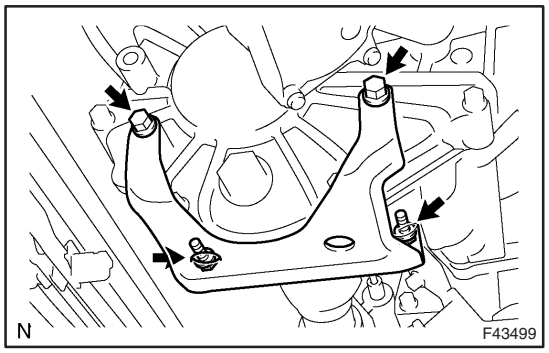
3105K–01

OVERHAUL

HINT:

COMPONENTS: See page 31–5

1. DRAIN TRANSFER OIL



2. REMOVE TRANSFER CASE LOWER PROTECTOR

(a) Remove the 4 bolts and transfer case lower protector.

3. REMOVE MANUAL TRANSMISSION ASSY (MANUAL TRANSMISSION)

(a) 2TR–FE: (See page 41–5)

(b) 1GR–FE: (See page 41–14)

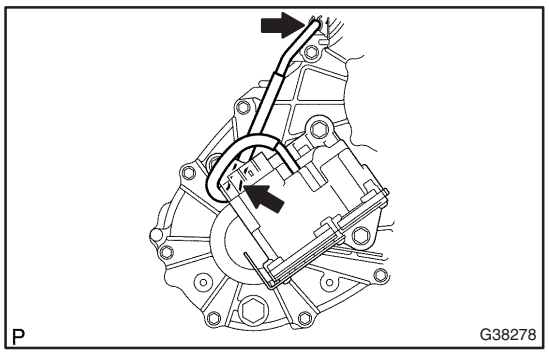
(c) 1KD–FTV: (See page 41–26)

4. REMOVE AUTOMATIC TRANSMISSION ASSY (AUTOMATIC TRANSMISSION)

(a) 2TR–FE: (See page 40–21)

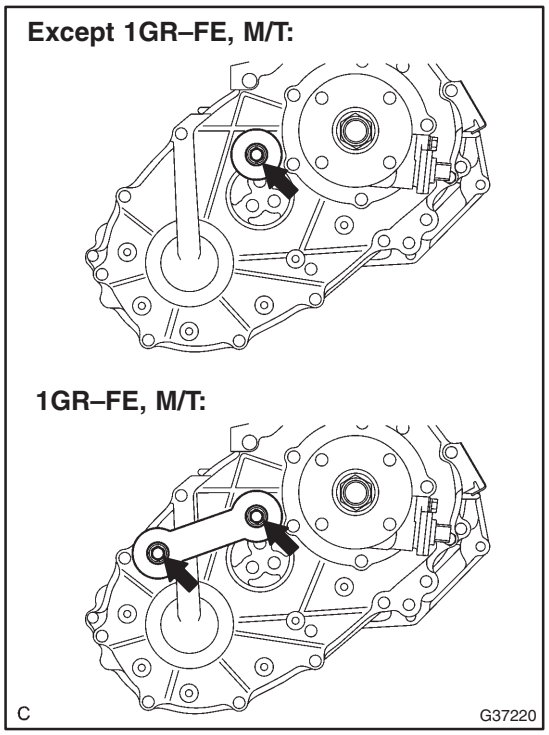
(b) 1GR–FE: (See page 40–53)

(c) 1KD–FTV: (See page 40–38)



5. REMOVE HOSES (W/ ACTUATOR MOTOR)

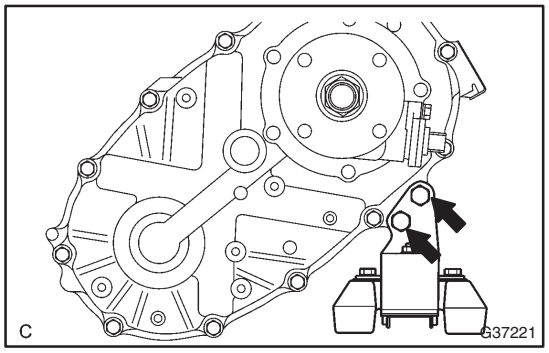
(a) Remove the actuator motor breather hose.



6. REMOVE DYNAMIC DAMPER WEIGHT (W/O ACTUATOR MOTOR)

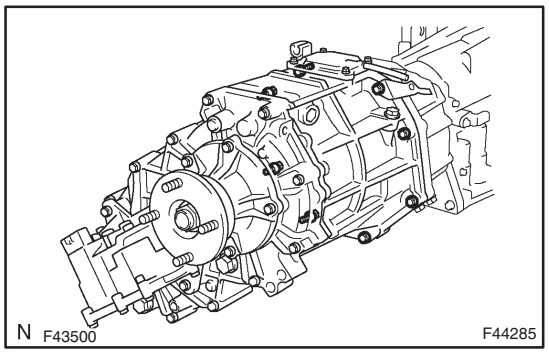
(a) Except 1GR–FE, M/T:
  (1) Remove the bolt and dynamic damper weight.

(b) 1GR–FE, M/T:
  (1) Remove the 2 bolts and dynamic damper weight.



