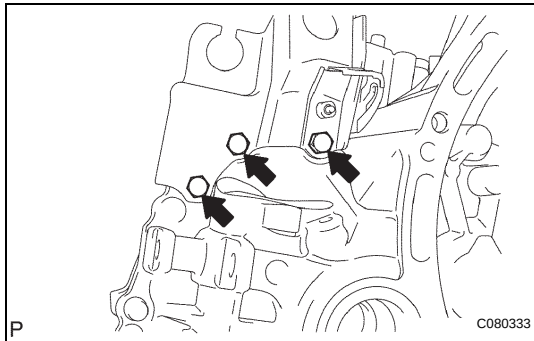
**47. INSTALL SELECTING BELL CRANK ASSEMBLY**

- (a) Install the selecting bell crank assembly and the control shift lever bush with the 2 bolts to the manual transmission case.

Torque: 25 N*m (250 kgf*cm, 18 ft.*lbf)

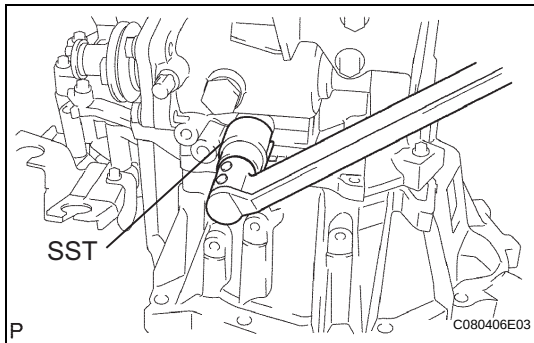
NOTICE:

Apply MP grease to the inside circumferential surface of the control shift lever bush (A).

**48. INSTALL FLOOR SHIFT CONTROL LEVER HOUSING SUPPORT BRACKET**

- (a) Install the floor shift control lever housing support bracket with the 3 bolts to the transaxle case.

Torque: 18 N*m (184 kgf*cm, 13. ft.*lbf)

**49. INSTALL BACK UP LIGHT SWITCH ASSEMBLY**

- (a) Using SST, install the back up light switch assembly with a new gasket to the manual transmission case.

Torque: 40 N*m (411 kgf*cm, 30 ft.*lbf)

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50. INSTALL SPEEDOMETER DRIVEN HOLE COVER SUB-ASSEMBLY

- (a) Install a new O-ring to the speedometer driver hole cover sub-assembly.
(b) Install the speedometer driver hole cover sub-assembly with the bolt.

Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)

51. INSTALL SPEEDOMETER SENSOR

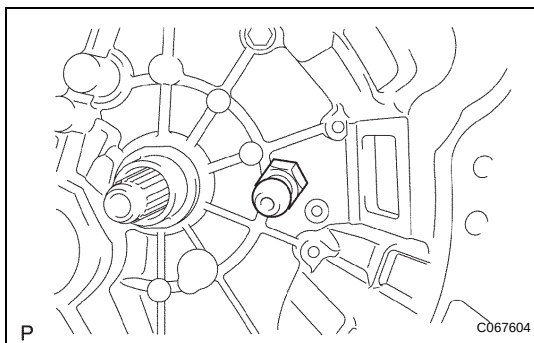
- (a) Install a new O-ring to the speedometer sensor.
(b) Install the speedometer sensor with the bolt.

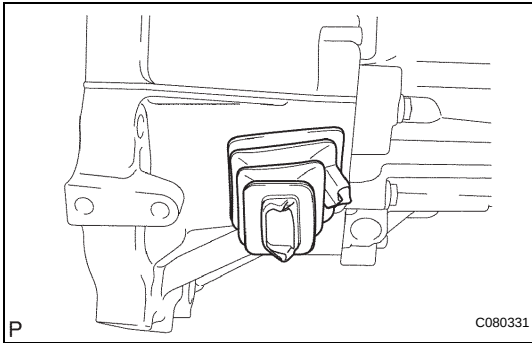
Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)

52. INSTALL RELEASE FORK SUPPORT

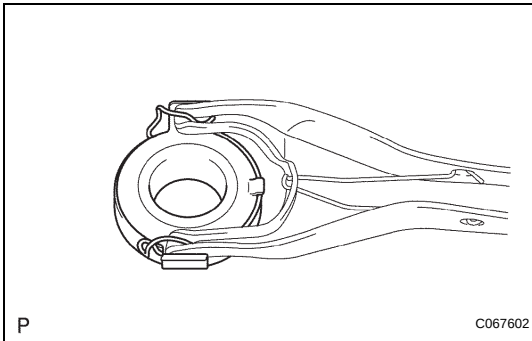
- (a) Install the clutch release fork support to the transaxle case.

Torque: 37 N*m (375 kgf*cm, 27 ft.*lbf)



**53. INSTALL CLUTCH RELEASE FORK BOOT**

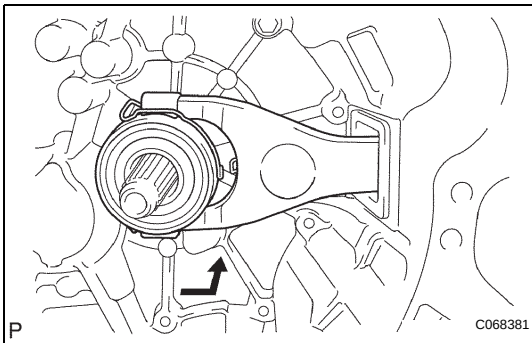
- (a) Install the clutch release fork boot to the transaxle case.

**54. INSTALL CLUTCH RELEASE BEARING ASSEMBLY**

- (a) Coat the clutch release bearing assembly with release hub grease, and install it to the clutch release fork sub-assembly with the release bearing clip.

Grease:

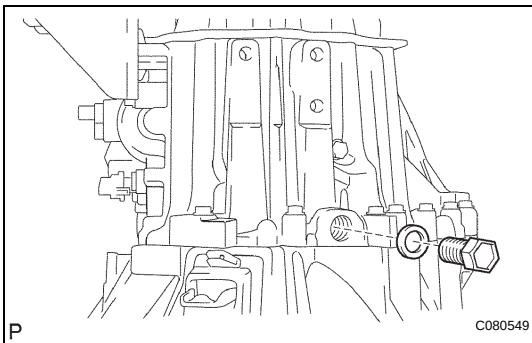
Toyota Genuine Release Hub Grease or equivalent

**55. INSTALL CLUTCH RELEASE FORK SUB-ASSEMBLY**

- (a) Install the clutch release fork sub-assembly to the input shaft.
(b) Apply clutch spline grease to the spline of the input shaft.

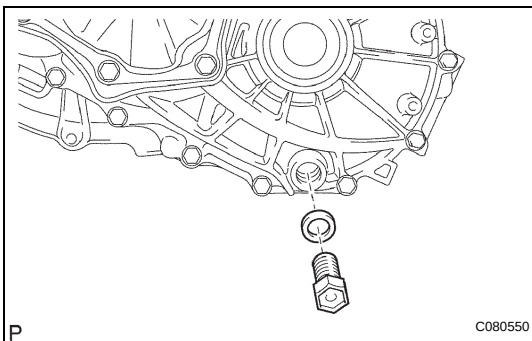
Grease:

Toyota Genuine Clutch Spline Grease or equivalent

**56. INSTALL MANUAL TRANSMISSION FILLER PLUG**

- (a) Install the manual transmission filler plug with a new gasket.

Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)

**57. INSTALL DRAIN (MTM) PLUG SUB-ASSEMBLY**

- (a) Install the drain (MTM) plug sub-assembly with a new gasket.

Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)