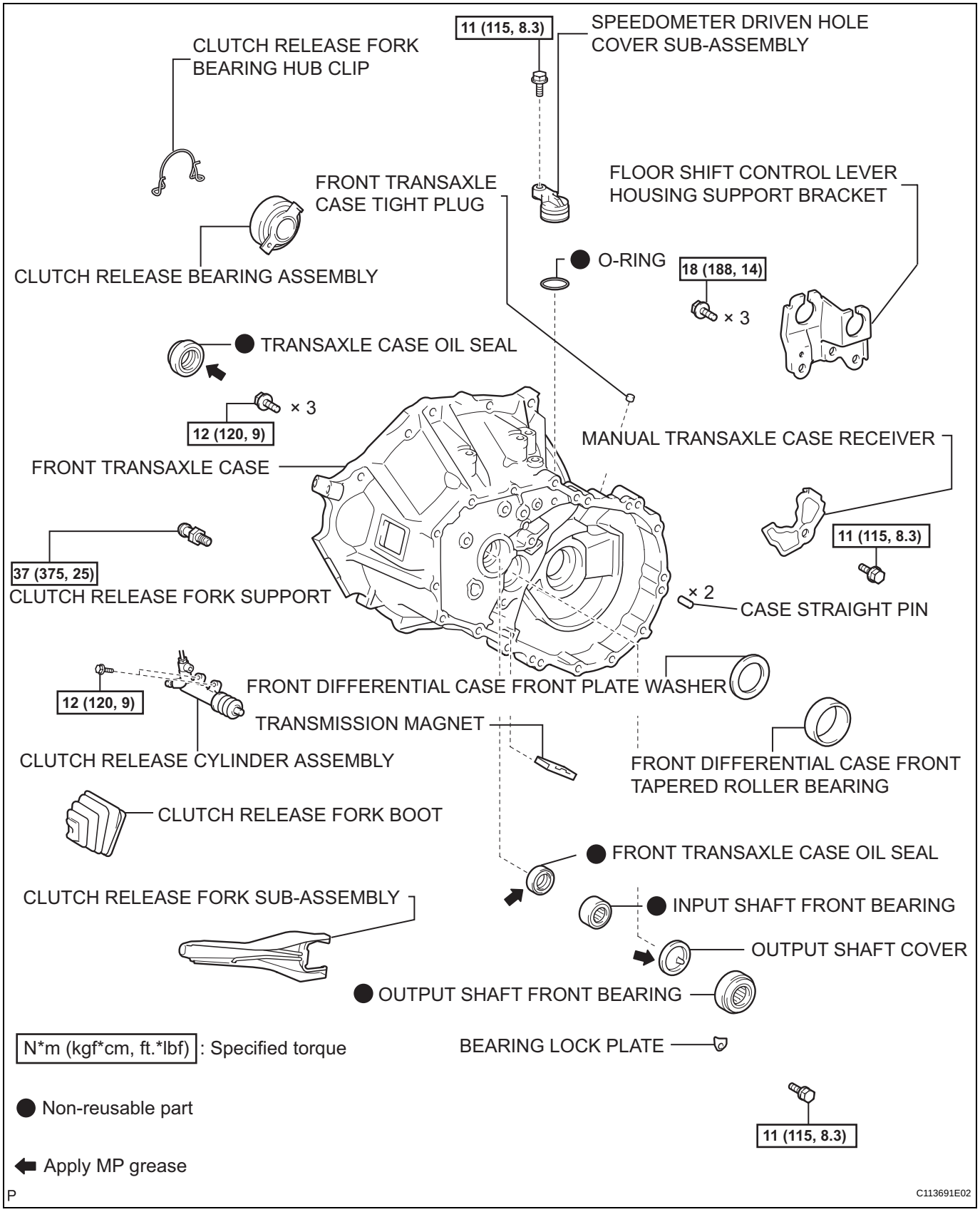
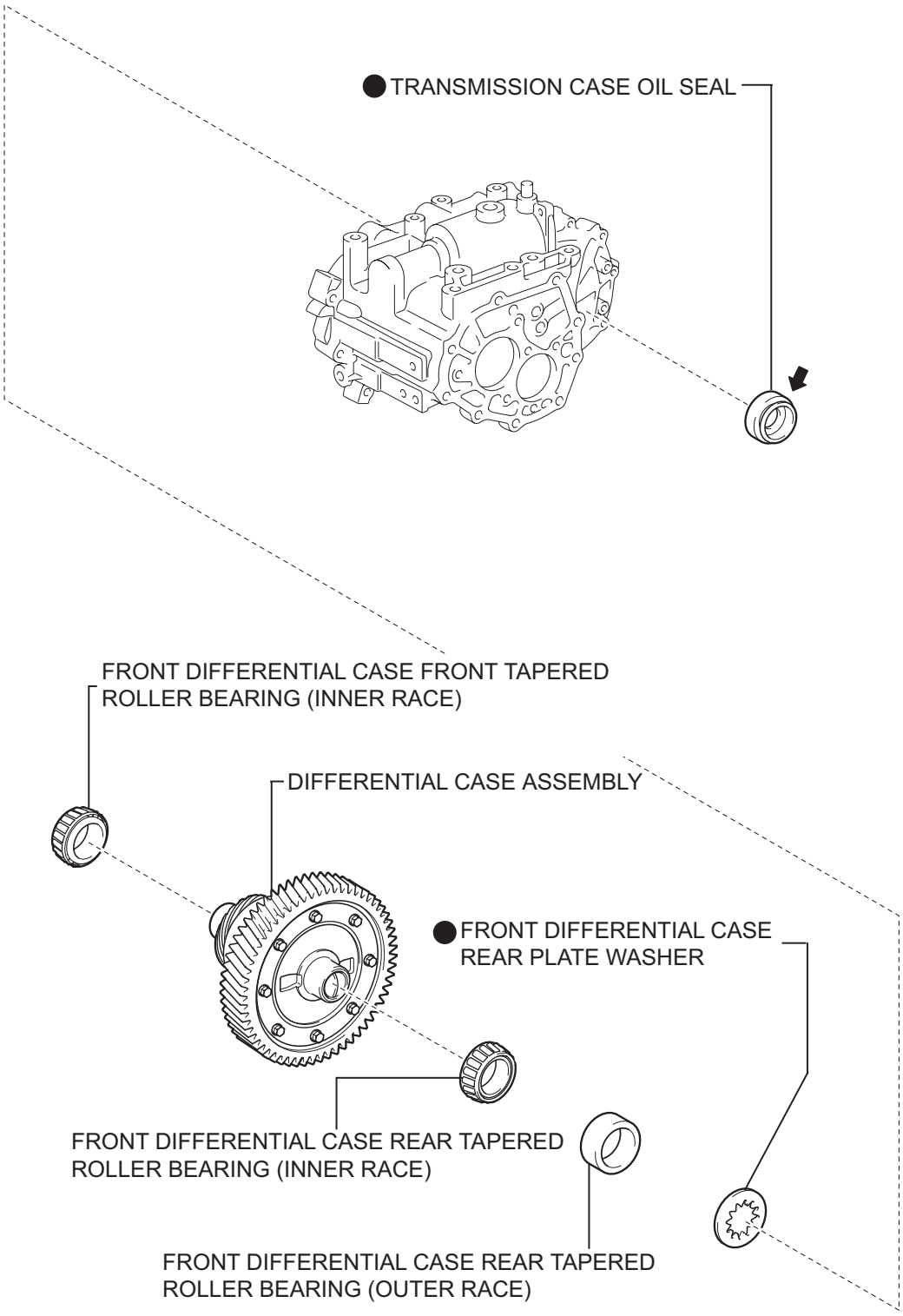
MANUAL TRANSAXLE UNIT

COMPONENTS



MX

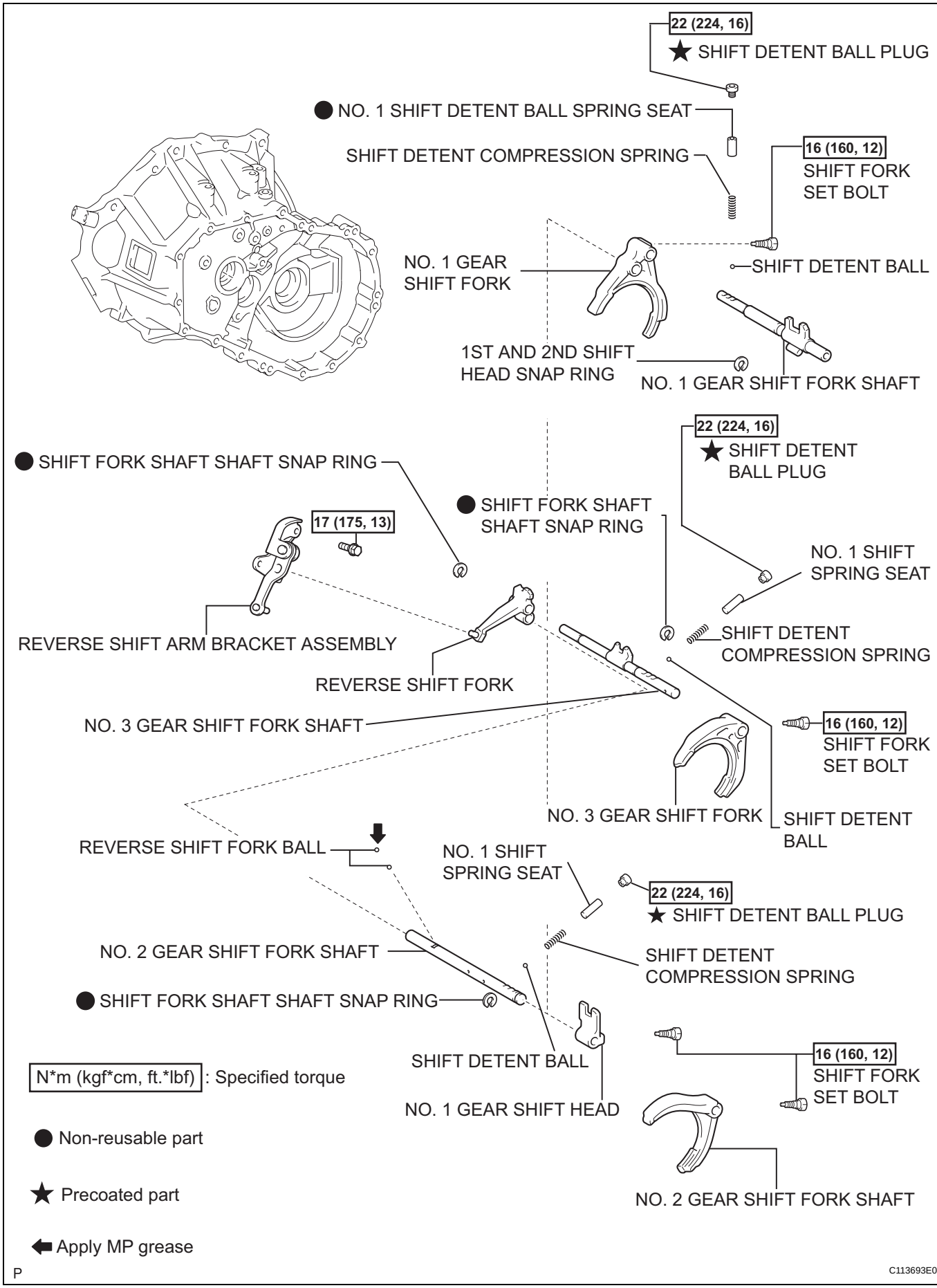


● Non-reusable part

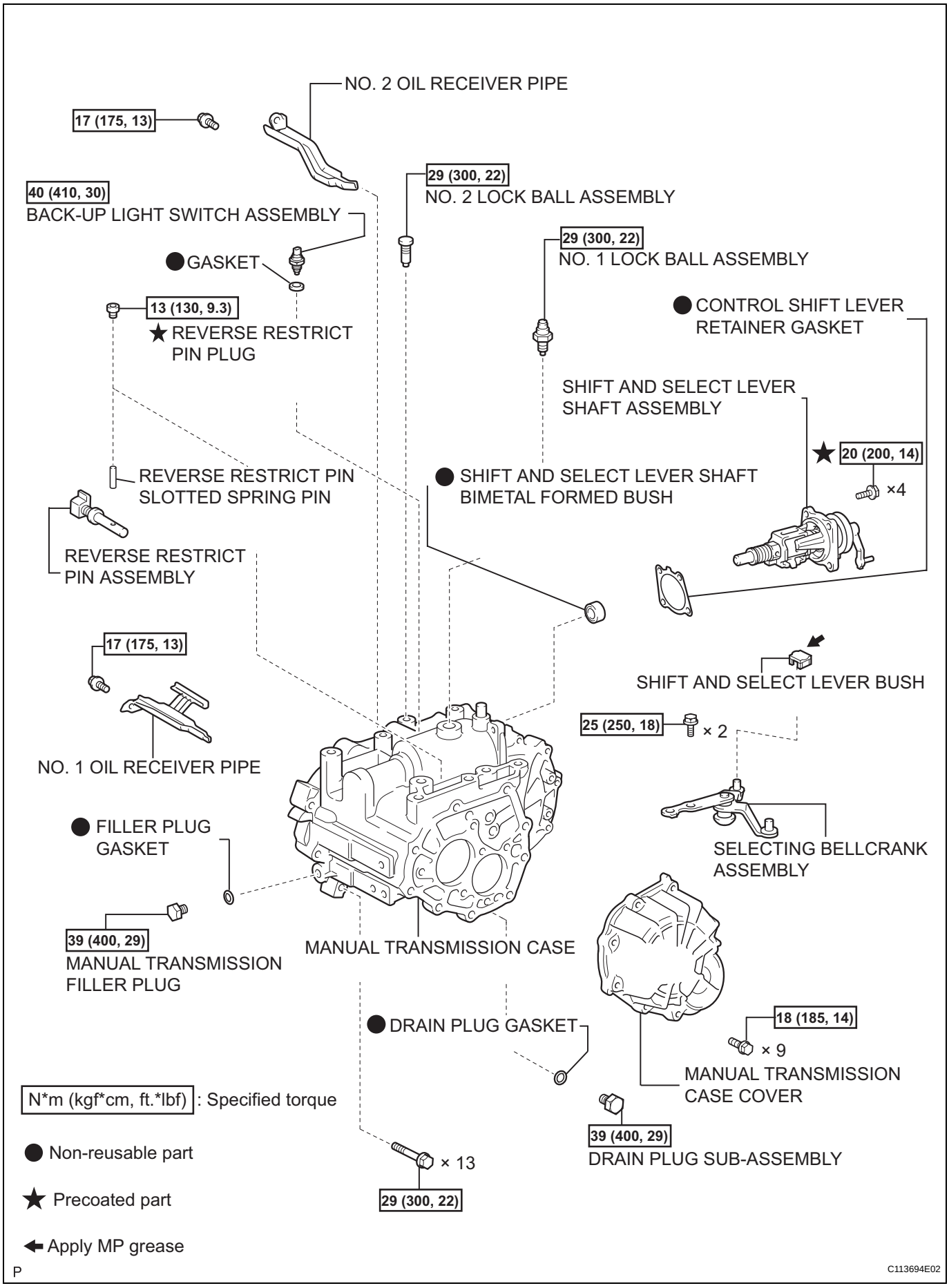
⬅ Apply MP grease

P

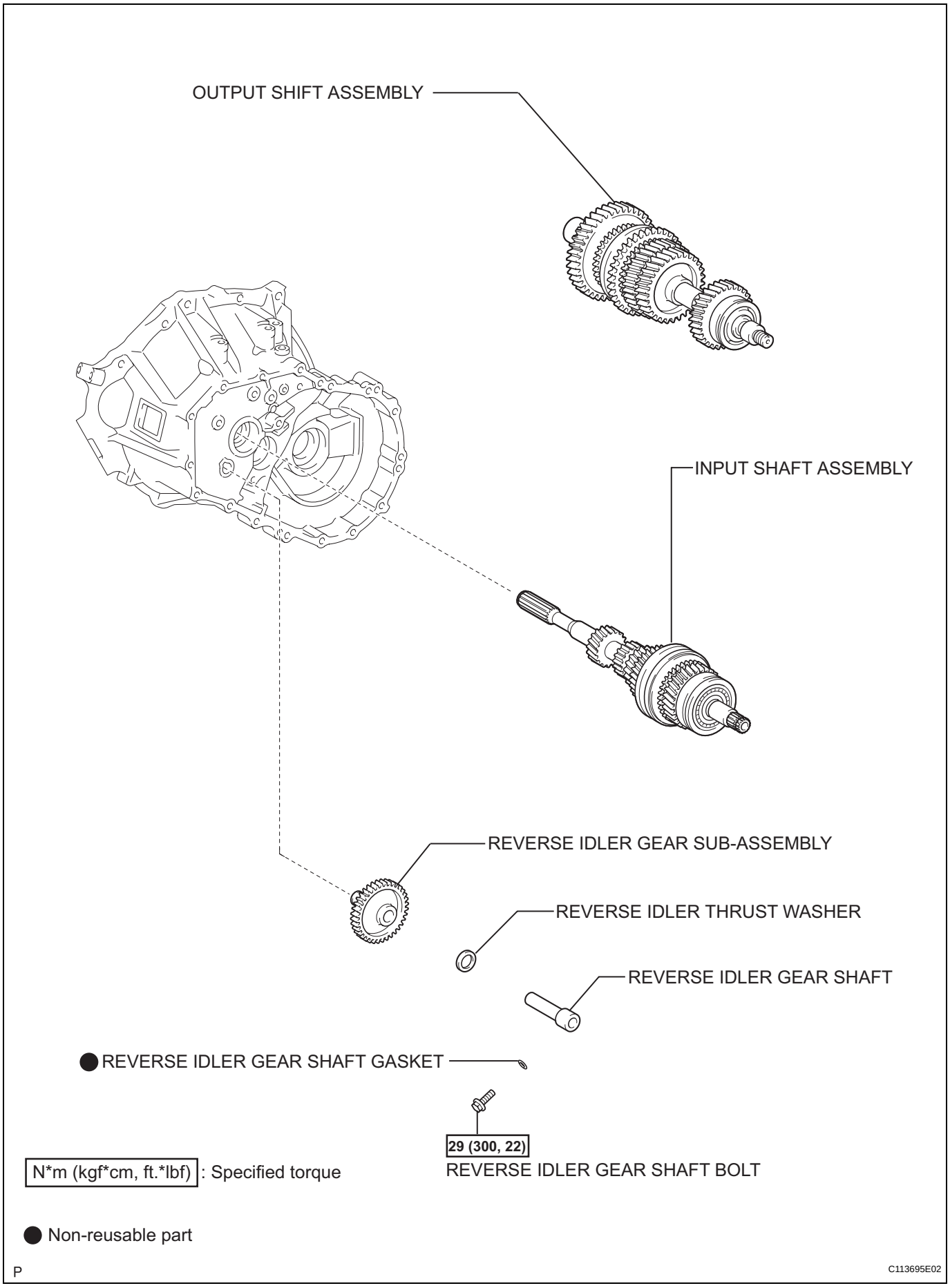
C113692E02


22 (224, 16)
★ SHIFT DETENT BALL PLUG
● NO. 1 SHIFT DETENT BALL SPRING SEAT
SHIFT DETENT COMPRESSION SPRING
16 (160, 12)
SHIFT FORK SET BOLT
NO. 1 GEAR SHIFT FORK
SHIFT DETENT BALL
1ST AND 2ND SHIFT HEAD SNAP RING
NO. 1 GEAR SHIFT FORK SHAFT
22 (224, 16)
★ SHIFT DETENT BALL PLUG
● SHIFT FORK SHAFT SHAFT SNAP RING
● SHIFT FORK SHAFT SHAFT SNAP RING
17 (175, 13)
NO. 1 SHIFT SPRING SEAT
REVERSE SHIFT ARM BRACKET ASSEMBLY
SHIFT DETENT COMPRESSION SPRING
REVERSE SHIFT FORK
NO. 3 GEAR SHIFT FORK SHAFT
16 (160, 12)
SHIFT FORK SET BOLT
NO. 3 GEAR SHIFT FORK
SHIFT DETENT BALL
REVERSE SHIFT FORK BALL
NO. 1 SHIFT SPRING SEAT
22 (224, 16)
★ SHIFT DETENT BALL PLUG
NO. 2 GEAR SHIFT FORK SHAFT
SHIFT DETENT COMPRESSION SPRING
● SHIFT FORK SHAFT SHAFT SNAP RING
SHIFT DETENT BALL
16 (160, 12)
SHIFT FORK SET BOLT
NO. 1 GEAR SHIFT HEAD
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
★ Precoated part
⬅ Apply MP grease
NO. 2 GEAR SHIFT FORK SHAFT
P
C113693E02