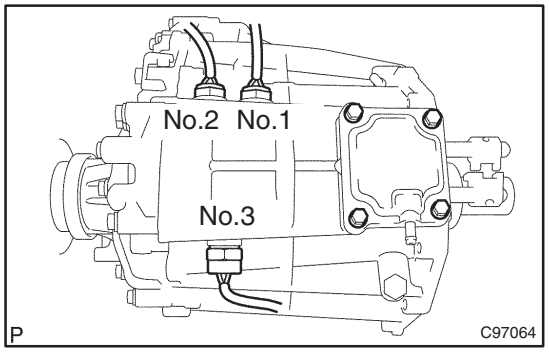
7. REMOVE TRANSFER DYNAMIC DAMPER (W/ TRANSFER DYNAMIC DAMPER)

(a) Remove the 2 bolts and transfer dynamic damper.



8. REMOVE TRANSFER ASSY

(a) Remove the 8 bolts and 2 clamps from the transmission.



9. REMOVE TRANSFER INDICATOR SWITCH NO.1

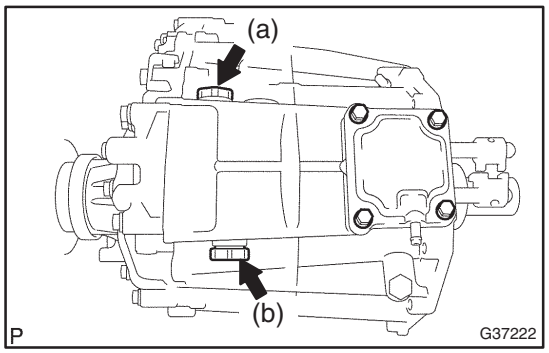
(a) Remove the transfer indicator switch No.1.

10. REMOVE TRANSFER INDICATOR SWITCH NO.2 (AUTOMATIC TRANSMISSION)

(a) Remove the transfer indicator switch No.2.

11. REMOVE TRANSFER INDICATOR SWITCH NO.3 (W/O ACTUATOR MOTOR)

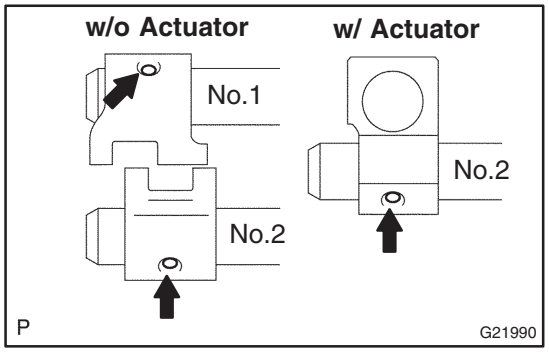
(a) Remove the transfer indicator switch No.3.



12. REMOVE TRANSFER CASE NO.1 PLUG

(a) Manual transmission:
  (1) Remove the transfer case plug and gasket.

(b) w/ Actuator motor:
  (1) Remove the transfer case plug and gasket.

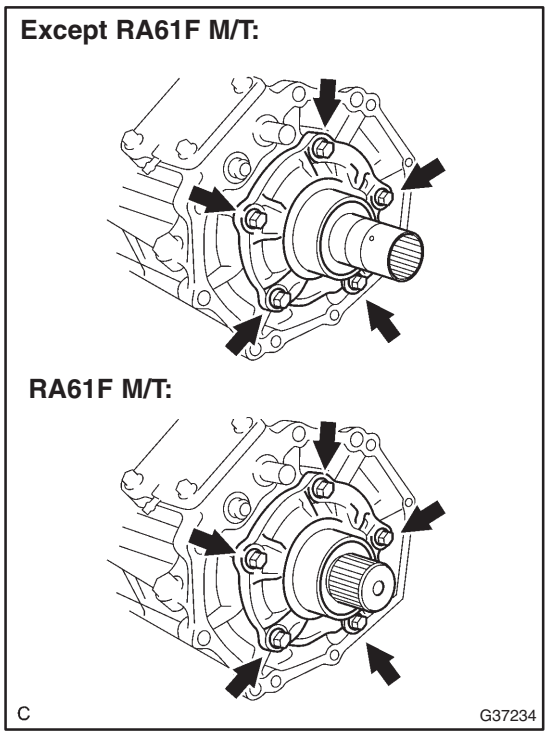


13. REMOVE TRANSFER GEAR SHIFT HEAD NO.1 (W/O ACTUATOR MOTOR)

(a) 2TR–FE A/T, 1KD–FTV:
  (1) Using a pin punch and hammer, remove the slotted pin from the gear shift head No.1.
  (2) Remove the gear shift head No.1 from the shift fork shaft.

14. REMOVE TRANSFER GEAR SHIFT HEAD NO.2

(a) 2TR–FE A/T, 1KD–FTV:
  (1) Using a pin punch and hammer, remove the slotted pin from the gear shift head No.2.
  (2) Remove the gear shift head No.2 from the shift fork shaft.

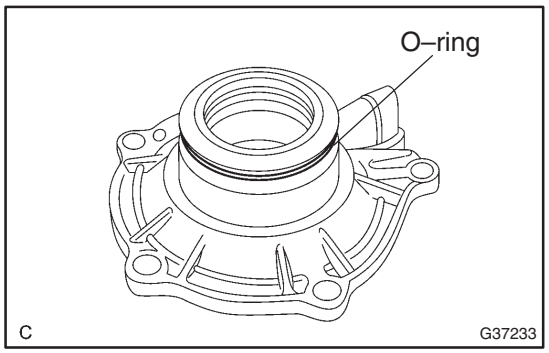


15. REMOVE TRANSFER RH BEARING RETAINER SUB–ASSY

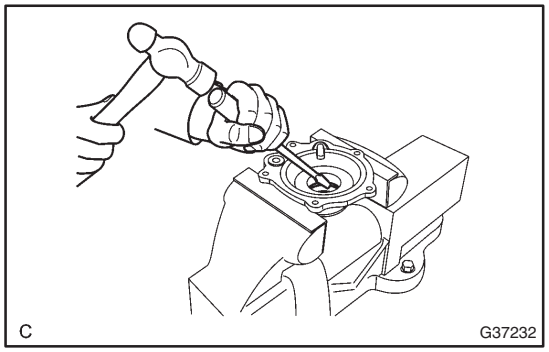
(a) Remove the 5 bolts and RH bearing retainer sub–assy.

HINT:

If necessary, tap the extension housing with a plastic hammer to remove it.



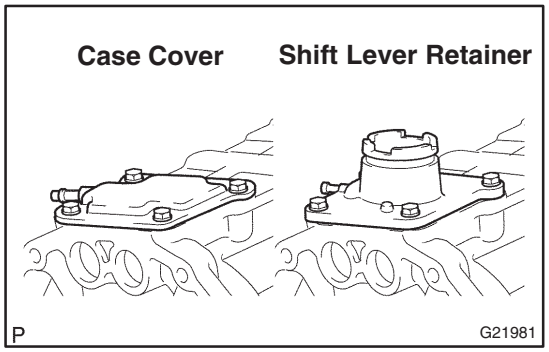
(b) RA61F M/T:
(1) Remove the O–ring from the bearing retainer sub–assy.



16. REMOVE TRANSFER COVER TYPE T OIL SEAL

(a) Except RA61F M/T:
(1) Using a screwdriver and hammer, remove the oil seal from the bearing retainer sub–assy.

(b) RA61F M/T:
(1) Using a screwdriver and hammer, remove the 2 oil seals from the bearing retainer sub–assy.



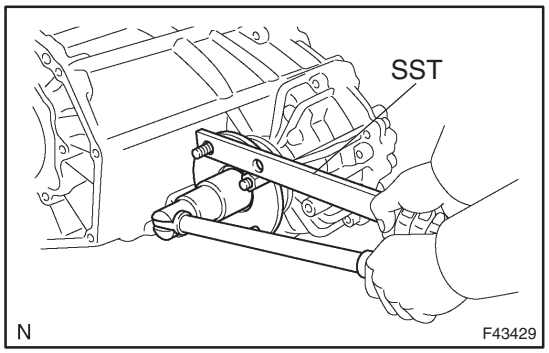
17. REMOVE TRANSFER CASE COVER SUB–ASSY

(a) 2TR–FE A/T, 1KD–FTV:
(1) Remove the 4 bolts and case cover sub–assy.

18. REMOVE TRANSFER CONTROL SHIFT LEVER RETAINER SUB–ASSY

(a) 2TR–FE M/T, 1GR–FE:
(1) Remove the 4 bolts and control shift lever retainer.

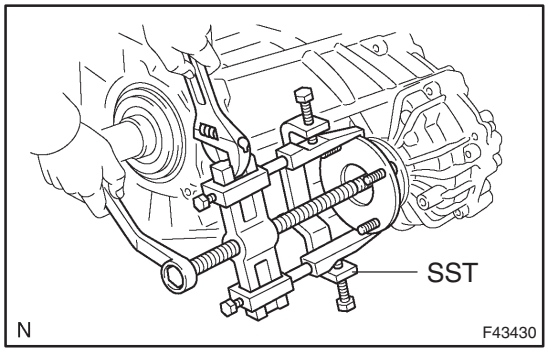
19. REMOVE BREATHER OIL DEFLECTOR



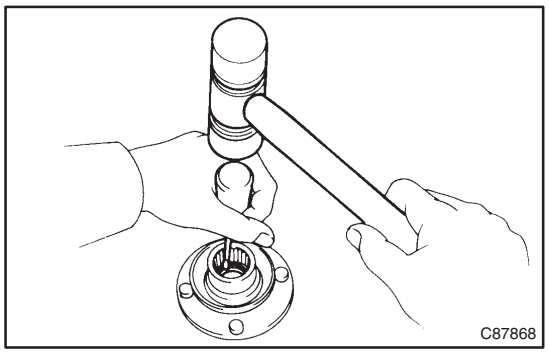
20. REMOVE OUTPUT SHAFT COMPANION FLANGE SUB–ASSY

(a) Using a chisel and hammer, loosen the staked part of the output shaft companion flange lock nut. (front)

(b) Using SST to hold the output shaft companion flange, remove the output shaft companion flange lock nut. (front)
SST 09330–00021



(c) Using SST, remove the output shaft companion flange sub–assy. (front)
SST 09950–40011 (09951–04020, 09952–04010, 09953–04030, 09954–04010, 09955–04051, 09957–04010, 09958–04011)



21. REMOVE TRANSFER OUTPUT SHAFT COMPANION FLANGE OIL SEAL

(a) Using a screwdriver and hammer, remove the oil seal from the output shaft companion flange sub–assy. (front)

NOTICE:

Be careful not to damage the installation surface of the oil seal.