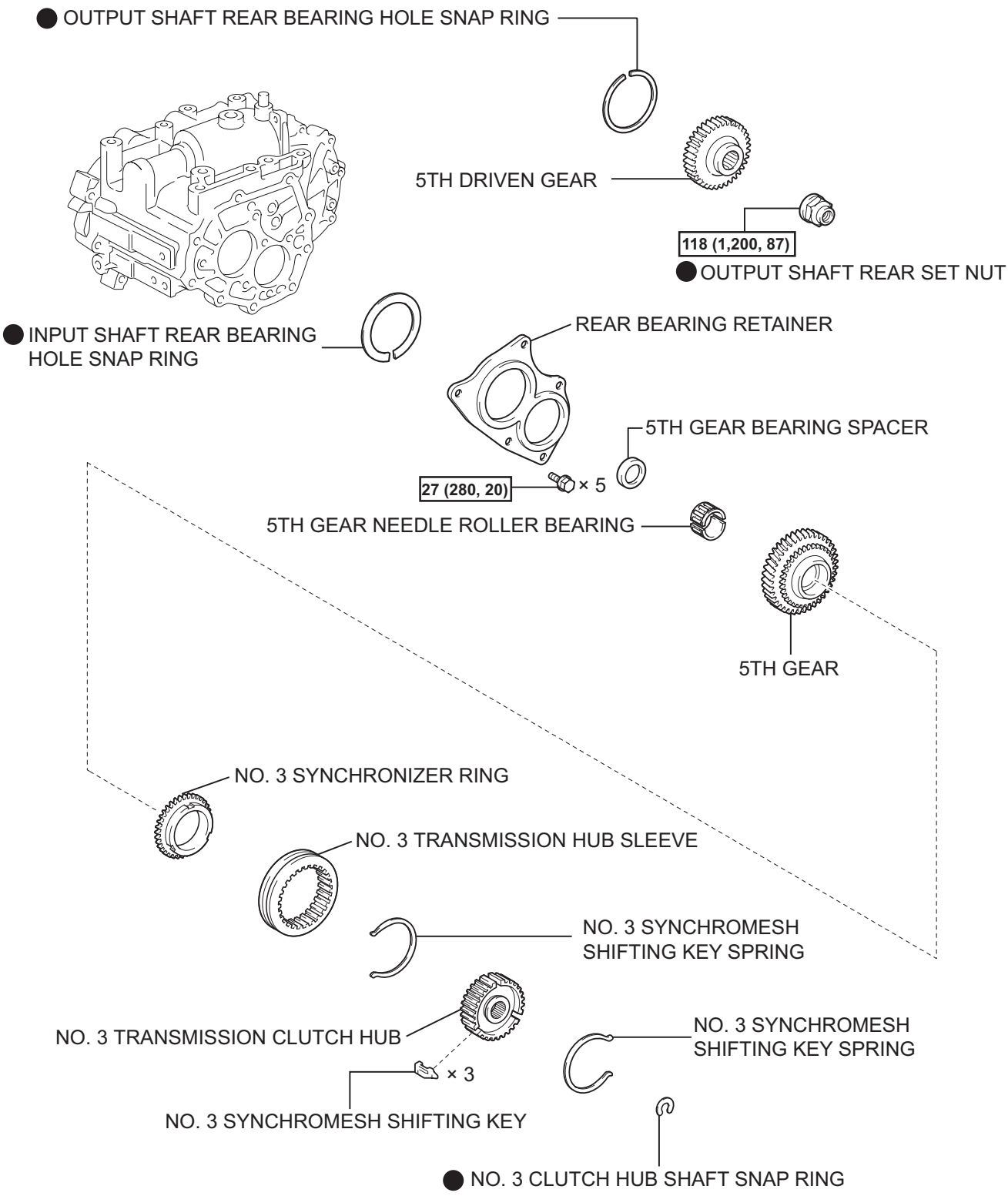
MX


NO. 2 OIL RECEIVER PIPE
17 (175, 13)
29 (300, 22)
NO. 2 LOCK BALL ASSEMBLY
40 (410, 30)
BACK-UP LIGHT SWITCH ASSEMBLY
GASKET
29 (300, 22)
NO. 1 LOCK BALL ASSEMBLY
13 (130, 9.3)
REVERSE RESTRICT PIN PLUG
CONTROL SHIFT LEVER RETAINER GASKET
SHIFT AND SELECT LEVER SHAFT ASSEMBLY
20 (200, 14)
×4
REVERSE RESTRICT PIN SLOTTED SPRING PIN
SHIFT AND SELECT LEVER SHAFT BIMETAL FORMED BUSH
REVERSE RESTRICT PIN ASSEMBLY
17 (175, 13)
SHIFT AND SELECT LEVER BUSH
25 (250, 18)
× 2
NO. 1 OIL RECEIVER PIPE
FILLER PLUG GASKET
SELECTING BELLCRANK ASSEMBLY
39 (400, 29)
MANUAL TRANSMISSION FILLER PLUG
MANUAL TRANSMISSION CASE
DRAIN PLUG GASKET
18 (185, 14)
× 9
MANUAL TRANSMISSION CASE COVER
N*m (kgf*cm, ft.*lbf) : Specified torque
39 (400, 29)
DRAIN PLUG SUB-ASSEMBLY
Non-reusable part
× 13
Precoated part
29 (300, 22)
Apply MP grease
P
C113694E02

MX


OUTPUT SHIFT ASSEMBLY
INPUT SHAFT ASSEMBLY
REVERSE IDLER GEAR SUB-ASSEMBLY
REVERSE IDLER THRUST WASHER
REVERSE IDLER GEAR SHAFT
● REVERSE IDLER GEAR SHAFT GASKET
29 (300, 22)
REVERSE IDLER GEAR SHAFT BOLT
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
P
C113695E02

MX



MX

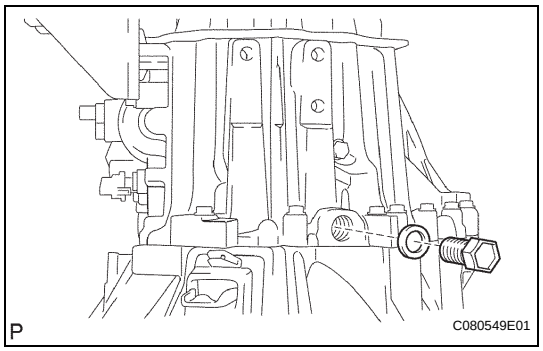
N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

P

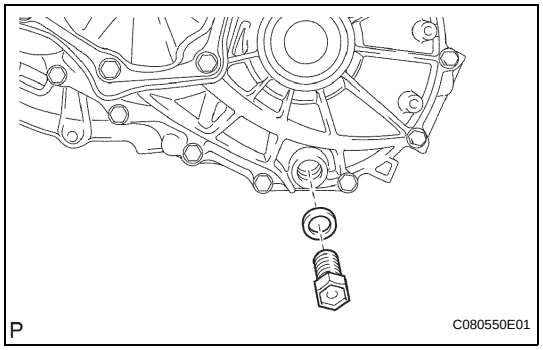
C113696E02

DISASSEMBLY



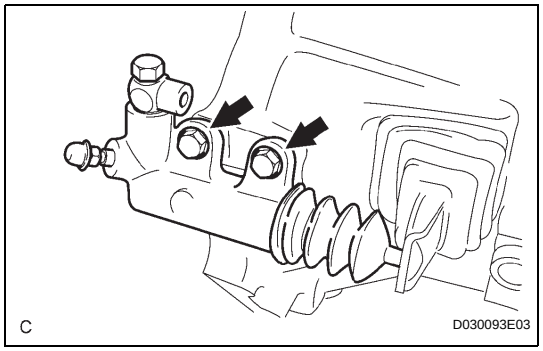
1. REMOVE MANUAL TRANSMISSION FILLER PLUG

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



2. REMOVE DRAIN PLUG SUB-ASSEMBLY

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



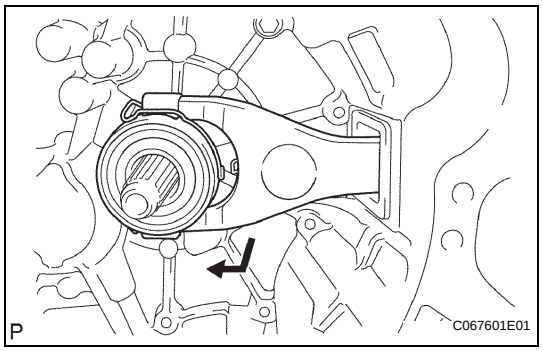
3. REMOVE CLUTCH RELEASE CYLINDER ASSEMBLY

(a) Remove the 2 bolts and clutch release cylinder.

4. REMOVE SPEEDOMETER DRIVEN HOLE COVER SUB-ASSEMBLY

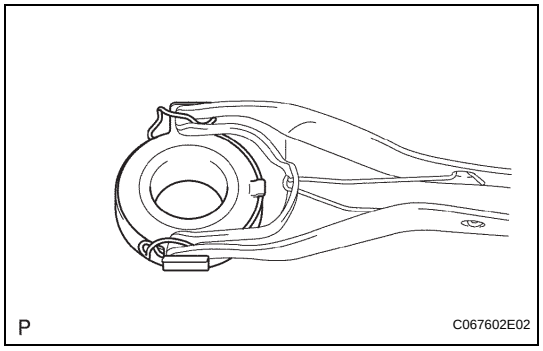
(a) Remove the bolt and driven hole cover from the transaxle case.

(b) Remove the O-ring from the driven hole cover.



5. REMOVE CLUTCH RELEASE FORK SUB-ASSEMBLY

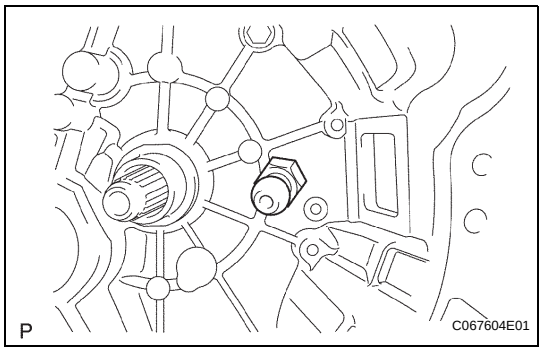
(a) Remove the clutch release fork with clutch release bearing from the front transaxle case.



6. REMOVE CLUTCH RELEASE BEARING ASSEMBLY

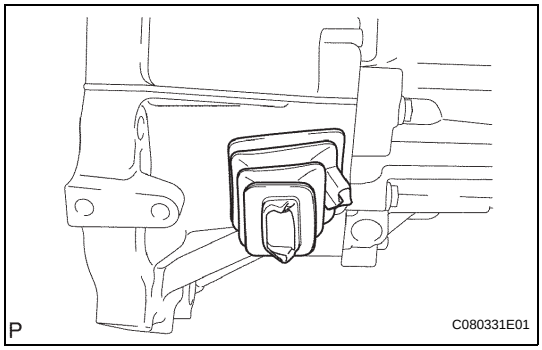
(a) Remove the clutch release fork bearing hub clip and clutch release bearing from the clutch release fork.

MX



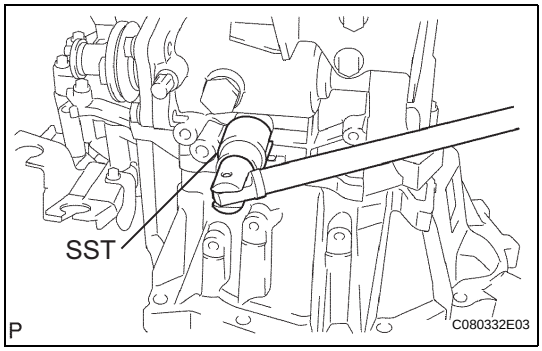
7. REMOVE RELEASE FORK SUPPORT

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



8. REMOVE CLUTCH RELEASE FORK BOOT

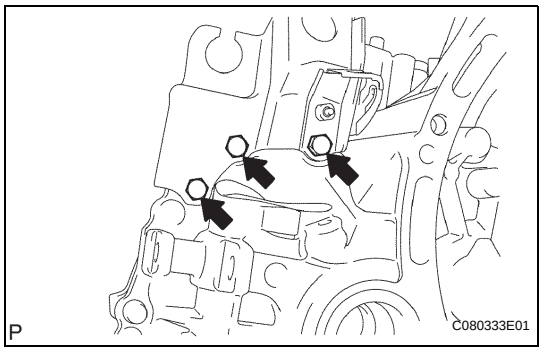
(a) Remove the clutch release fork boot from the front transaxle case.



9. REMOVE BACK-UP LIGHT SWITCH ASSEMBLY

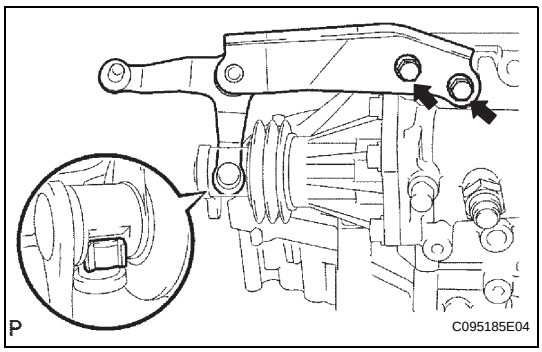
(a) Using SST, remove the back-up light switch and gasket from the transmission case.
SST 09817-16011

MX



10. REMOVE FLOOR SHIFT CONTROL LEVER HOUSING SUPPORT BRACKET

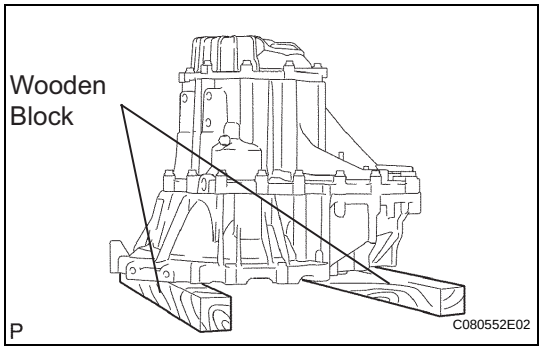
(a) Remove the 3 bolts and floor shift control lever housing support bracket from the front transaxle case.



11. REMOVE SELECTING BELLCRANK ASSEMBLY

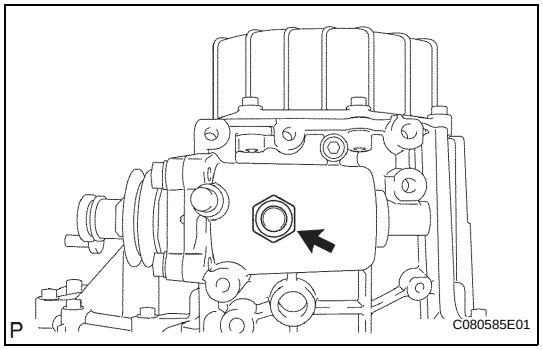
(a) Remove the 2 bolts and selecting bellcrank from the transmission case.

(b) Remove the control shift lever bush.



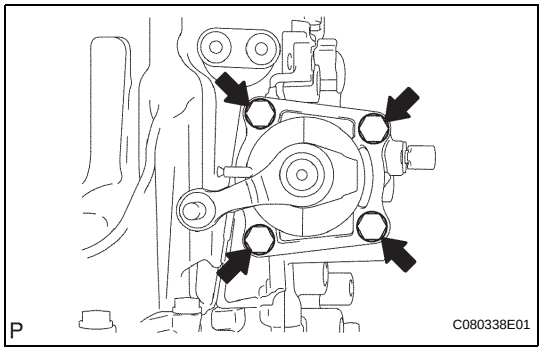
12. FIX MANUAL TRANSAXLE ASSEMBLY

(a) Place the transaxle on wooden blocks.



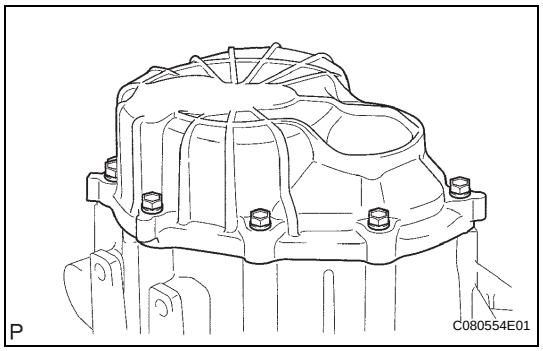
13. REMOVE NO. 1 LOCK BALL ASSEMBLY

(a) Remove the lock ball from the transmission case.



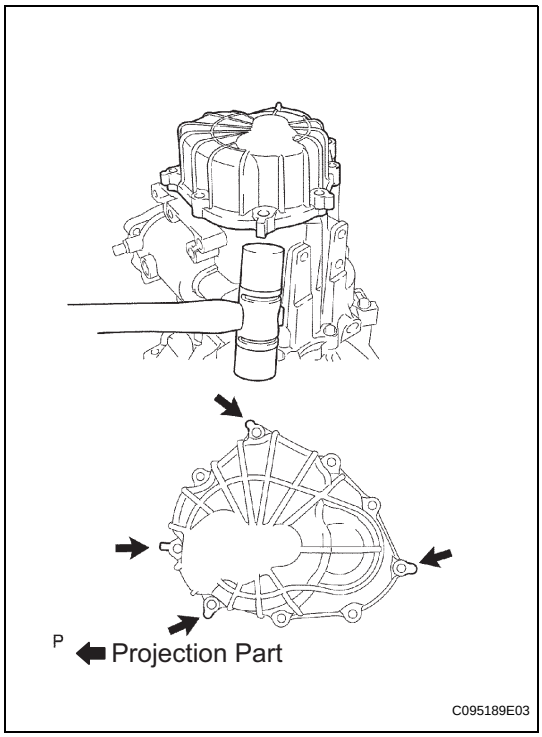
14. REMOVE SHIFT AND SELECT LEVER SHAFT ASSEMBLY

(a) Remove the 4 bolts, lever shaft and gasket from the transmission case.