22. REMOVE OUTPUT SHAFT COMPANION FLANGE SUB–ASSY

(a) Remove the rear output shaft companion flange sub–assy using the same way as for the front output shaft companion flange sub–assy. (rear)

SST 09330–00021, 09950–40011 (09951–04020, 09952–04010, 09953–04030, 09954–04010, 09955–04051, 09957–04010, 09958–04011)

23. REMOVE TRANSFER OUTPUT SHAFT COMPANION FLANGE OIL SEAL

(a) Using a screwdriver and hammer, remove the oil seal from the output shaft companion flange sub–assy. (rear)

NOTICE:

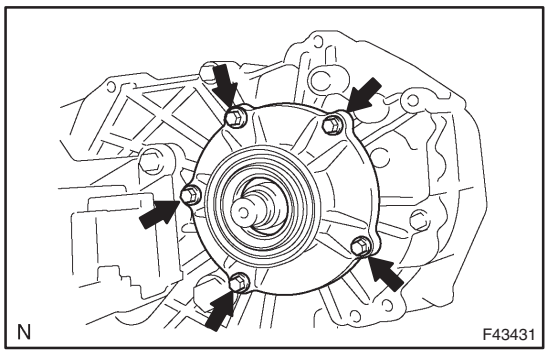
Be careful not to damage the installation surface of the oil seal.

24. REMOVE SPEEDOMETER DRIVEN GEAR ASSY W/SENSOR (W/ SPEEDOMETER SENSOR)

(a) Remove the bolt and speedometer driven gear w/ sensor.

25. REMOVE SPEEDOMETER DRIVEN HOLE COVER SUB–ASSY (W/ SPEEDOMETER DRIVEN HOLE COVER)

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



26. REMOVE EXTENSION HOUSING ASSY

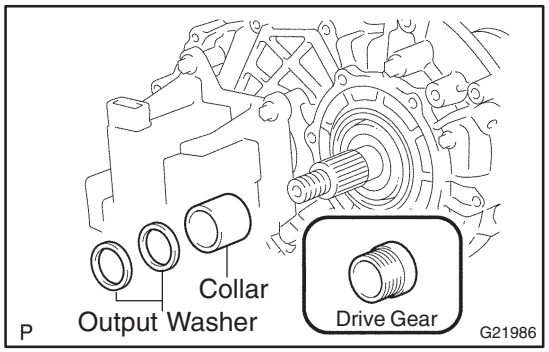
(a) Remove the 5 bolts and extension housing sub–assy .

HINT:

If necessary, tap the extension housing sub–assy with a plastic hammer to remove it.

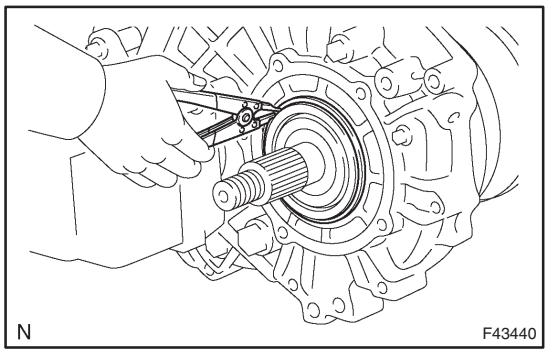
27. REMOVE TRANSFER EXTENSION HOUSING TYPE T OIL SEAL

(a) Using a screwdriver and hammer, remove the extension housing type T oil seal.



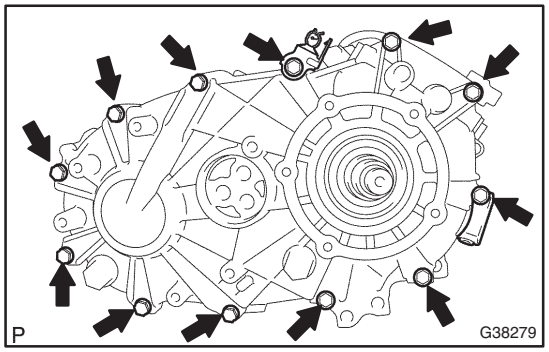
28. REMOVE TRANSFER OUTPUT WASHER

(a) Remove the 2 output washers and speed sensor drive gear or collar.



29. REMOVE TRANSFER CASE REAR

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

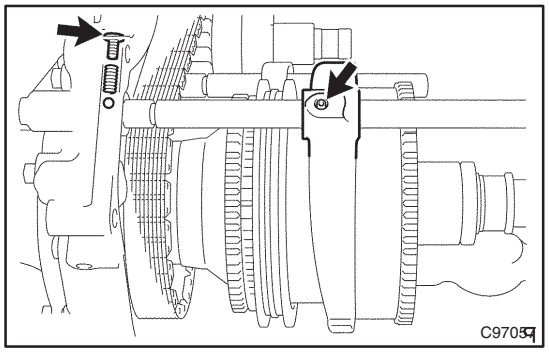


(b) Remove the 12 bolts and clamp.

(c) Remove the transfer case rear.

HINT:

If necessary, tap the transfer case rear with a plastic hammer to remove it.



30. REMOVE TRANSFER GEAR SHIFT FORK NO.2 W/TRANSFER HIGH AND LOW CLUTCH SLEEVE (W/ ACTUATOR MOTOR)

(a) Using a hexagon wrench, remove the spring plug.

(b) Using a magnetic finger, remove the compression spring and detent ball from the transfer rear case.

(c) Using a pin punch and hammer, drive out the slotted spring pin.

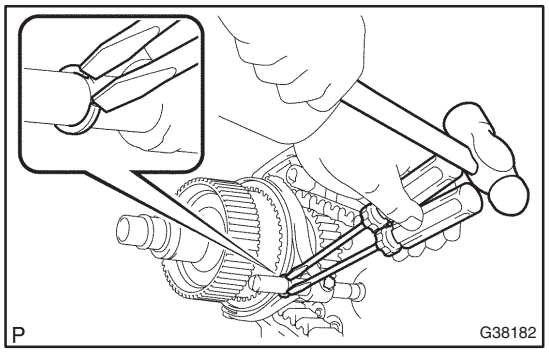
(d) Remove the gear shift fork No.2 and high and low shift fork shaft.

(e) Automatic transmission:

(1) Remove the high and low clutch sleeve.

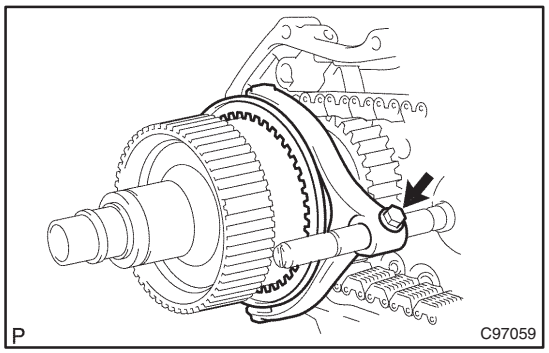
(f) Manual transmission:

(1) Remove the high and low clutch sleeve, 3 shifting keys and 2 spring No.1.

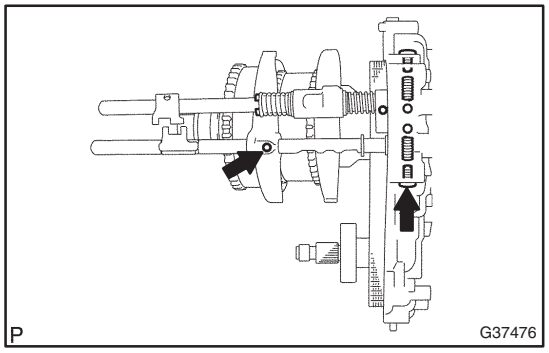


31. REMOVE CTR DIFFERENTIAL LOCK FORK SUB–ASSY W/FRONT DRIVE CLUTCH SLEEVE (W/ ACTUATOR MOTOR)

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



(b) Remove the bolt, CTR differential lock fork sub–assy and front drive clutch sleeve.



32. REMOVE TRANSFER GEAR SHIFT FORK NO.2 W/TRANSFER HIGH AND LOW CLUTCH SLEEVE (W/O ACTUATOR MOTOR)

(a) Using a pin punch and hammer, drive out the slotted spring pin.

(b) Using a hexagon wrench, remove the spring plug (No.1).

(c) Using a magnetic finger, remove the compression spring, shift detent ball and or roller shift inter–lock pin from the transfer rear case.

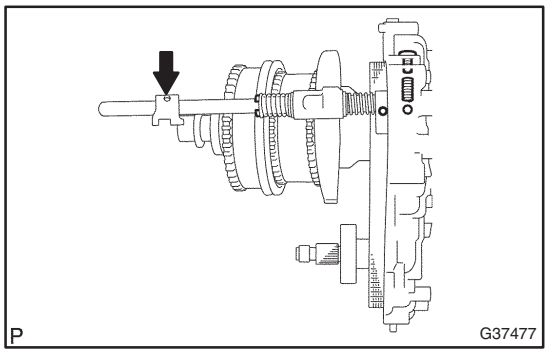
(d) Remove the gear shift fork No.2 and high and low shift fork shaft.

(e) Automatic transmission:

(1) Remove the high and low clutch sleeve.

(f) Manual transmission:

(1) Remove the high and low clutch sleeve, 3 shifting keys and 3 springs No.1.