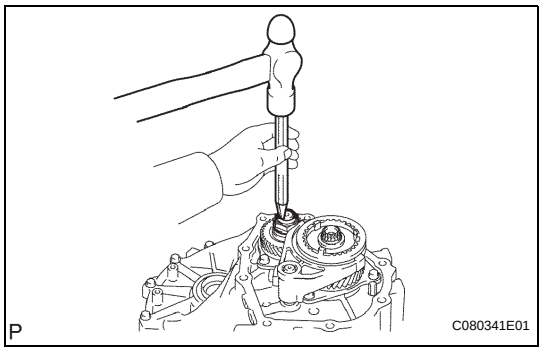


15. REMOVE MANUAL TRANSMISSION CASE COVER SUB-ASSEMBLY

(a) Remove the 9 bolts.

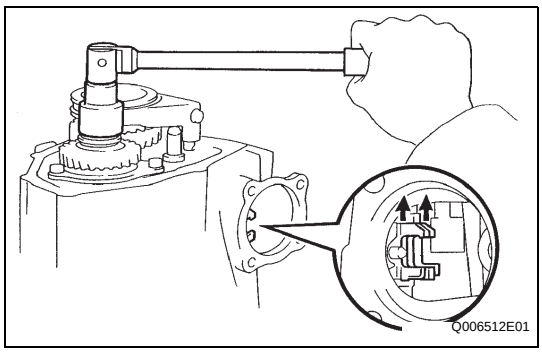


(b) Using a plastic-faced hammer, carefully tap the projection of the manual transmission case cover to remove it from the transmission case.
NOTICE:
Do not damage the transmission case.

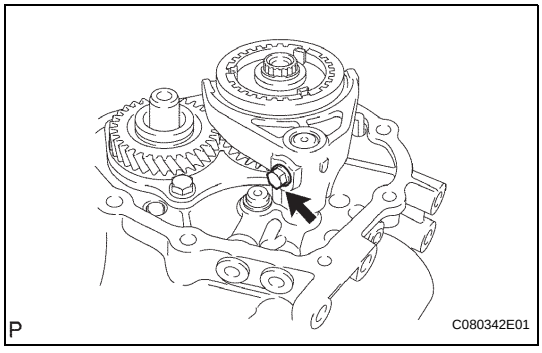


16. REMOVE MANUAL TRANSMISSION REAR OUTPUT SHAFT SET NUT

(a) Using a chisel and hammer, loosen the staked part of the set nut.

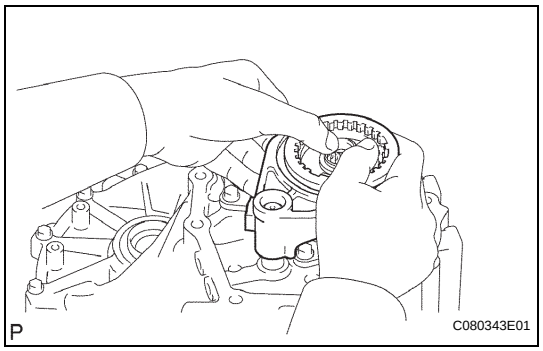


(b) Engage the 2 gears simultaneously to lock the transmission.
(c) Remove the transmission output shaft rear set nut.
(d) Disengage the 2 gears.

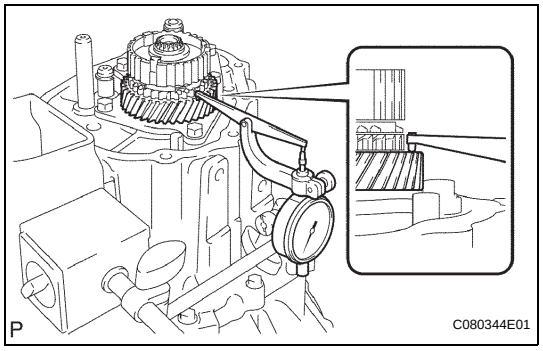


17. REMOVE NO. 3 GEAR SHIFT FORK

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



(b) Remove the No. 3 transmission hub sleeve with No. 3 gear shift fork from the No. 3 transmission clutch hub.



18. INSPECT 5TH GEAR THRUST CLEARANCE

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

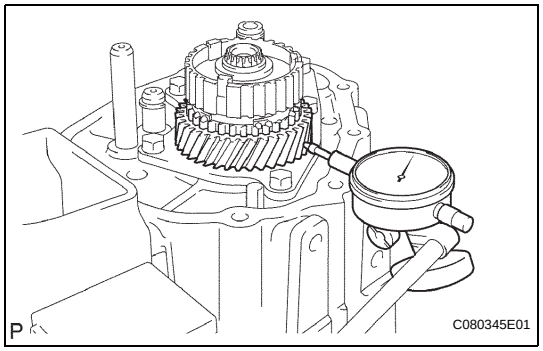
Standard clearance:

0.10 to 0.57 mm (0.0039 to 0.0224 in.)

Maximum clearance:

0.57 mm (0.0224 in.)

If the clearance is greater than the maximum, replace the 5th gear needle roller bearing or input shaft.



19. INSPECT 5TH GEAR RADIAL CLEARANCE

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

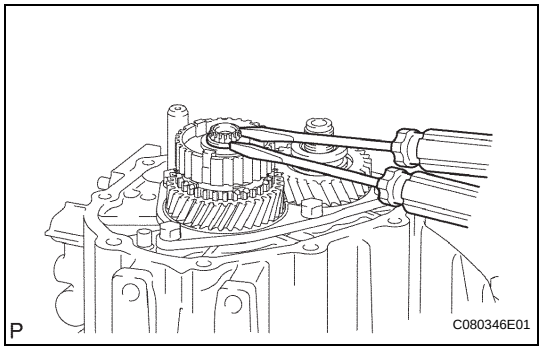
Standard clearance

Item	Specified Condition
KOYO made	0.015 to 0.058 mm (0.0006 to 0.0023 in.)
NSK made	0.015 to 0.056 mm (0.0006 to 0.0022 in.)

Maximum clearance

Item	Specified Condition
KOYO made	0.058 mm (0.0023 in.)
NSK made	0.056 mm (0.0022 in.)

If the clearance is greater than the maximum, replace the gear, needle roller bearing or shaft.

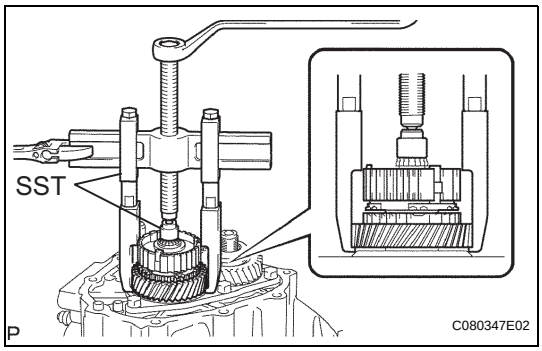


20. REMOVE NO. 3 TRANSMISSION CLUTCH HUB

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

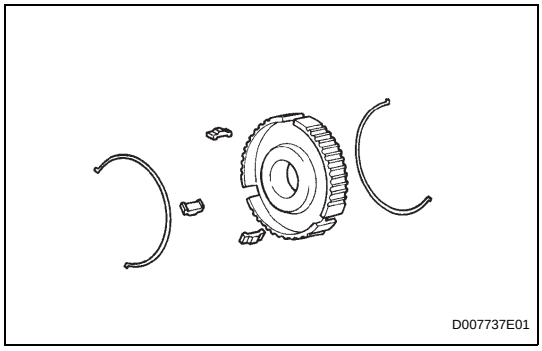
NOTICE:

Use a cloth to keep the snap ring from springing away.

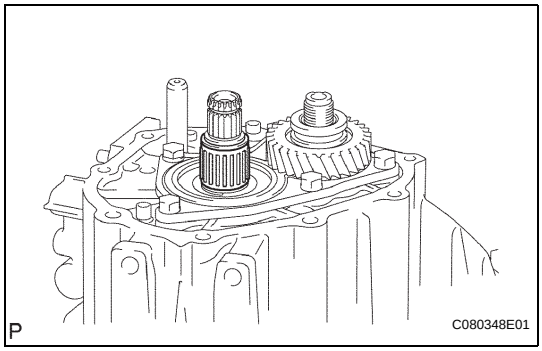


(b) Using SST, remove the No. 3 transmission clutch hub, 5th gear and No. 3 synchronizer ring from the input shaft.

SST 09950-40011 (09951-04020, 09952-04010, 09953-04030, 09954-04010, 09955-04071, 09957-04010), 09950-60010 (09951-00200)

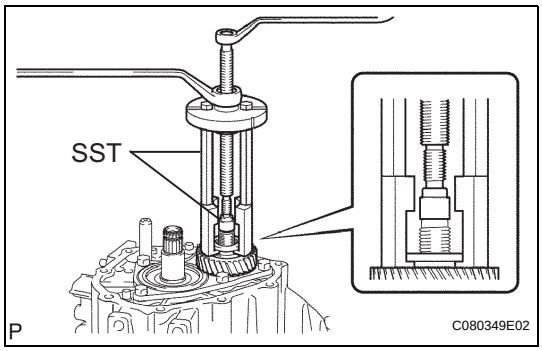


(c) Remove the 3 synchromesh shifting keys and 2 synchromesh shifting key springs from the No. 3 transmission clutch hub.



21. REMOVE 5TH GEAR NEEDLE ROLLER BEARING

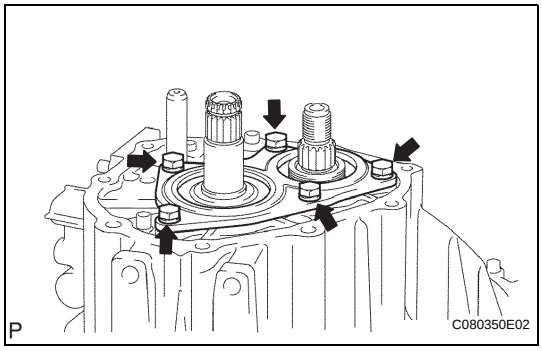
(a) Remove the 5th gear needle roller bearing and 5th gear bearing spacer from the input shaft.



22. REMOVE 5TH DRIVEN GEAR

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

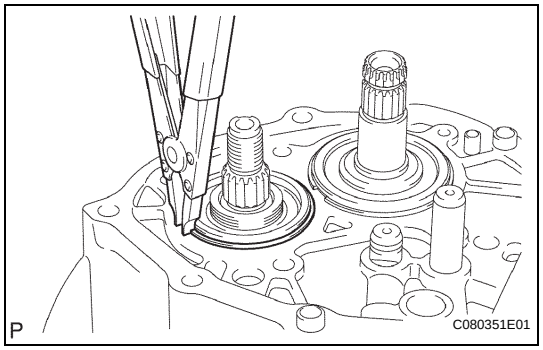
SST 09950-30012 (09951-03010, 09953-03010, 09954-03010, 09955-03011, 09957-04010), 09950-60010 (09951-00190)



23. REMOVE REAR BEARING RETAINER

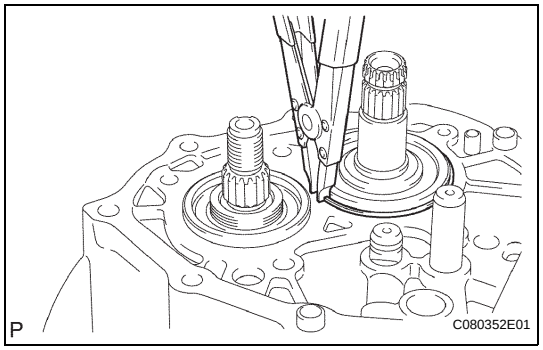
(a) Remove the 5 bolts and bearing retainer from the manual transmission case.

MX



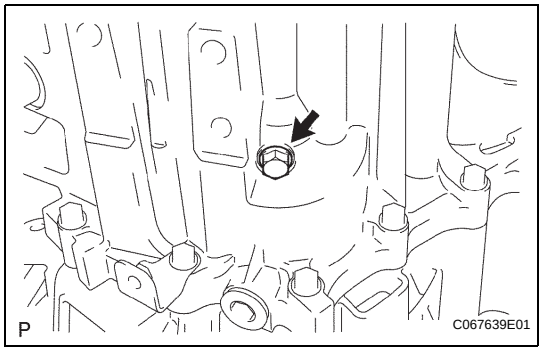
24. REMOVE OUTPUT SHAFT REAR BEARING HOLE SNAP RING

(a) Using a snap ring expander, remove the hole snap ring from the output shaft.



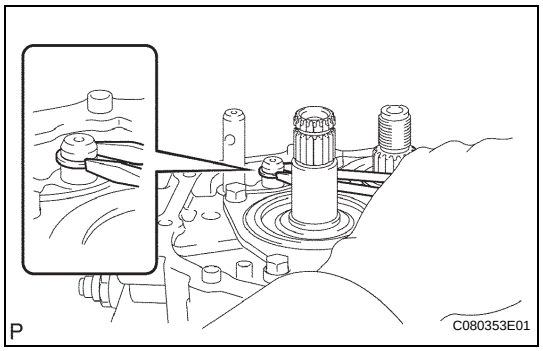
25. REMOVE INPUT SHAFT REAR BEARING HOLE SNAP RING

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



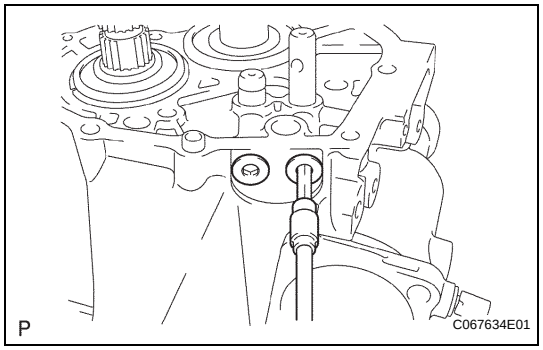
26. REMOVE REVERSE IDLER GEAR SHAFT BOLT

(a) Remove the shaft bolt and gasket from the transmission case.



27. REMOVE SHIFT FORK SHAFT SHAFT SNAP RING

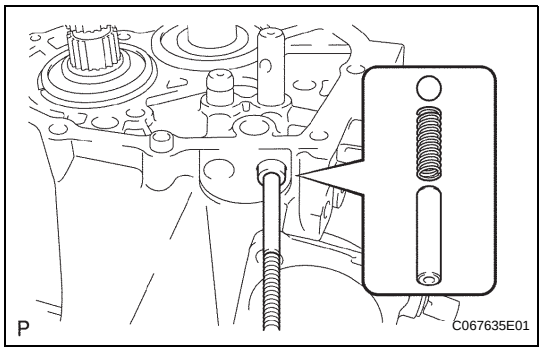
(a) Using 2 screwdrivers and a hammer, tap out the snap ring from the No. 2 gear shift fork shaft.
NOTICE:
Use a cloth to keep the snap ring from springing away.



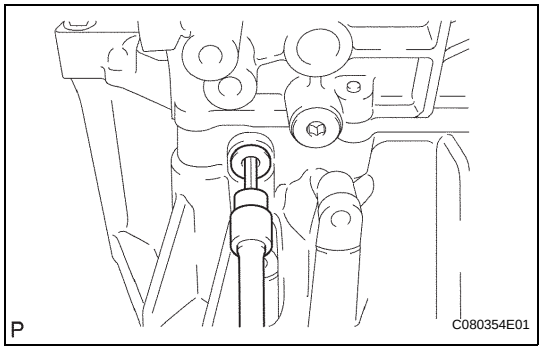
28. REMOVE SHIFT DETENT BALL

(a) Using a hexagon wrench, remove the 2 shift detent ball plugs from the transmission case.

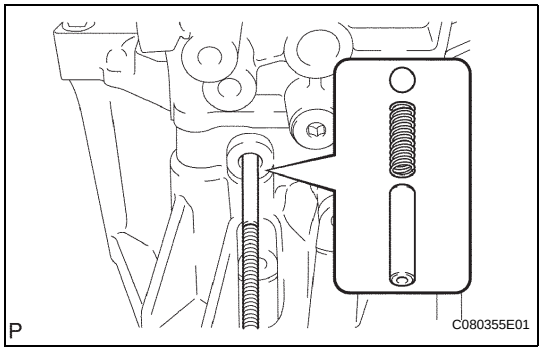
MX



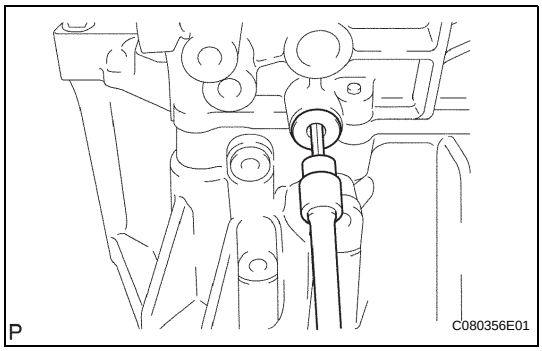
(b) Using a magnetic finger, remove the 2 No. 1 shift detent ball spring seats, 2 shift detent ball springs and 2 shift detent balls from the transmission case.



(c) Using a hexagon wrench, remove the shift detent ball plug from the front transaxle case.

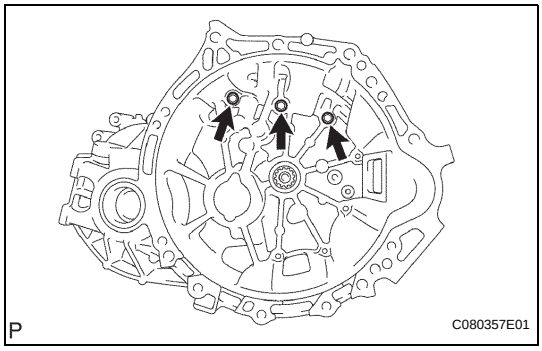


(d) Using a magnetic finger, remove the seat, spring and ball from the front transaxle case.



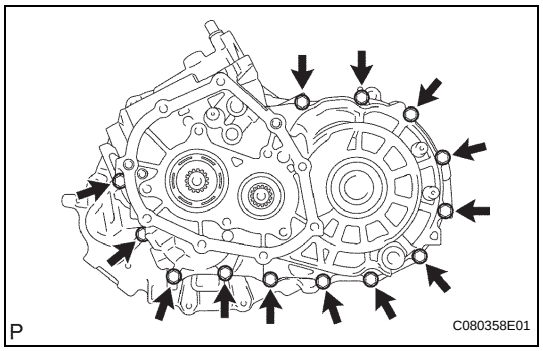
29. REMOVE NO. 2 LOCK BALL ASSEMBLY

(a) Using a hexagon wrench, remove the No. 2 lock ball from the transmission case.