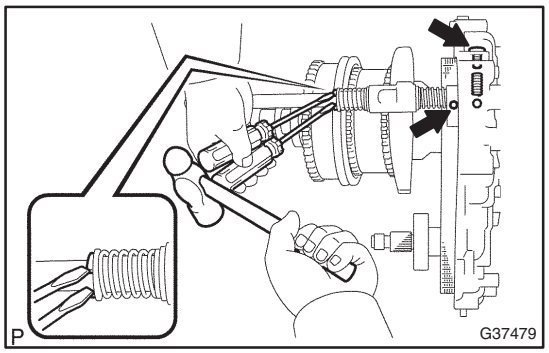


33. REMOVE TRANSFER GEAR SHIFT HEAD NO.1

(a) 2TR–FE M/T, 1GR–FE:

(1) Using a pin punch and hammer, remove the slotted spring pin from the gear shift head No.1.

(2) Remove the gear shift head No.1 from the shift fork shaft.



34. REMOVE CTR DIFFERENTIAL LOCK FORK SUB–ASSY W/FRONT DRIVE CLUTCH SLEEVE (W/O ACTUATOR MOTOR)

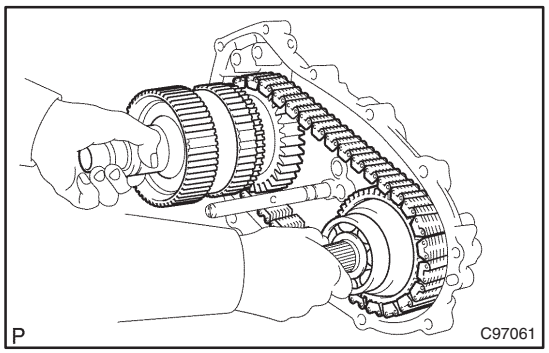
(a) Using a pin punch and hammer, drive out the slotted spring pin.

(b) Using 2 screwdrives and a hammer, tap out the shift fork shaft snap ring.

(c) Using a hexagon wrench, remove the spring plug (No.2).

(d) Using a magnetic finger, remove the compression spring and detent ball from the transfer rear case.

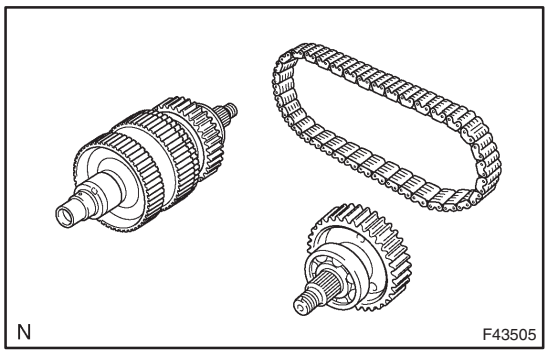
(e) Remove the front drive shift shaft and front drive clutch sleeve.



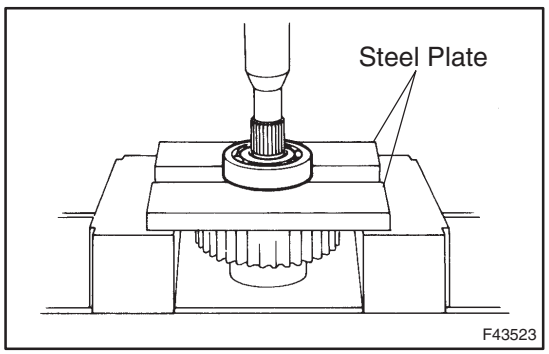
35. REMOVE REAR OUTPUT SHAFT SUB–ASSY, FRONT DRIVE CHAIN AND DRIVEN SPROCKET SUB–ASSY

(a) Mount the transfer rear case in a soft jaw vise.

(b) Using a plastic hammer, carefully tap the transfer rear case, and remove the rear output shaft sub–assy together with the front drive chain and driven sprocket sub–assy.

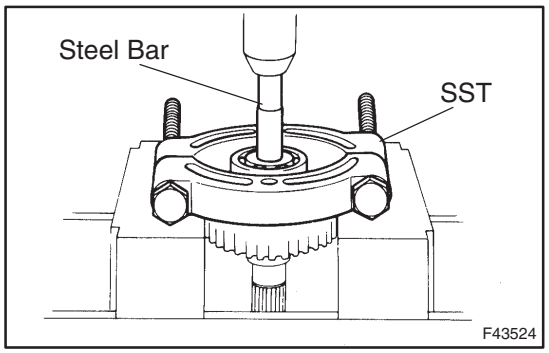


(c) Remove the rear output shaft sub–assy, front drive chain and driven sprocket sub–assy.



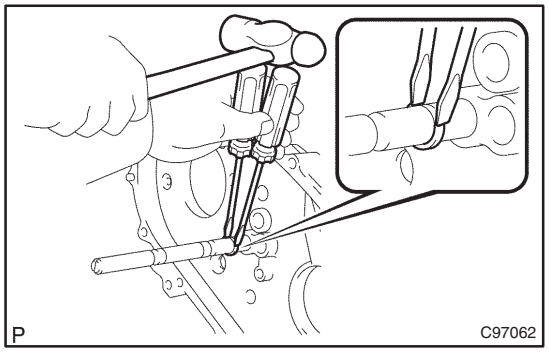
36. REMOVE TRANSFER DRIVEN SPROCKET BEARING

(a) Using a press, remove the driven sprocket bearing from the driven sprocket.