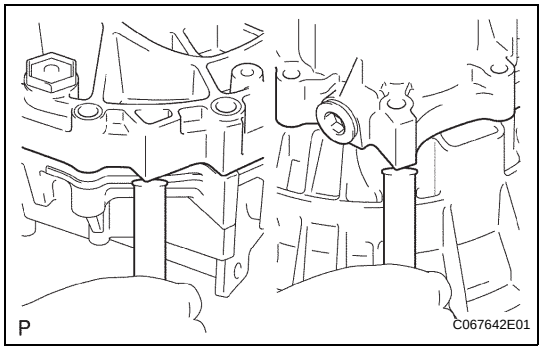


30. REMOVE MANUAL TRANSMISSION CASE

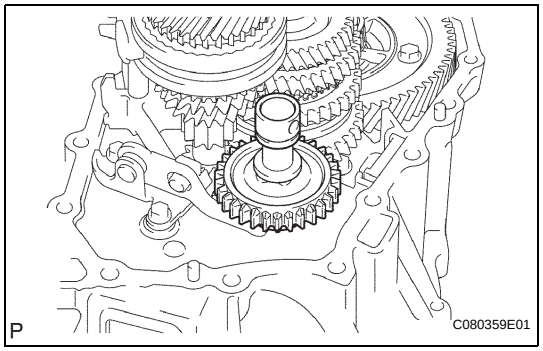
(a) Remove the 3 bolts from the front transaxle case.



(b) Remove the 13 bolts from the transmission case.

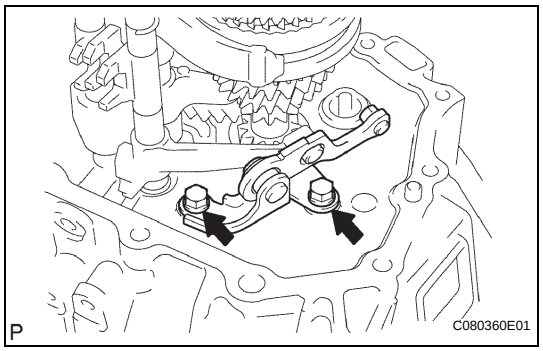


(c) Using a brass bar and hammer, carefully tap the projection of the transmission case to remove it from the transaxle case.
NOTICE:
Do not damage the transmission case and transaxle case.



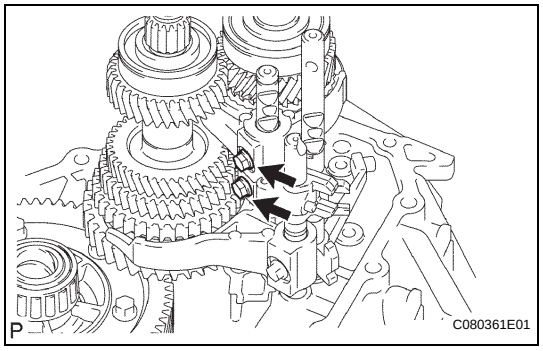
31. REMOVE REVERSE IDLER GEAR SUB-ASSEMBLY

(a) Remove the reverse idler gear, thrust washer and reverse idler gear shaft from the front transaxle case.



32. REMOVE REVERSE SHIFT ARM BRACKET ASSEMBLY

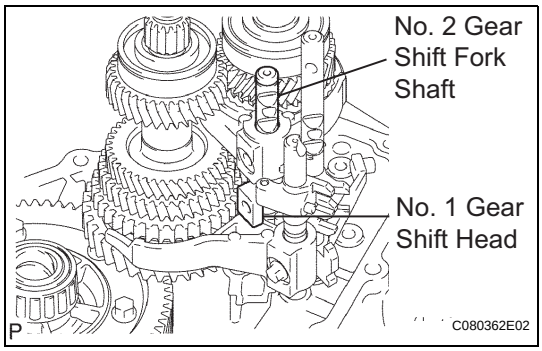
(a) Remove the 2 bolts and reverse shift arm bracket from the front transaxle case.



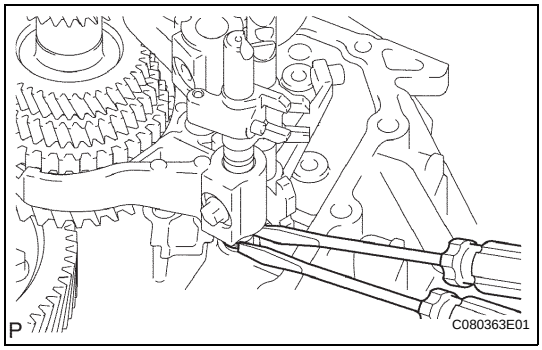
33. REMOVE NO. 2 GEAR SHIFT FORK SHAFT

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

MX

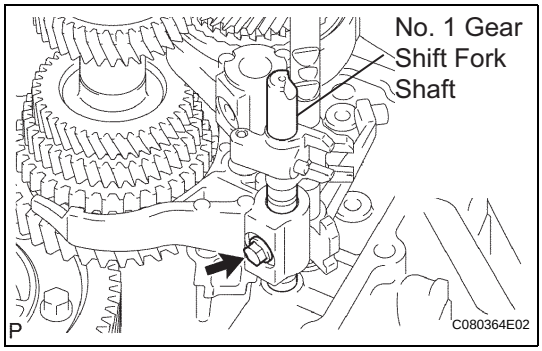


(b) Remove the No. 2 gear shift fork shaft and No. 1 gear shift head from the front transaxle case.

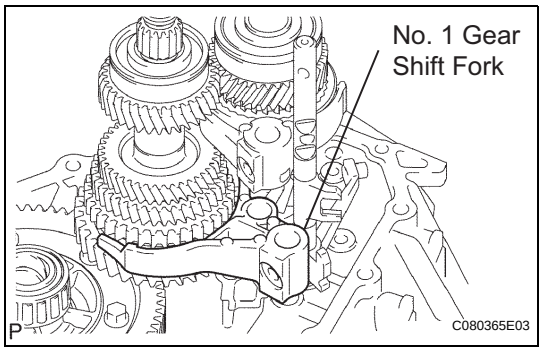


34. REMOVE NO. 1 GEAR SHIFT FORK SHAFT

(a) Using 2 screwdrivers and a hammer, tap out the snap ring.
NOTICE:
Use a cloth to keep the snap ring from springing away.



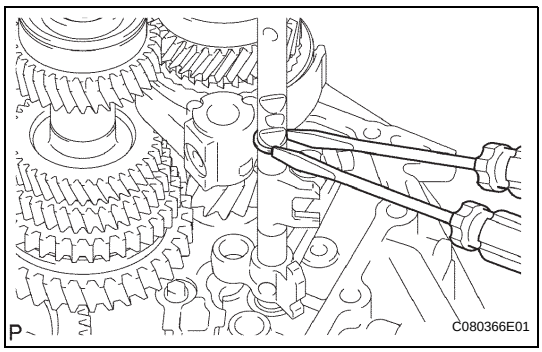
(b) Remove the shift fork set bolt and No. 1 gear shift fork shaft from the No. 1 gear shift fork.

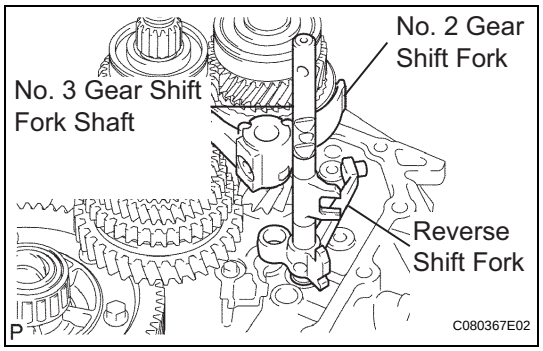


(c) Remove the No. 1 gear shift fork.

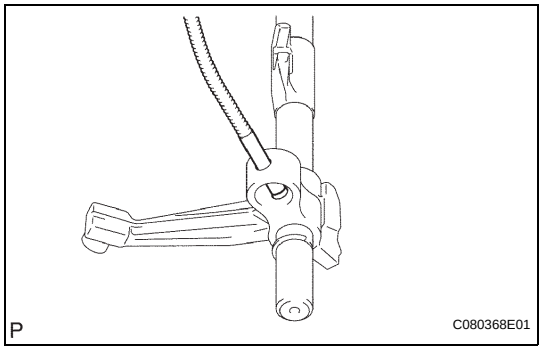
35. REMOVE NO. 3 GEAR SHIFT FORK SHAFT

(a) Using 2 screwdrivers and a hammer, tap out the snap ring from the No. 3 gear shift fork shaft.
NOTICE:
Use a cloth to keep the snap ring from springing away.

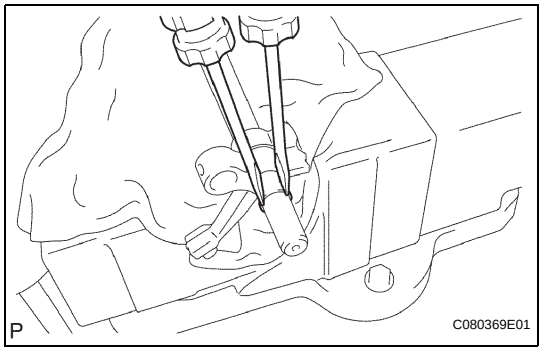




(b) Remove the No. 3 gear shift fork shaft with reverse shift fork and No. 2 gear shift fork from the transaxle case.

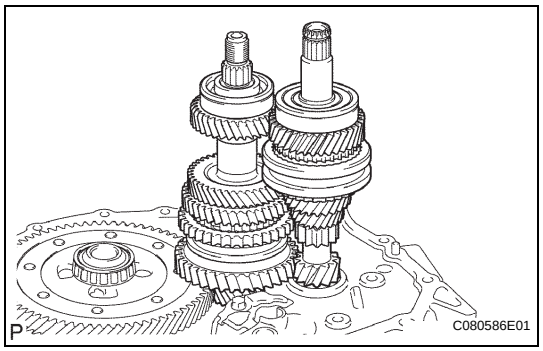


(c) Using a magnetic finger, remove the 2 reverse shift fork balls from the reverse shift fork.



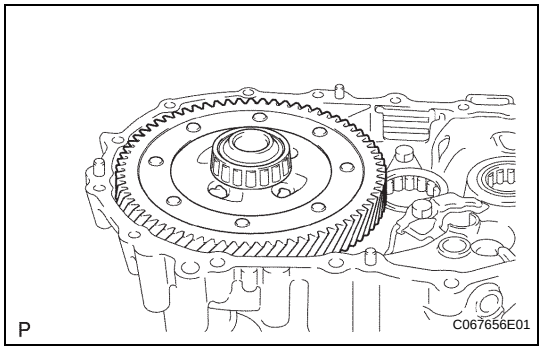
(d) Using 2 screwdrivers and a hammer, tap out the snap ring from the No. 3 shift fork shaft.
NOTICE:
Use a cloth to keep the snap ring from springing away.

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



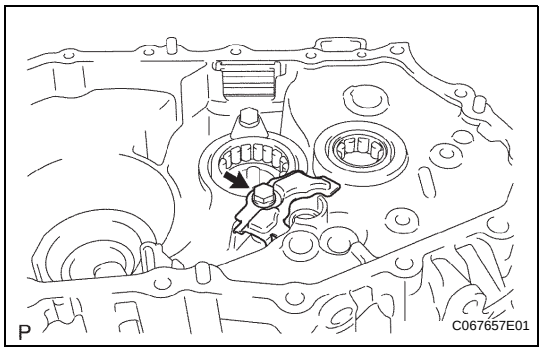
36. REMOVE INPUT SHAFT ASSEMBLY

(a) Remove the input shaft and output shaft from the front transaxle case.



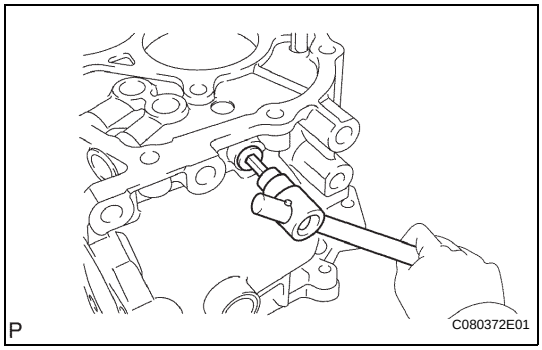
37. REMOVE DIFFERENTIAL CASE ASSEMBLY

(a) Remove the differential case from the front transaxle case.



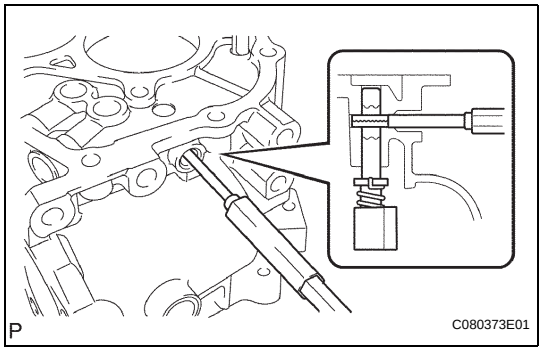
38. REMOVE MANUAL TRANSAXLE CASE RECEIVER

(a) Remove the bolt and transaxle case receiver from the front transaxle case.



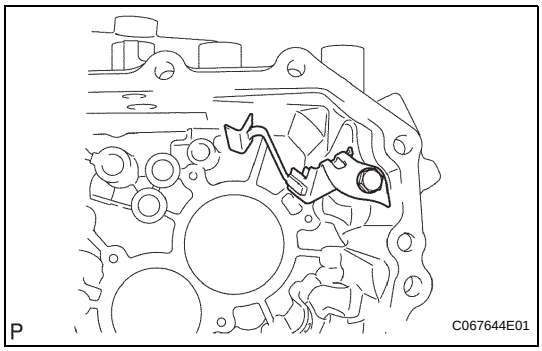
39. REMOVE REVERSE RESTRICT PIN ASSEMBLY

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



(b) Using a 5 mm pin punch and hammer, tap out the slotted spring pin and remove the reverse restrict pin from the transmission case.

MX

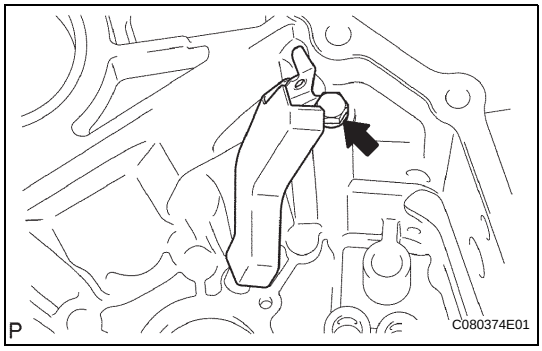


40. REMOVE NO. 1 OIL RECEIVER PIPE

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

NOTICE:

Be careful not to damage the No. 1 oil receiver pipe.

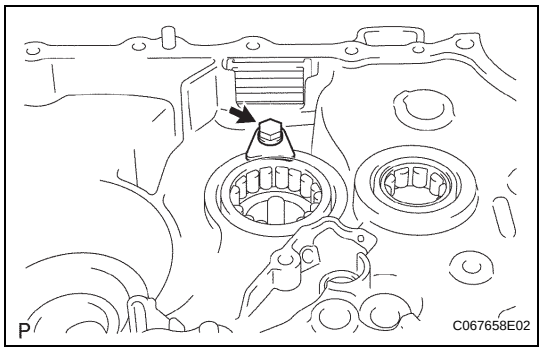


41. REMOVE NO. 2 OIL RECEIVER PIPE

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

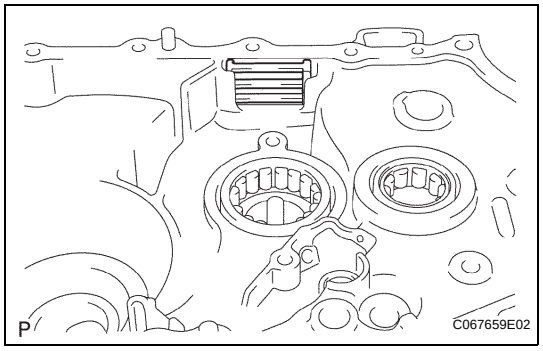
NOTICE:

Be careful not to damage the No. 2 oil receiver pipe.



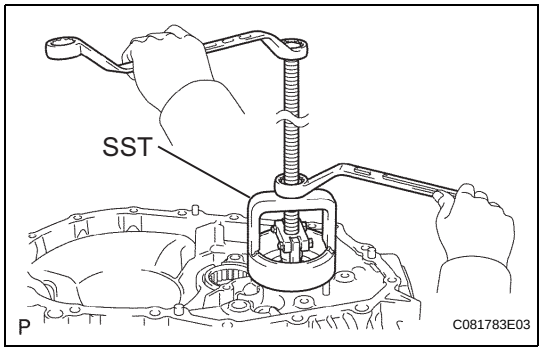
42. REMOVE BEARING LOCK PLATE

(a) Remove the bolt and bearing lock plate from the front transaxle case.



43. REMOVE TRANSMISSION MAGNET

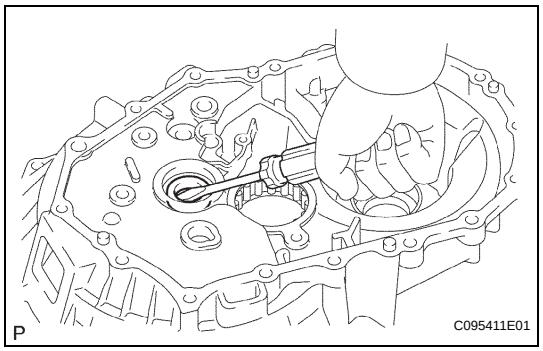
(a) Remove the transmission magnet from the front transaxle case.



44. REMOVE INPUT SHAFT FRONT BEARING

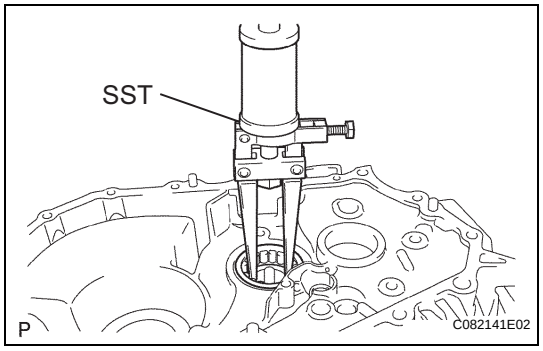
(a) Using SST, remove the front bearing from the front transaxle case.

SST 09612-65014 (09612-01050, 09612-01060)



45. REMOVE FRONT TRANSAXLE CASE OIL SEAL

(a) Using a screwdriver, pry out the front transaxle case oil seal from the transaxle case.



46. REMOVE OUTPUT SHAFT FRONT BEARING

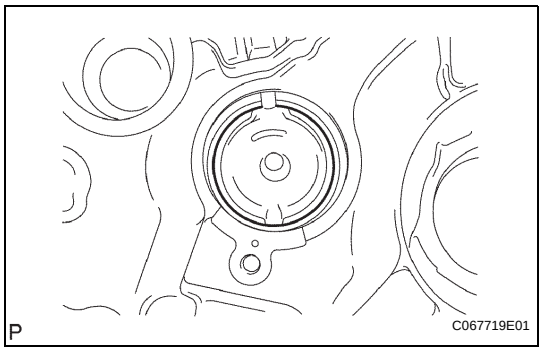
(a) Using SST, remove the front bearing from the front transaxle case.

SST 09308-00010

NOTICE:

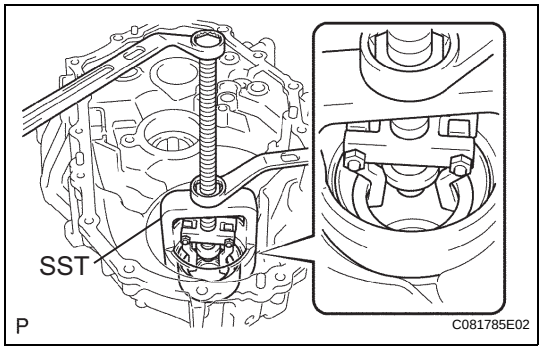
Do not apply excessive force to the front transaxle case when installing SST.

MX



47. REMOVE OUTPUT SHAFT COVER

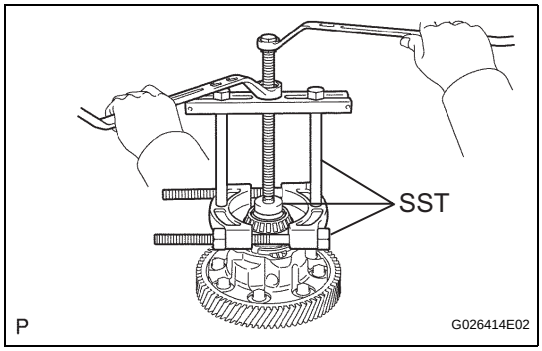
(a) Remove the output shaft cover from the front transaxle case.



48. REMOVE FRONT DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

(a) Using SST, remove the front differential case front tapered roller bearing (outer race) and plate washer from the front transaxle case.

SST 09612-65014 (09612-01040, 09612-01050)

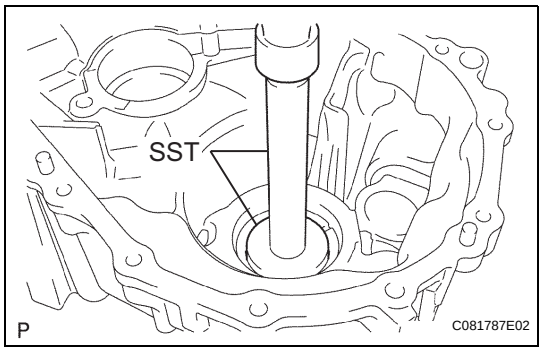


(b) Using SST, remove the front differential case front tapered roller bearing (inner race) from the differential case assembly.

SST 09950-00020, 09950-00030, 09950-40011 (09957-04010), 09950-60010 (09951-00360)

NOTICE:

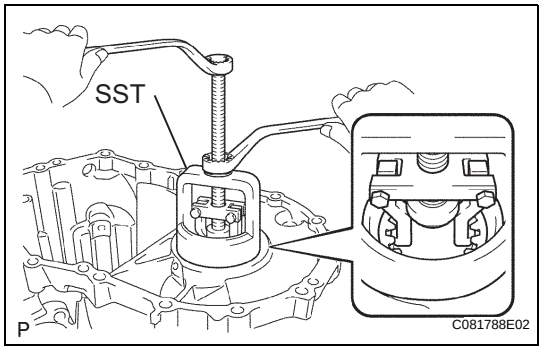
Be careful not to damage the bearing.



49. REMOVE TRANSAXLE CASE OIL SEAL

(a) Using SST and a hammer, tap out the transaxle case oil seal from the front transaxle case.

SST 09950-60010 (09951-00530), 09950-70010 (09951-07150)

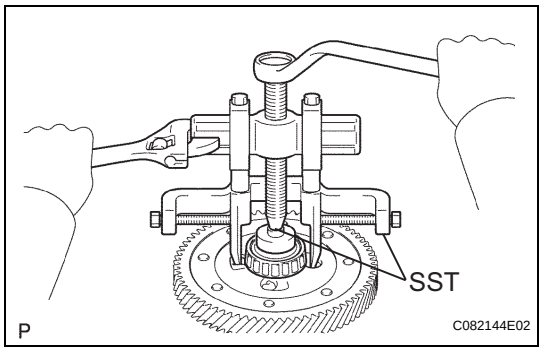


50. REMOVE FRONT DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

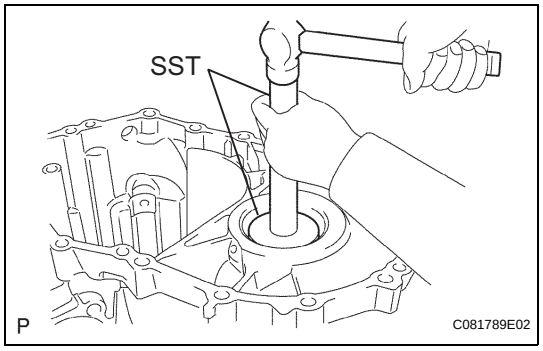
(a) Using SST, remove the rear tapered roller bearing (outer race) and plate washer from the transmission case.

SST 09612-65014 (09612-01040, 09612-01050)

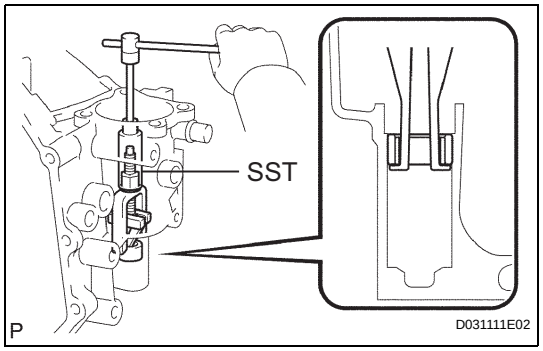
MX



(b) Using SST, remove the rear tapered roller bearing (inner race) from the front differential case.
SST 09950-40011 (09951-04010, 09952-04010, 09953-04020, 09954-04010, 09955-04061, 09957-04010, 09958-04011), 09950-60010 (09951-00360)
NOTICE:
Be careful not to damage the bearing.

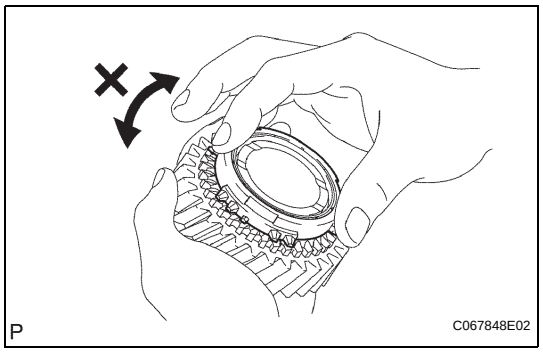


51. REMOVE TRANSMISSION CASE OIL SEAL
(a) Using SST and a hammer, tap out the transmission case oil seal from the transmission case.
SST 09950-60010 (09951-00530), 09950-70010 (09951-07150)

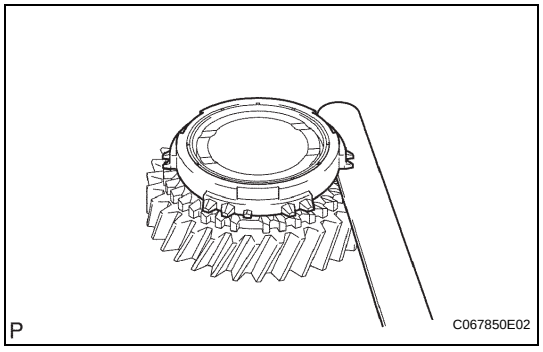


52. REMOVE SHIFT AND SELECT LEVER SHAFT BIMETAL FORMED BUSH
(a) Using SST, remove the bush.
SST 09319-60020

INSPECTION

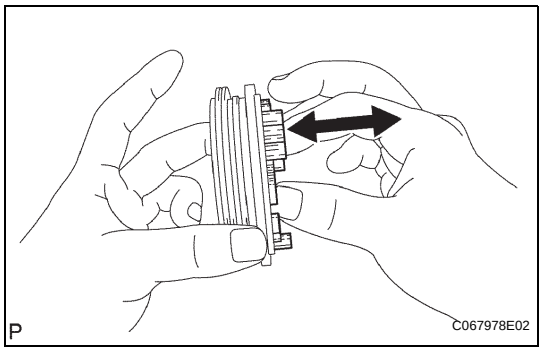


1. INSPECT NO. 3 SYNCHRONIZER RING
(a) Check for wear or damage.
(b) Coat the 5th gear cone with gear oil. Turn the synchronizer ring in one direction while pushing it against the 5th gear cone. Check that the ring locks. If the synchronizer ring does not lock, replace the ring or 5th gear.



(c) Using a feeler gauge, measure the clearance between the synchronizer ring back and gear spline end.
Minimum clearance:
0.75 mm (0.0295 in.)
If the clearance is less than the minimum, replace the synchronizer ring and gear.
NOTICE:
Ensure the fine lapping compound is completely washed off after rubbing.

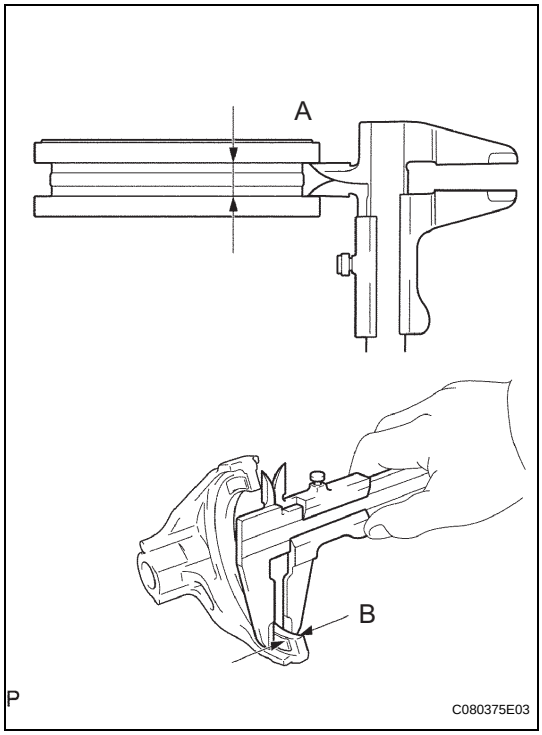
MX



2. INSPECT NO. 3 TRANSMISSION HUB SLEEVE

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

(b) Check that the spline gear edges of the No. 3 transmission hub sleeve are not worn down.



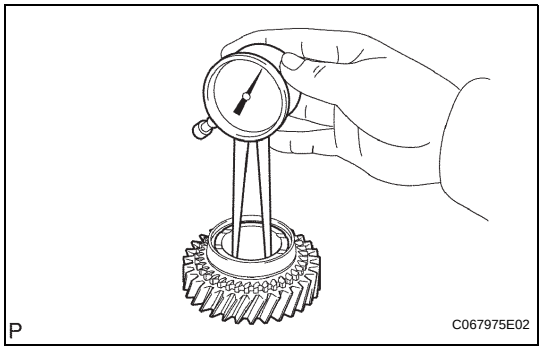
(c) Using a vernier caliper, measure the width of the No. 3 transmission hub sleeve groove (A) and the thickness of the claw part on the No. 3 gear shift fork (B), and calculate the clearance.

Standard clearance:

A - B = 0.3 to 0.5 mm (0.012 to 0.020 in.)

If the clearance exceeds the standard clearance, replace the No. 3 transmission hub sleeve and No. 3 gear shift fork.

MX



3. INSPECT 5TH GEAR

(a) Using a caliper gauge, inspect the inside diameter of the 5th gear.

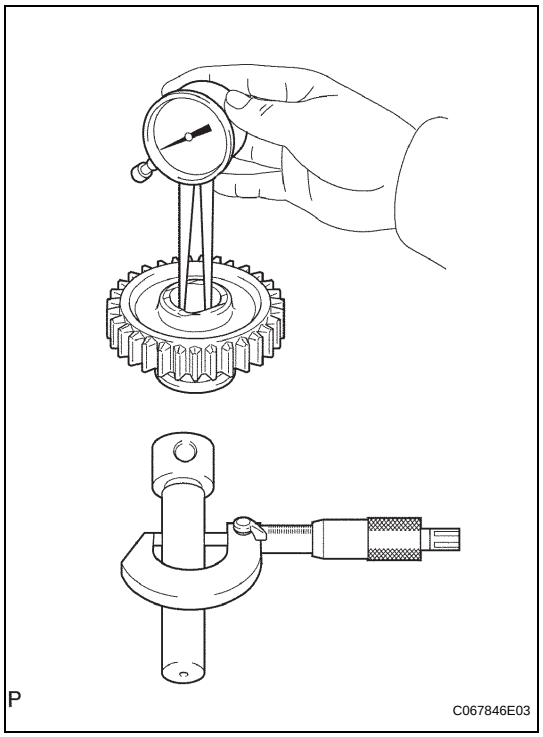
Standard inside diameter:

29.915 to 29.931 mm (1.1778 to 1.1783 in.)

Maximum inside diameter:

29.931 mm (1.1783 in.)

If the inside diameter is greater than the maximum, replace the 5th gear.



4. INSPECT REVERSE IDLER GEAR SUB-ASSEMBLY

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

Standard inside diameter:
18.040 to 18.058 mm (0.7102 to 0.7109 in.)
Maximum inside diameter:
18.058 mm (0.7109 in.)

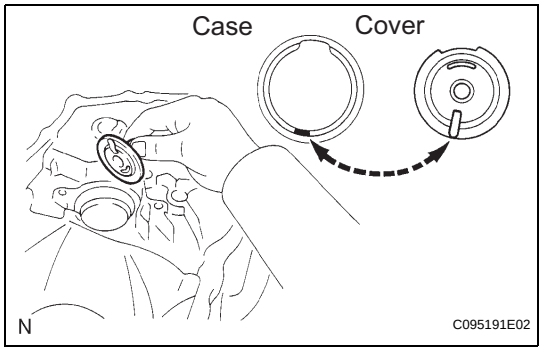
If the inside diameter is greater than the maximum, replace the reverse idler gear sub-assembly.

(b) Using a micrometer, measure the diameter of the reverse idler gear shaft.

Standard diameter:
17.966 to 17.984 mm (0.7073 to 0.7080 in.)
Minimum diameter:
17.966 mm (0.7073 in.)

If the diameter is less than the minimum, replace the reverse idler gear shaft sub-assembly.

REASSEMBLY



1. INSTALL OUTPUT SHAFT COVER

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

NOTICE:
Install the output shaft cover projection into the case hole.

2. INSTALL OUTPUT SHAFT FRONT BEARING

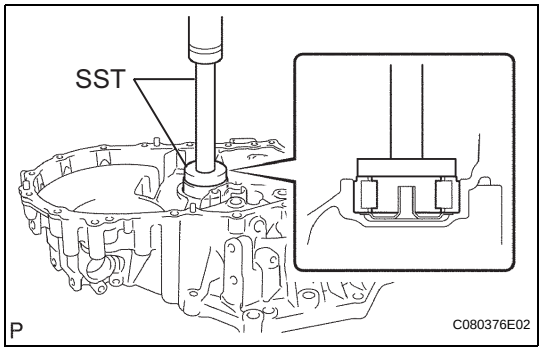
(a) Coat a new front bearing with gear oil.

(b) Using SST and a press, press it into the front transaxle case.

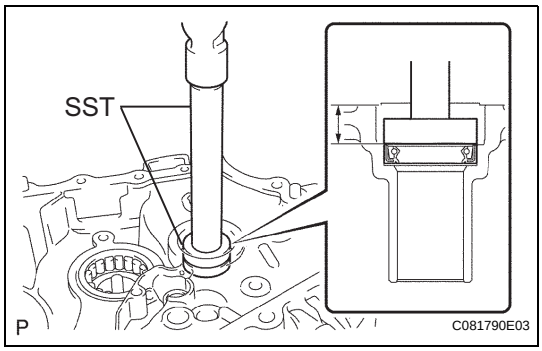
SST 09950-60010 (09951-00550), 09950-70010 (09951-07150)

NOTICE:

- **Be sure to install the bearing in the correct direction, as shown in the illustration.**
- **When replacing the output shaft front bearing, also replace the front bearing inner race.**



MX



3. INSTALL FRONT TRANSAXLE CASE OIL SEAL

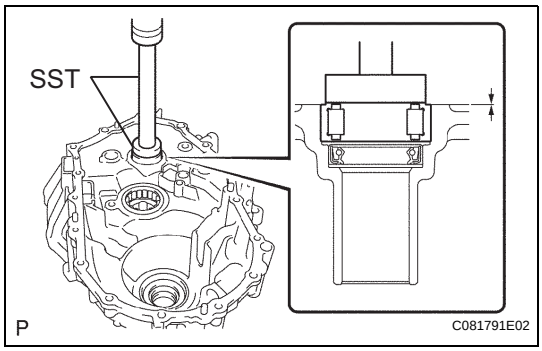
(a) Using SST and a hammer, press in a new front transaxle case oil seal to the front transaxle case.

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

Standard depth:

15.6 to 16.0 mm (0.6141 to 0.6299 in.)

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



4. INSTALL INPUT SHAFT FRONT BEARING

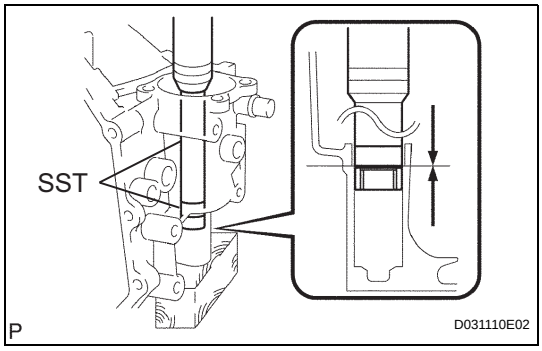
(a) Coat a new input shaft front bearing with gear oil.

(b) Using SST and a press, press it into the front transaxle case.

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

Standard depth:

0 to 0.3 mm (0 to 0.012 in.)



5. INSTALL SHIFT AND SELECT LEVER SHAFT BIMETAL FORMED BUSH

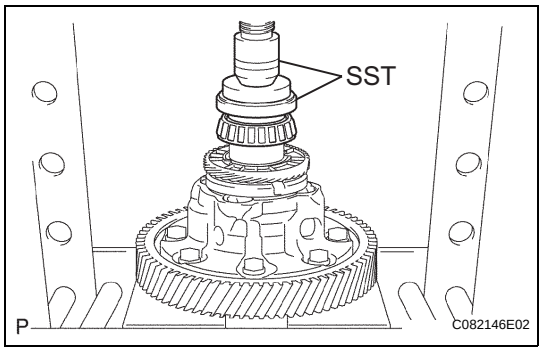
(a) Using SST and a press, press in a new bush to the transmission case.

SST 09950-60010 (09951-00220), 09950-70010 (09951-07100)

Standard depth:

0 to 0.5 mm (0 to 0.020 in.)