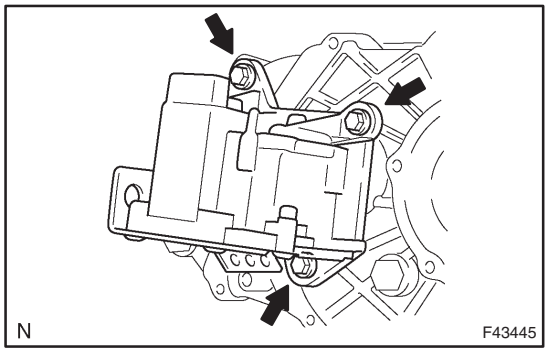
37. REMOVE TRANSFER INPUT GEAR RADIAL BALL BEARING

(a) Using SST, a press and steel bar, remove the transfer input gear radial ball bearing from the driven sprocket.
SST 09555–55010



38. REMOVE TRANSFER SHIFT ACTUATOR ASSY (W/ ACTUATOR MOTOR)

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



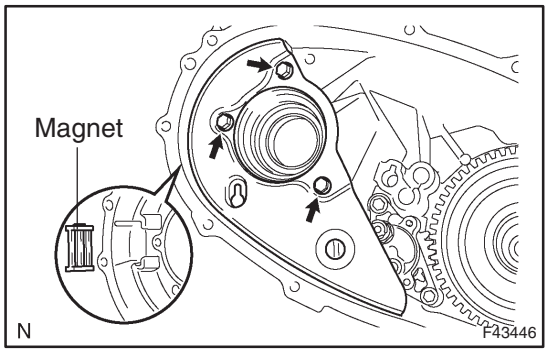
(b) Remove the 3 bolts and transfer shift actuator assy.

39. REMOVE TRANSFER CASE NO.1 PLUG

(a) Remove the transfer case plug No.1 (filler plug) and gasket.

40. REMOVE TRANSFER CASE NO.1 PLUG

(a) Remove the transfer case plug No.1 (drain plug) and gasket.

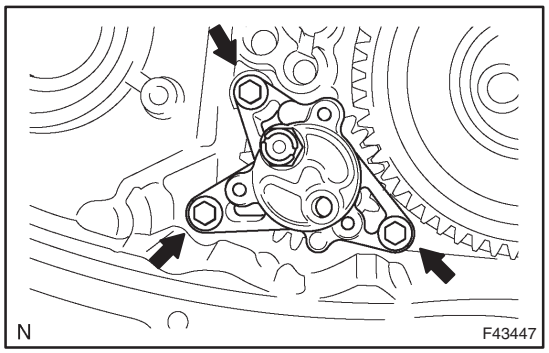


41. REMOVE TRANSFER OIL SEPARATOR SUB–ASSY

(a) Remove the 3 bolts and oil separator sub–assy.

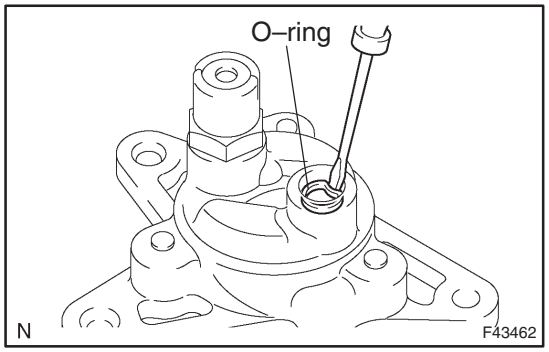
42. REMOVE TRANSFER CASE MAGNET

(a) Remove the case magnet from the transfer front case.



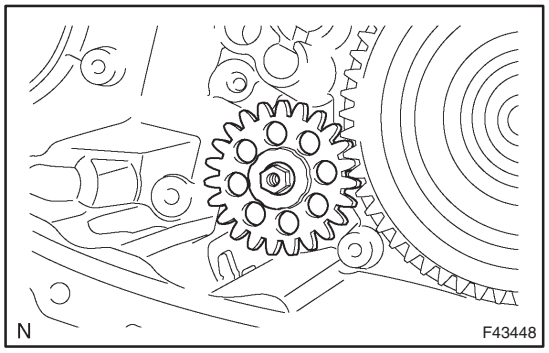
43. REMOVE TRANSFER OIL PUMP BODY SUB–ASSY

(a) Remove the 3 bolts and oil pump body sub–assy.



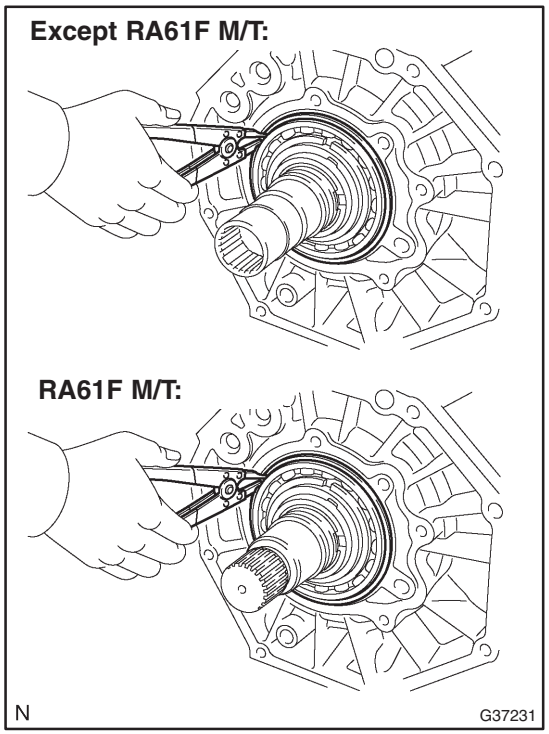
44. REMOVE TRANSFER OIL PUMP BODY O–RING

(a) Using a screwdriver, remove the oil pump body O–ring.