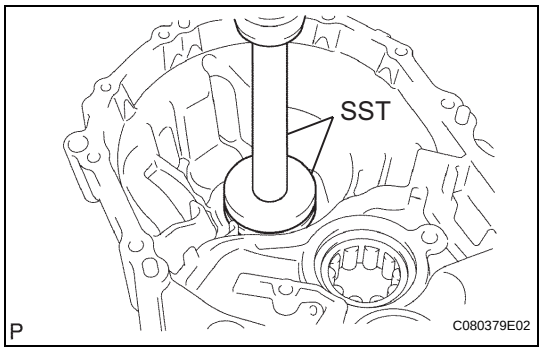
MX



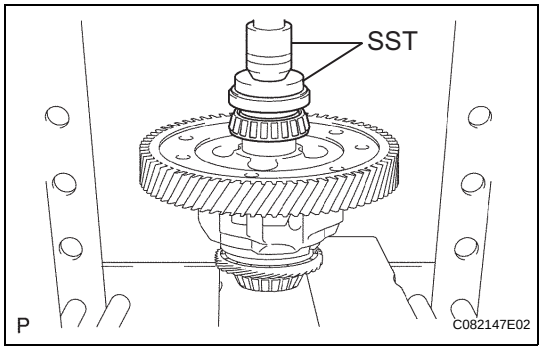
6. INSTALL FRONT DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING

(a) Using SST and a press, press in the front tapered roller bearing (inner race) to the front differential case.

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

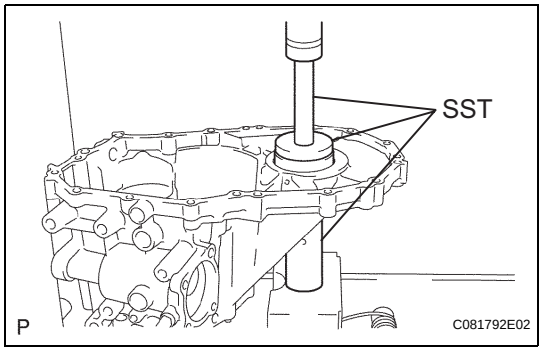


(b) Using SST and a press, press in the front tapered roller bearing (outer race) with plate washer to the front transaxle case.
SST 09350-32014 (09351-32120), 09950-60010 (09951-00530)

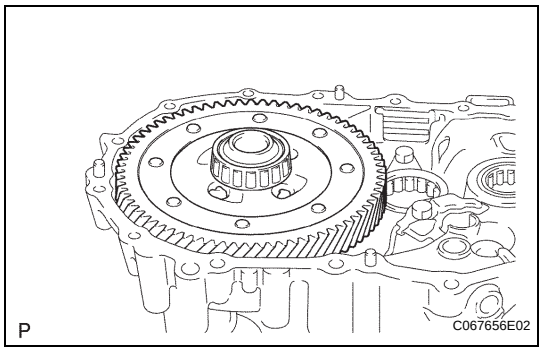


7. INSTALL FRONT DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

(a) Using SST and a press, press in the rear tapered roller bearing (inner race) to the differential case.
SST 09350-32014 (09351-32120), 09950-60010 (09951-00530)



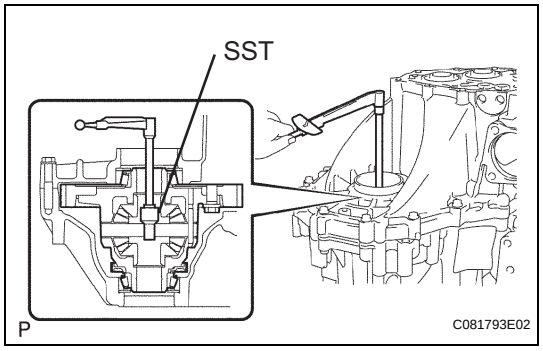
(b) Using SST and a press, press in the rear tapered roller bearing (outer race) with plate washer to the transmission case.
SST 09309-36010, 09950-60020 (09951-00710), 09950-70010 (09951-07150)
HINT:
Use a plate washer with the same thickness as the removed one.



8. ADJUST DIFFERENTIAL SIDE BEARING PRELOAD

(a) Coat the differential case with gear oil, and install it to the front transaxle case.

(b) Install the 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 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.
Standard preload (at starting)

Item	Specified Condition
New bearing	0.78 to 1.57 N*m (7.95 to 16.0 kgf*cm, 6.9 to 13.89 in.*lbf)

MX

Item	Specified Condition
Reused bearing	0.49 to 0.98 N*m (5.0 to 10.0 kgf*cm, 4.34 to 8.67 in.*lbf)

If the preload is not within the specification, select another plate washer.

Standard plate washer thickness

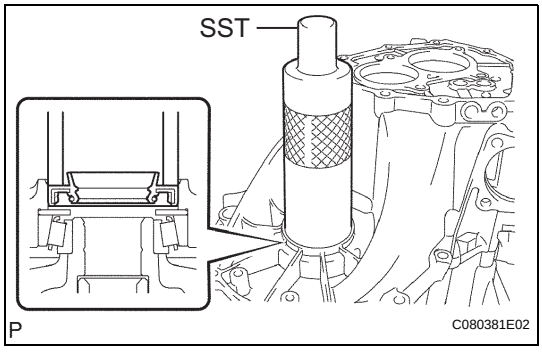
Mark	Thickness mm (in.)
AA	2.10 (0.0827)
BB	2.15 (0.0846)
CC	2.20 (0.0866)
DD	2.25 (0.0886)
EE	2.30 (0.0906)
FF	2.35 (0.0925)
GG	2.40 (0.0945)
HH	2.45 (0.0965)
JJ	2.50 (0.0984)
KK	2.55 (0.1004)
LL	2.60 (0.1024)
MM	2.65 (0.1043)
NN	2.70 (0.1063)
PP	2.75 (0.1083)
QQ	2.80 (0.1102)
RR	2.85 (0.1122)
SS	2.90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

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 plate washer thickness.

(e) Remove the 16 bolts and transmission case.

(f) Remove the differential case from the front transaxle case.



9. INSTALL TRANSMISSION CASE OIL SEAL

(a) Using SST and a hammer, tap in a new transmission case oil seal to the transmission case.

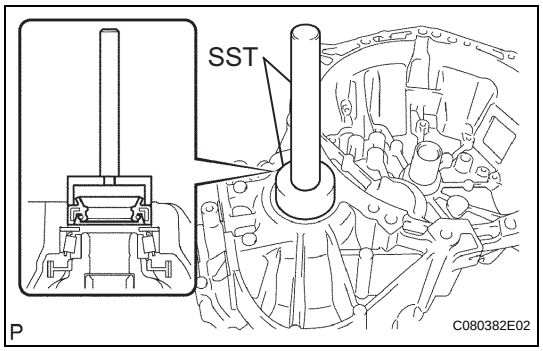
SST 09316-60011 (09316-00011)

Standard drive depth:

2.1 to 2.7 mm (0.083 to 0.106 in.)

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

MX



10. INSTALL TRANSAXLE CASE OIL SEAL

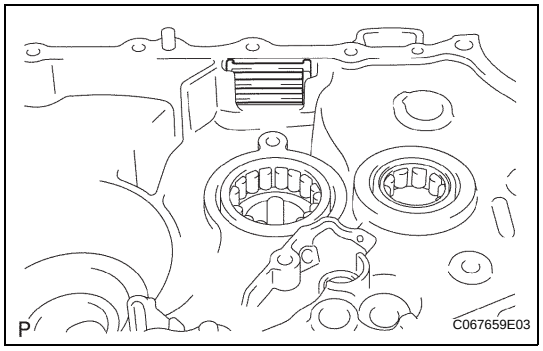
(a) Using SST and a hammer, tap in a new oil seal to the front transaxle case.

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

Standard depth:

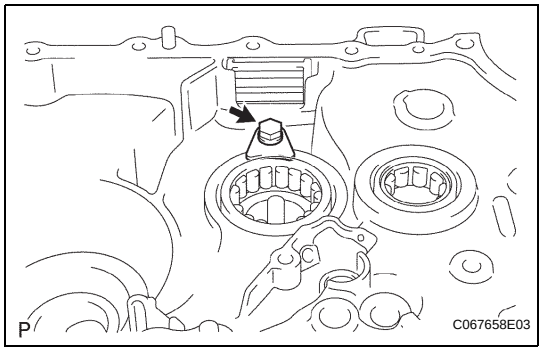
1.6 to 2.2 mm (0.063 to 0.087 in.)

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



11. INSTALL TRANSMISSION MAGNET

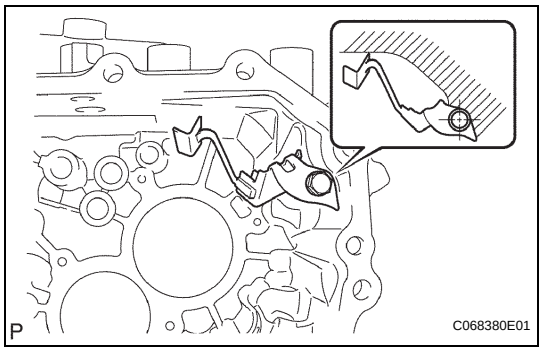
(a) Clean the transmission magnet, and install it to the front transaxle case.



12. INSTALL BEARING LOCK PLATE

(a) Install the bearing lock plate to the front transaxle case with the bolt.

Torque: 11 N*m (115 kgf*cm, 8.3 ft.*lbf)



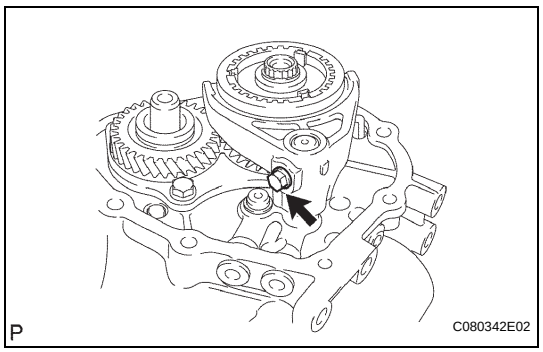
13. INSTALL NO. 1 OIL RECEIVER PIPE

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

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

NOTICE:

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



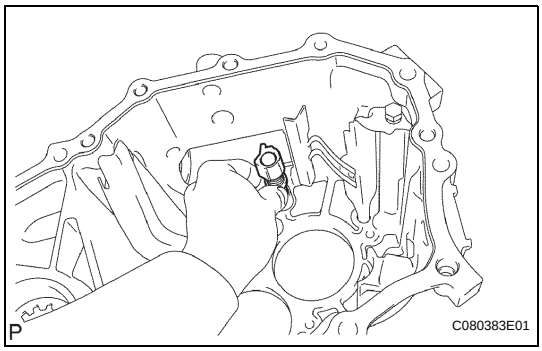
14. INSTALL NO. 2 OIL RECEIVER PIPE

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

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

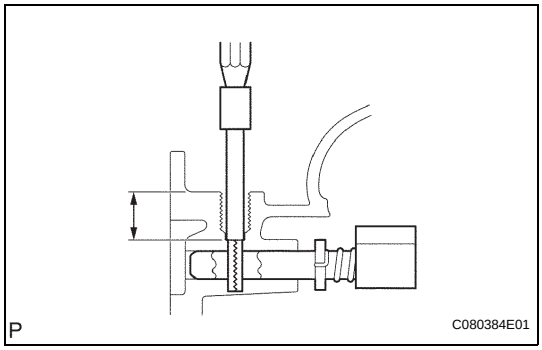
NOTICE:

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

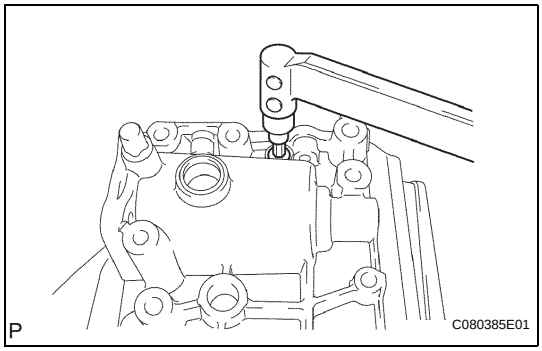


15. INSTALL REVERSE RESTRICT PIN ASSEMBLY

(a) Install the reverse restrict pin to the manual transmission case.
NOTICE:
Be sure to set the reverse restrict pin in the correct orientation.



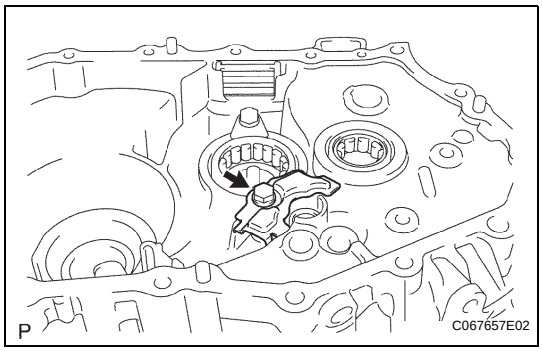
(b) Using a 5 mm pin punch and hammer, tap in the slotted pin to the reverse restrict pin.
Standard depth:
16.0 to 17.0 mm (0.6299 to 0.6693 in.)



(c) Apply sealant to the reverse restrict pin plug.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

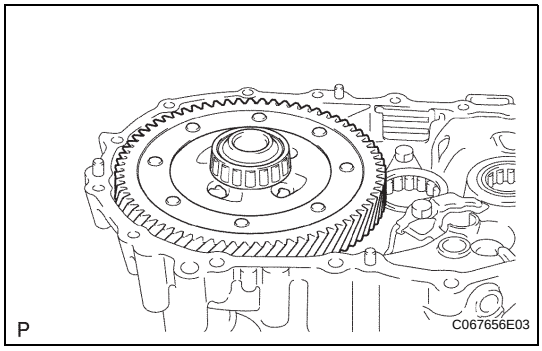
(d) Using a hexagon wrench and torque wrench, install the reverse restrict pin plug to the transmission case.
Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)

MX



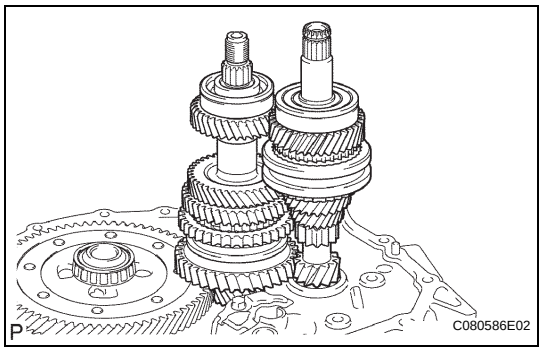
16. INSTALL MANUAL TRANSAXLE CASE RECEIVER

(a) Install the transaxle case receiver to the front transaxle case with the bolt.
Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)



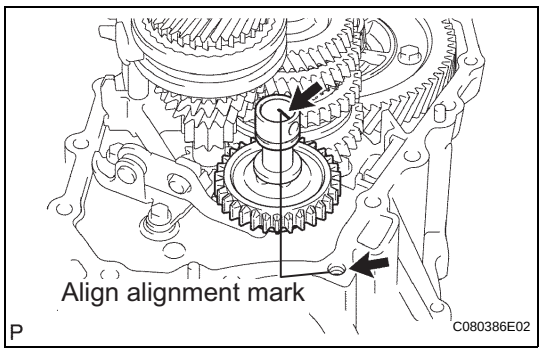
17. INSTALL DIFFERENTIAL CASE ASSEMBLY

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



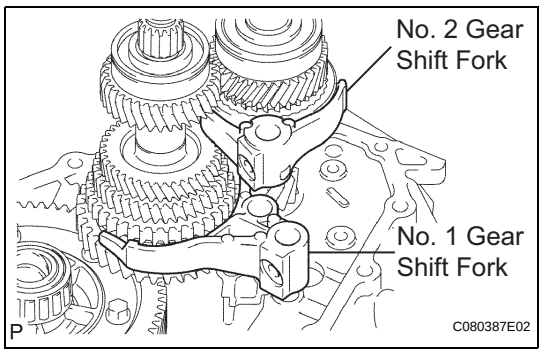
18. INSTALL INPUT SHAFT ASSEMBLY

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



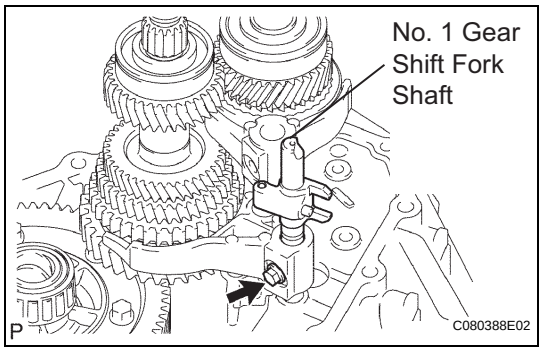
19. INSTALL REVERSE IDLER GEAR SUB-ASSEMBLY

(a) Coat the reverse idler gear, 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, as shown in the illustration.



20. INSTALL NO. 1 GEAR SHIFT FORK SHAFT

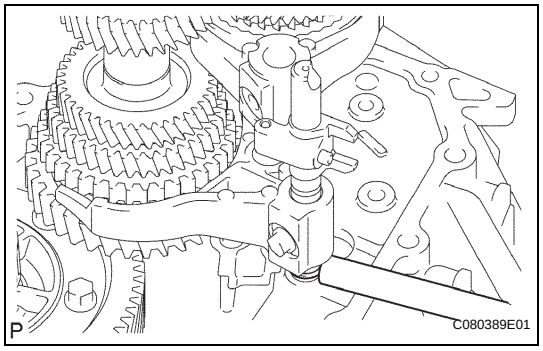
(a) Coat the No. 1 gear shift fork and No. 2 gear shift fork with gear oil, and install them.



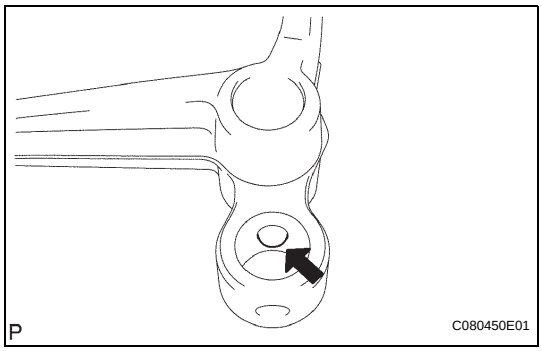
(b) Coat the No. 1 gear shift fork shaft with gear oil, and install it.

(c) Apply sealant to the shift fork set bolt.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

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



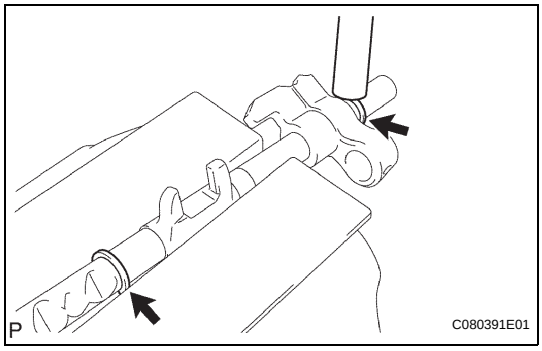
(e) Using a brass bar and hammer, tap in a new shaft snap ring to the No. 1 gear shift fork shaft.



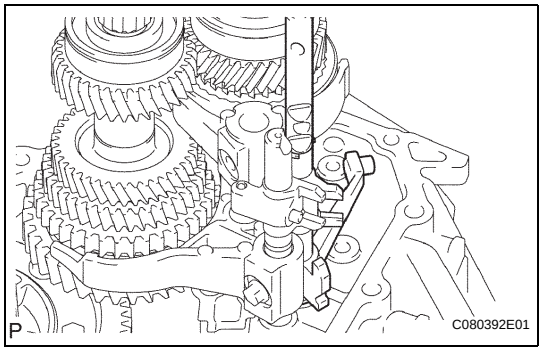
21. INSTALL NO. 3 GEAR SHIFT FORK SHAFT

(a) Coat the 2 shift fork balls with MP grease, and install them to the reverse shift fork.

(b) Install the reverse shift fork to the No. 3 gear shift fork shaft.

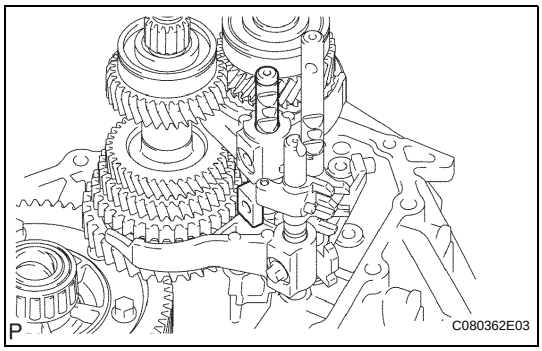


(c) Using a brass bar and hammer, tap in 2 new shift fork shaft shaft snap rings to the No. 3 shift fork shaft.

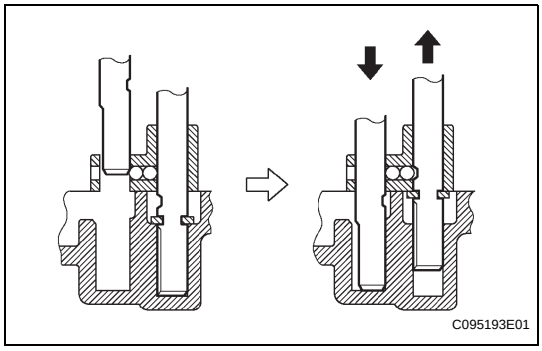


(d) Coat the No. 3 gear shift fork shaft with gear oil, and install it.

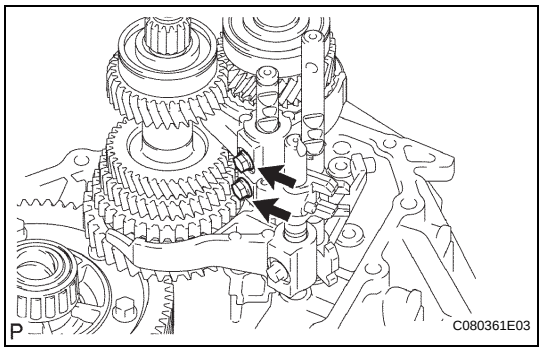
MX



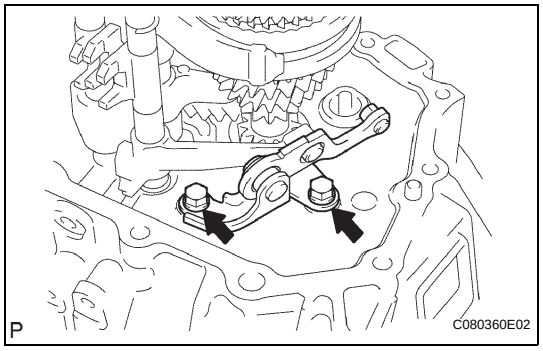
22. INSTALL NO. 2 GEAR SHIFT FORK SHAFT



(a) Coat the No. 1 gear shift head and No. 2 gear shift fork shaft with gear oil, and install them.
NOTICE:
To avoid the interference of the 2 shift fork balls, lift up the No. 3 gear shift fork shaft to the position shown in the illustration.

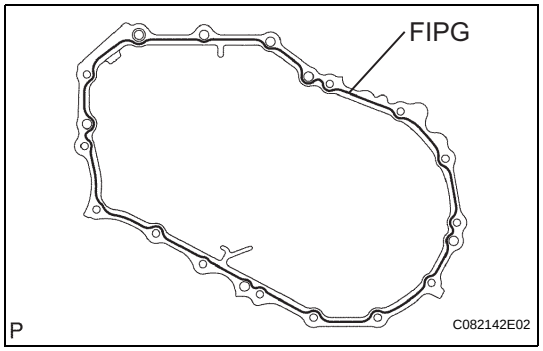


(b) Coat the 2 shift lock bolts with sealant, and install them to the No. 2 gear shift fork and No. 1 shift head.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 16 N*m (160 kgf*cm, 12 ft.*lbf)



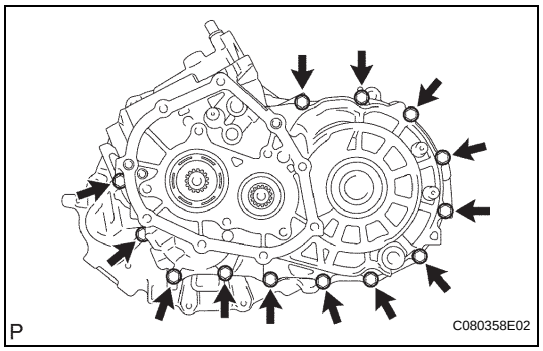
23. INSTALL REVERSE SHIFT ARM BRACKET ASSEMBLY

(a) Install the reverse shift arm bracket to the front transaxle case with 2 bolts.
Torque: 17 N*m (175 kgf*cm, 13 ft.*lbf)

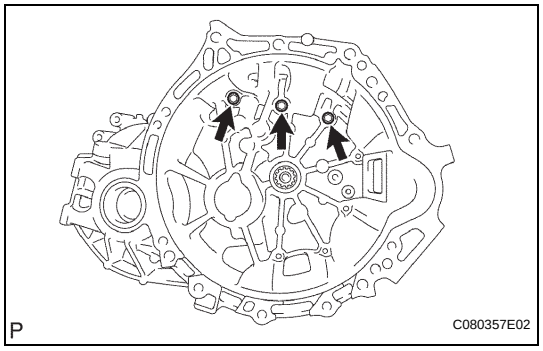


24. INSTALL MANUAL TRANSMISSION CASE

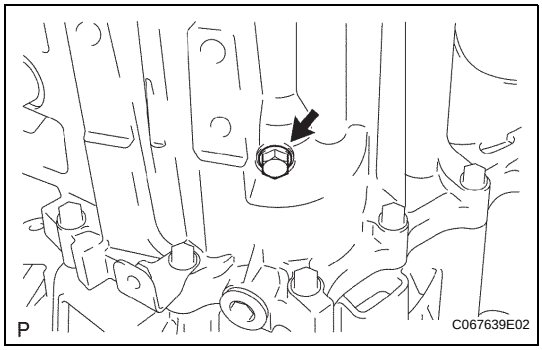
(a) Apply FIPG to the transmission case, as shown in the illustration.
FIPG:
Part No. 08826-00090, THREE BOND 1281 or equivalent
NOTICE:
Parts must be assembled within 10 minutes of application. Otherwise, the packing (FIPG) material must be removed and reapplied.



(b) Coat the 13 bolts with sealant, and install them to the transmission case.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



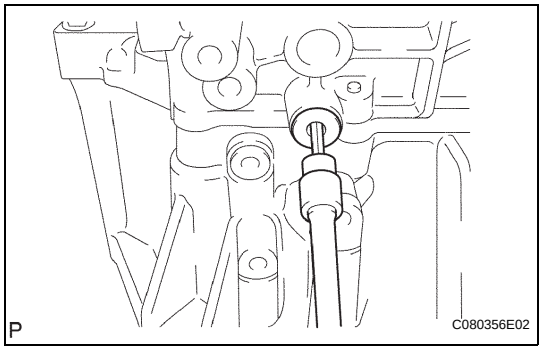
(c) Coat the 3 bolts with sealant, and install them to the front transaxle case.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



25. INSTALL REVERSE IDLER GEAR SHAFT BOLT

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

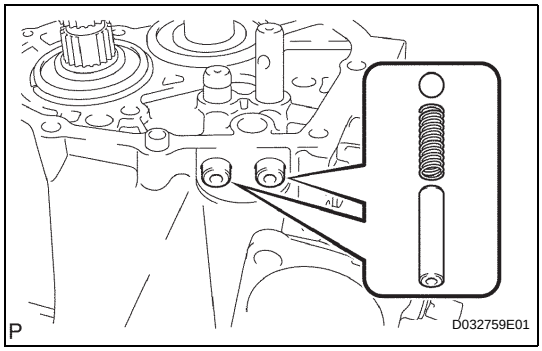
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



26. INSTALL NO. 2 LOCK BALL ASSEMBLY

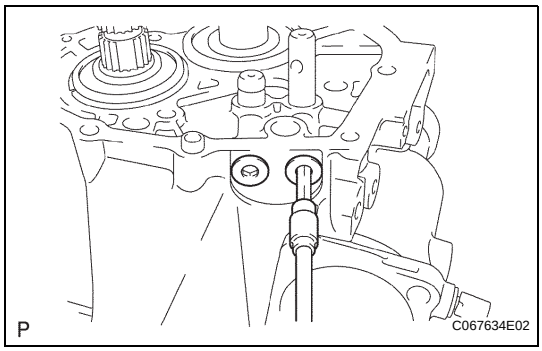
(a) Coat the No. 2 lock ball with sealant, and install it with a hexagon wrench.

Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



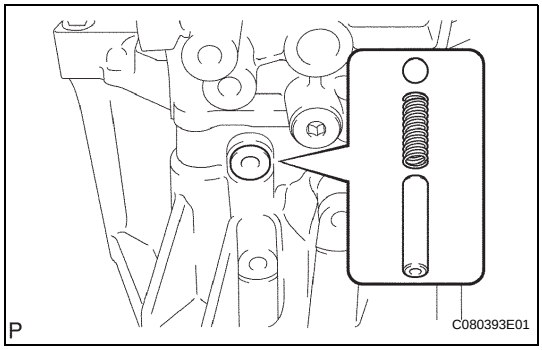
27. INSTALL SHIFT DETENT BALL

(a) Install the 2 shift detent balls, 2 shift detent ball springs with 2 No. 1 shift detent ball spring seats to the manual transmission case.



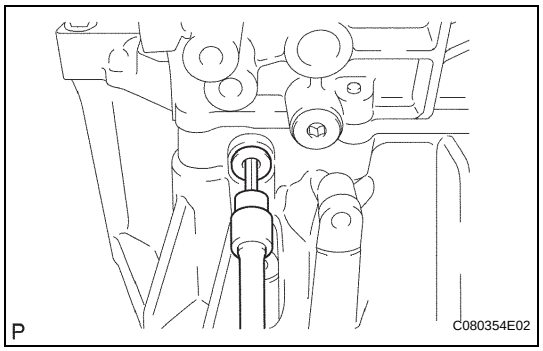
(b) Coat the 2 shift detent ball plugs with sealant, and install them with a hexagon wrench.

Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 22 N*m (224 kgf*cm, 16 ft.*lbf)

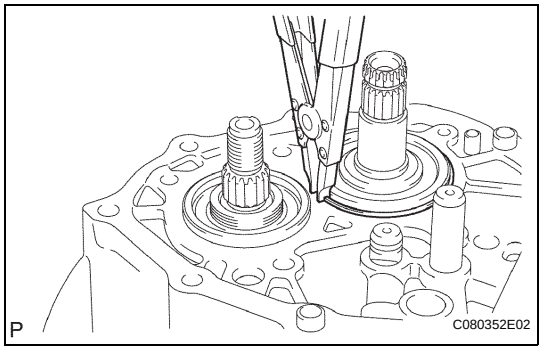


(c) Install the shift detent ball, shift detent ball compression spring and No. 1 shift detent ball spring seat to the front transaxle case.

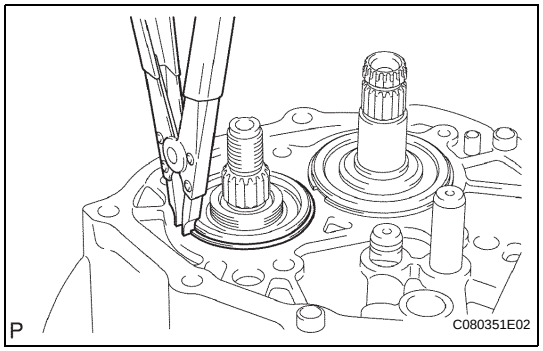
MX



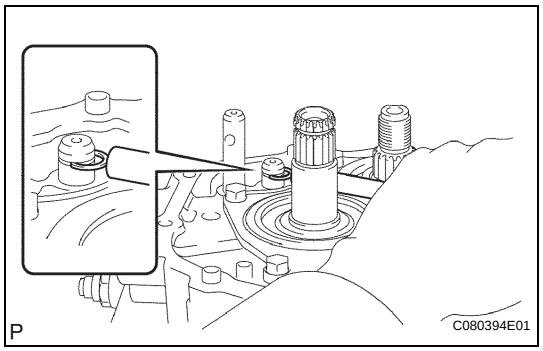
(d) Coat the shift detent ball plug with sealant, and install it with a hexagon wrench.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 22 N*m (224 kgf*cm, 16 ft.*lbf)



28. INSTALL INPUT SHAFT REAR BEARING HOLE SNAP RING
(a) Using a snap ring expander, install a new hole snap ring to the input shaft.

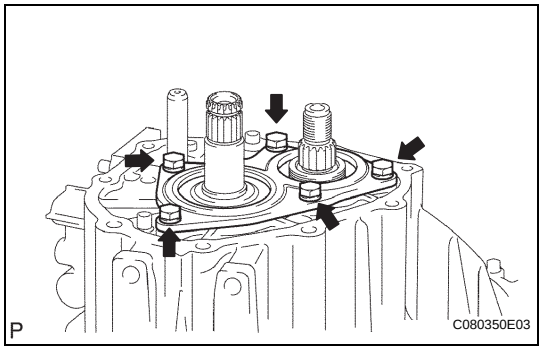


29. INSTALL OUTPUT SHAFT REAR BEARING HOLE SNAP RING
(a) Using a snap ring expander, install a new hole snap ring to the output shaft.

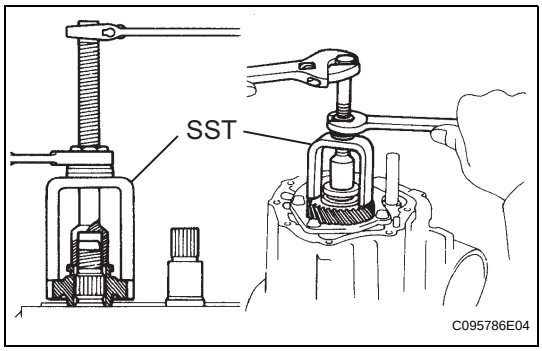


30. INSTALL SHIFT FORK SHAFT SHAFT SNAP RING
(a) Using a brass bar and hammer, tap in a new shift fork shaft shaft snap ring to the No. 2 shift fork shaft.

MX

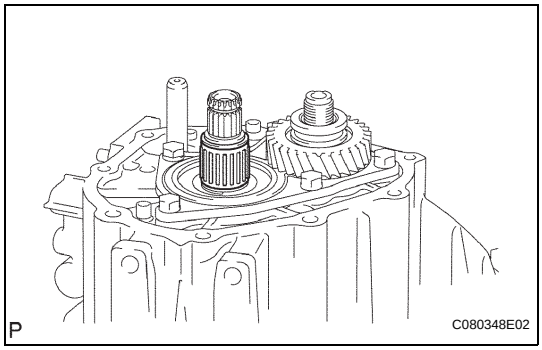


31. INSTALL REAR BEARING RETAINER
(a) Coat the 5 bolts with sealant, and install the rear bearing retainer to the transmission case with the 5 bolts.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 27 N*m (280 kgf*cm, 20 ft.*lbf)



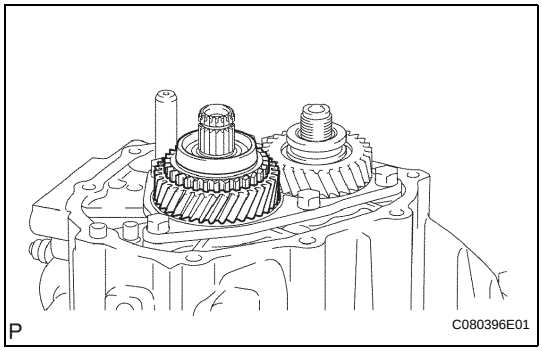
32. INSTALL 5TH DRIVEN GEAR

(a) Using SST, install the 5th driven gear to the output shaft.
SST 09309-12020



33. INSTALL 5TH GEAR NEEDLE ROLLER BEARING

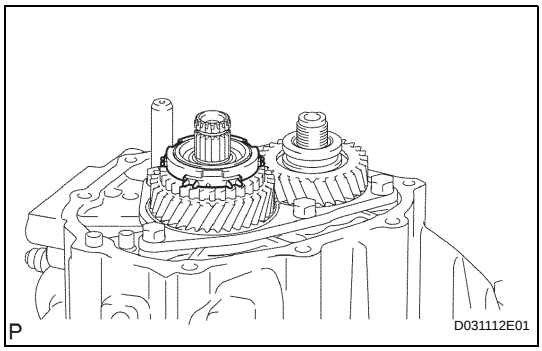
(a) Coat the 5th gear needle roller bearing and 5th gear bearing spacer with gear oil, and install them to the input shaft.



34. INSTALL 5TH GEAR

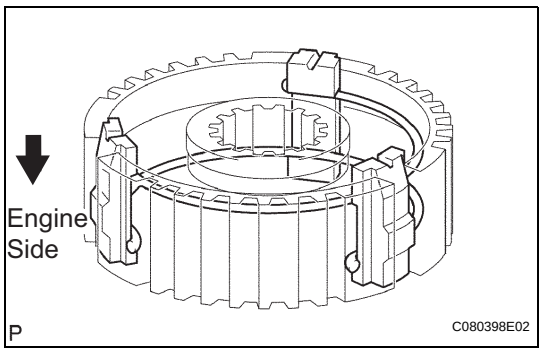
(a) Coat the 5th gear with gear oil, and install it to the input shaft.

MX



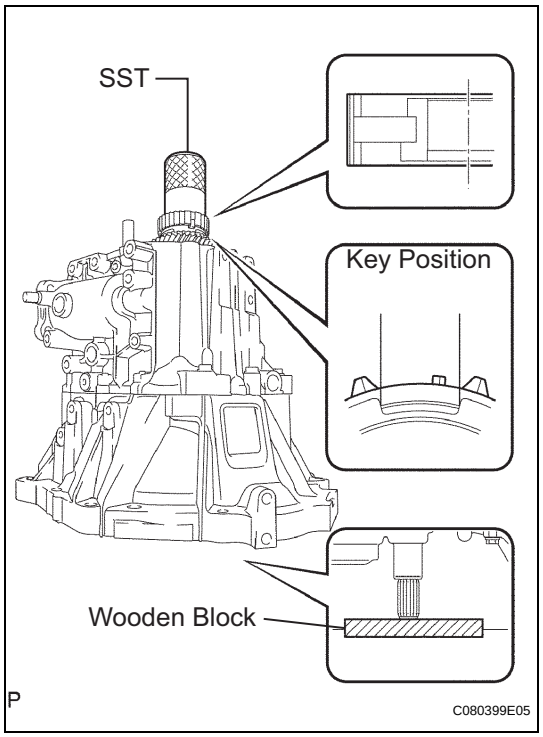
35. REMOVE NO. 3 SYNCHRONIZER RING

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



36. INSTALL NO. 3 TRANSMISSION CLUTCH HUB

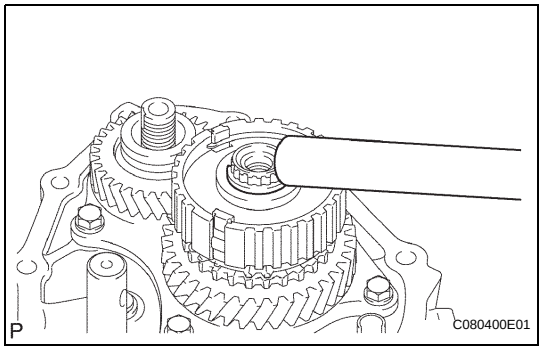
(a) Install the 3 synchromesh shifting keys and 2 synchromesh shifting key springs to the No. 3 transmission clutch hub as shown in the illustration.
NOTICE:
Do not set both openings of the shifting key springs in the same position.



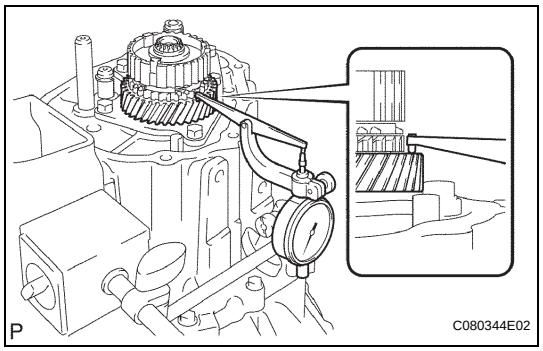
(b) Using SST and a hammer, tap in the No. 3 clutch hub to the input shaft.
SST 09636-20010
NOTICE:
- **Do not install the No. 3 transmission clutch hub with it facing in the wrong direction.**
- **Install the No. 3 transmission clutch hub, checking the positions of the No. 3 synchronizer ring key groove and the No. 3 synchromesh shifting key.**
- **Check that the 5th gear is rotating.**
- **Place a suitable sized wooden block to support the input shaft.**

(c) Select a No. 3 clutch hub shaft snap ring that will allow minimum axial play.
Standard clearance:
0.1 mm (0.004 in.) or less
Standard snap ring thickness

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



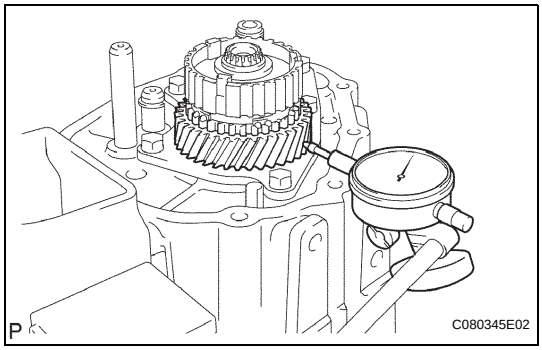
(d) Using a brass bar and hammer, tap the snap ring onto the input shaft.



37. INSPECT 5TH GEAR THRUST CLEARANCE

(a) Using a dial indicator, measure the thrust clearance.
Standard clearance:
0.1 to 0.57 mm (0.0039 to 0.0224 in.)
Maximum clearance:
0.57 mm (0.0224 in.)
If the clearance is greater than the maximum, replace the gear, needle roller bearing or shaft.

MX



38. INSPECT 5TH GEAR RADIAL CLEARANCE

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

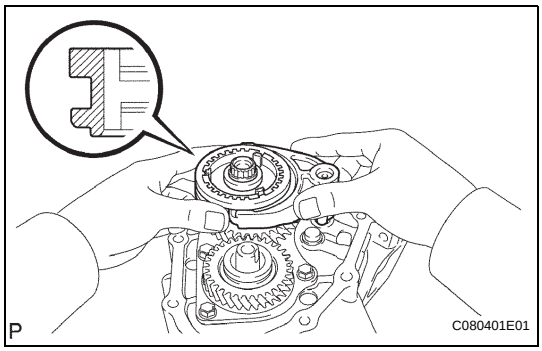
Standard clearance

Item	Specified Condition
KOYO made	0.015 to 0.058 mm (0.0006 to 0.0023 in.)
NSK made	0.015 to 0.056 mm (0.0006 to 0.0022 in.)

Maximum clearance

Item	Specified Condition
KOYO made	0.058 mm (0.0023 in.)
NSK made	0.056 mm (0.0022 in.)

If the clearance is greater than the maximum, replace the gear, needle roller bearing or shaft.

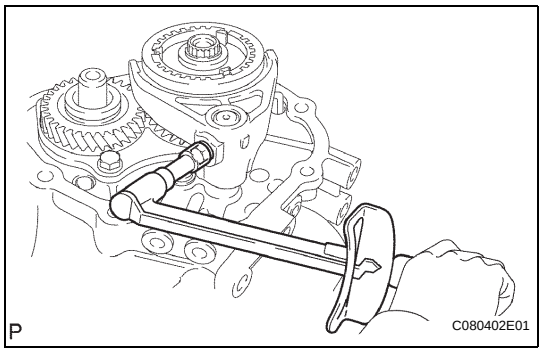


39. INSTALL NO. 3 GEAR SHIFT FORK

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

HINT:

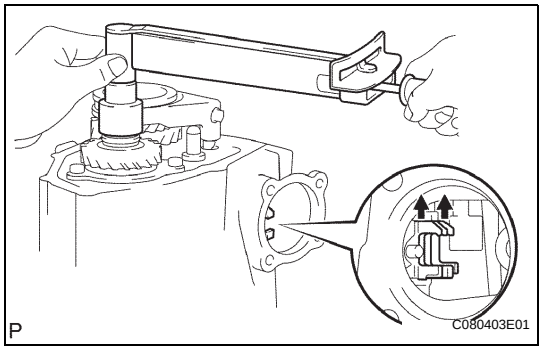
Be sure to set the No. 3 transmission clutch hub in the correct orientation.



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

Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

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



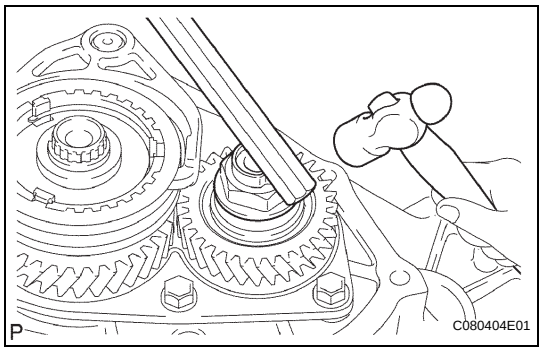
40. INSTALL MANUAL TRANSMISSION OUTPUT SHAFT REAR SET NUT

(a) Engage the 2 gears simultaneously to lock the transmission.

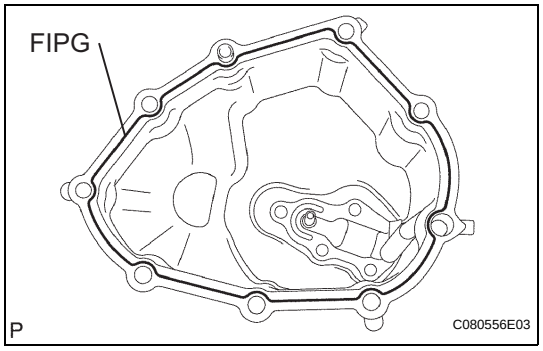
(b) Install a new set nut.

Torque: 118 N*m (1200 kgf*cm, 87 ft.*lbf)

MX

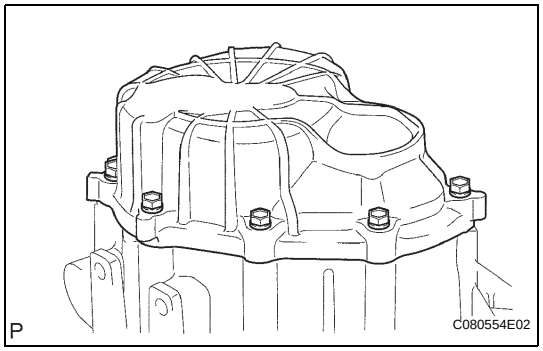


(c) Using a chisel and hammer, stake the set nut.
(d) Disengage the 2 gears.

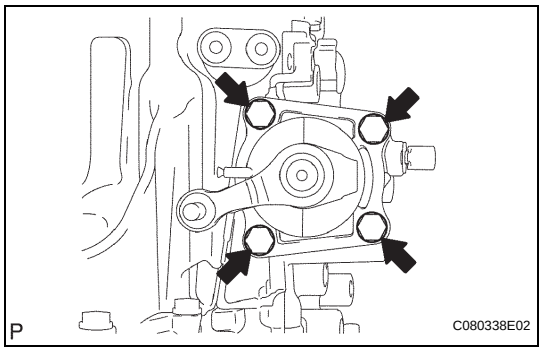


41. INSTALL MANUAL TRANSMISSION CASE COVER SUB-ASSEMBLY

(a) Apply FIPG to the transaxle case cover as shown in the illustration.
FIPG:
Part No. 08826-00090, THREE BOND 1281
NOTICE:
Parts must be assembled within 10 minutes of application. Otherwise, the packing (FIPG) material must be removed and reapplied.



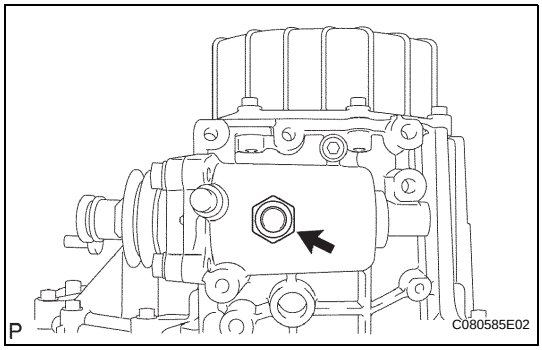
(b) Install the transmission case cover to the transmission case with the 9 bolts.
Torque: 18 N*m (185 kgf*cm, 14 ft.*lbf)



42. INSTALL SHIFT AND SELECT LEVER SHAFT ASSEMBLY

(a) Coat the 4 bolts with sealant and install a new gasket and lever shaft to the transmission case with the 4 bolts.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 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.

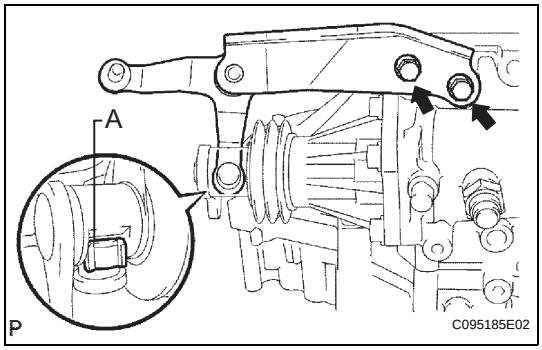
MX



43. INSTALL NO. 1 LOCK BALL ASSEMBLY

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

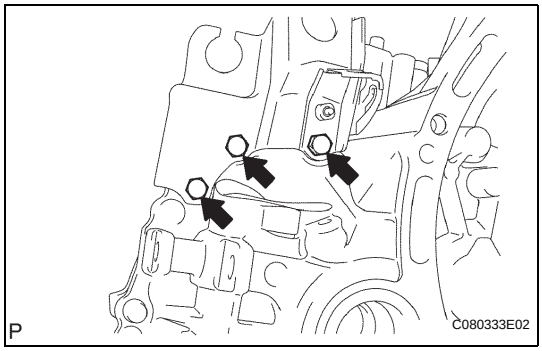
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 29 N*m (300 kgf*cm, 22 ft.*lbf)



44. INSTALL SELECTING BELLCRANK ASSEMBLY

(a) Install the selecting bellcrank with control shift lever bush to the transmission case with the 2 bolts.

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).

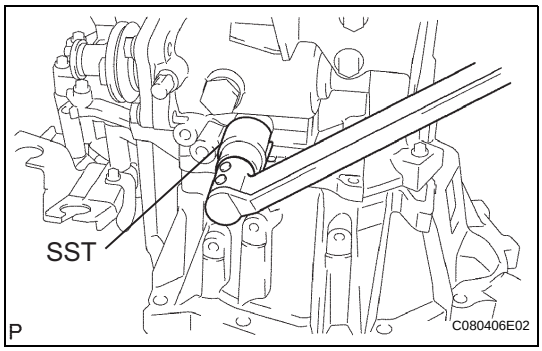


45. INSTALL FLOOR SHIFT CONTROL LEVER HOUSING SUPPORT BRACKET

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

Torque: 18 N*m (188 kgf*cm, 14 ft.*lbf)

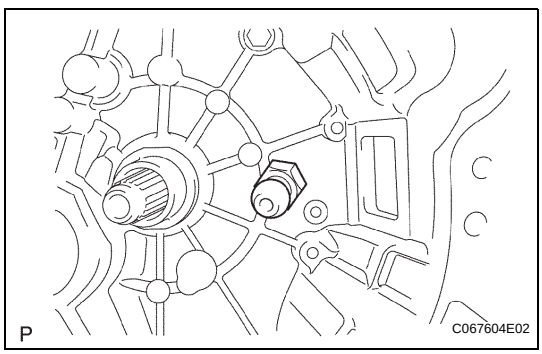
MX



46. INSTALL BACK-UP LIGHT SWITCH ASSEMBLY

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

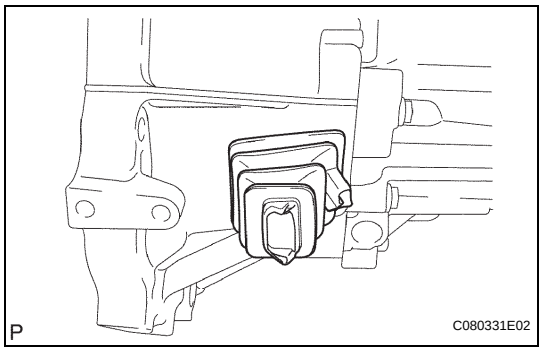
SST 09817-16011
Torque: 40 N*m (410 kgf*cm, 30 ft.*lbf)



47. INSTALL RELEASE FORK SUPPORT

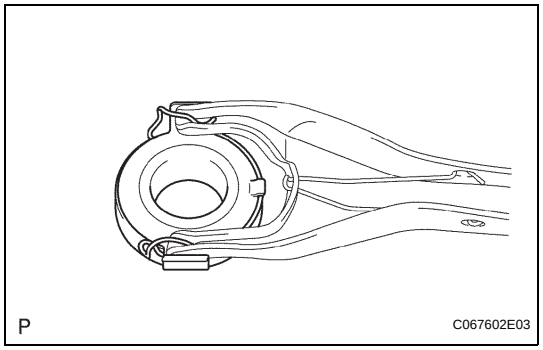
(a) Install the release fork support to the front transaxle case.

Torque: 37 N*m (375 kgf*cm, 25 ft.*lbf)



48. INSTALL CLUTCH RELEASE FORK BOOT

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

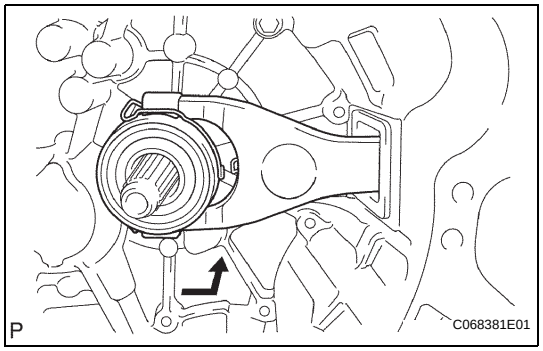


49. INSTALL CLUTCH RELEASE BEARING ASSEMBLY

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

Release hub grease:

Part No. 08887-01806, RELEASE HUB GREASE or equivalent



50. INSTALL CLUTCH RELEASE FORK SUB-ASSEMBLY

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

(b) Apply clutch spline grease to the spline of the input shaft.

Clutch spline grease:

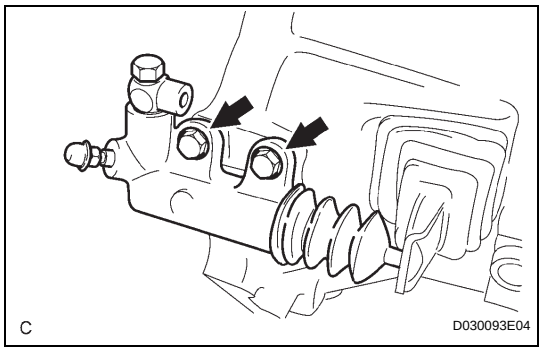
Part No. 08887-01806, CLUTCH SPLINE GREASE or equivalent

51. INSTALL SPEEDOMETER DRIVEN HOLE COVER SUB-ASSEMBLY

(a) Install a new O-ring to the driven hole cover.

(b) Install the driven hole cover to the transaxle case with the bolt.

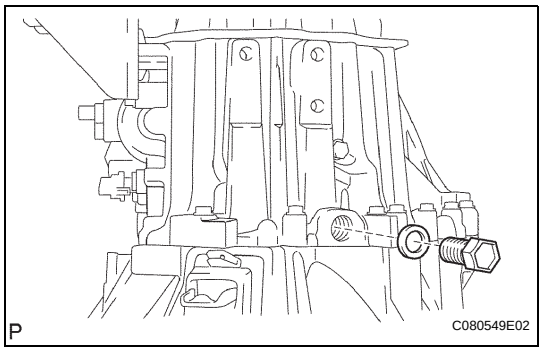
Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)



52. INSTALL CLUTCH RELEASE CYLINDER ASSEMBLY

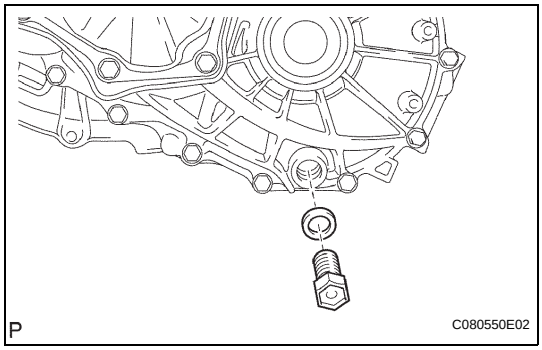
(a) Install the clutch release cylinder to the transmission case with the 2 bolts.

Torque: 12 N*m (120 kgf*cm, 9 ft.*lbf)



53. INSTALL MANUAL TRANSMISSION FILLER PLUG

(a) Install the transmission filler plug to the transmission case with a new gasket.
Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)



54. INSTALL DRAIN PLUG SUB-ASSEMBLY

(a) Install the drain plug to the transmission case with a new gasket.
Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)