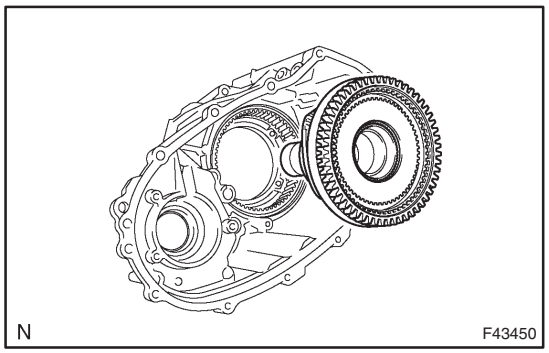
45. REMOVE TRANSFER OIL PUMP GEAR

(a) Remove the oil pump gear from the transfer front case.

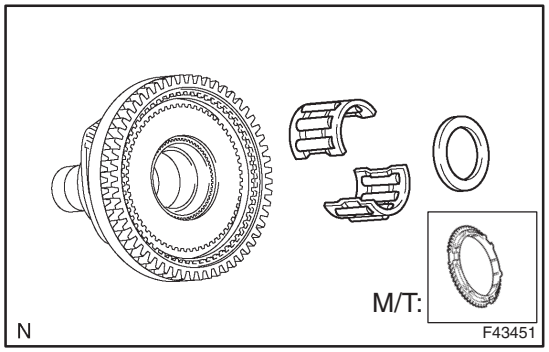


46. REMOVE LOW PLANETARY GEAR ASSY W/INPUT SHAFT SUB–ASSY

(a) Using a snap ring expander, remove the low planetary gear bearing shaft snap ring.



(b) Remove the low planetary gear assy w/ input shaft sub–assy from the transfer front case.



47. REMOVE TRANSFER FRONT DRIVE CLUTCH SYNCHRONIZER RING (MANUAL TRANSMISSION)

(a) Remove the front drive clutch synchronizer ring from the input shaft sub–assy.

48. REMOVE TRANSFER OUTPUT SHAFT SPACER

(a) Remove the output shaft spacer from the input shaft sub–assy.

49. REMOVE TRANSFER OUTPUT SHAFT FRONT NEEDLE ROLLER BEARING

(a) Remove the output shaft front needle roller bearing from the input shaft sub–assy.

50. REMOVE TRANSFER CASE OIL SEAL

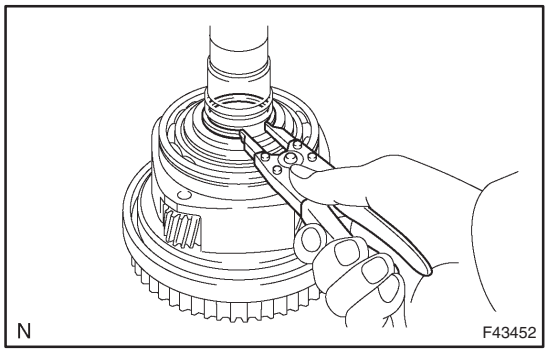
(a) Using a screwdriver and hammer, remove the transfer case oil seal (No.1).

(b) w/ Actuator motor:

(1) Using a screwdriver and hammer, remove the transfer case oil seal (No.2).

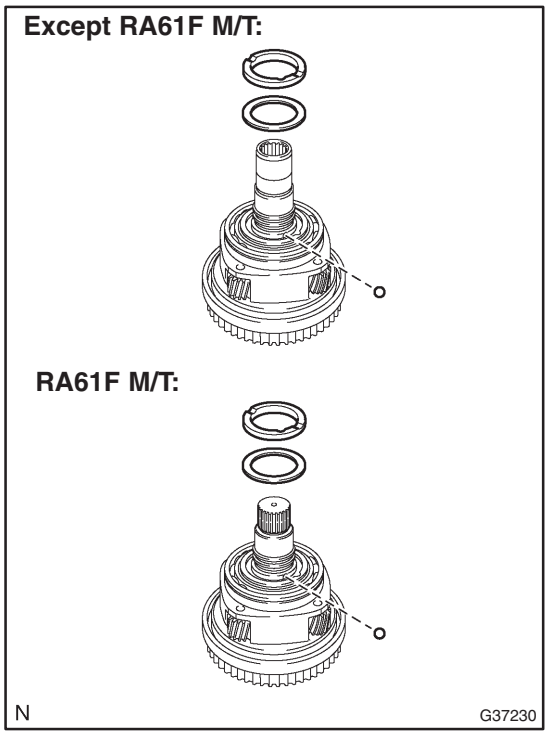
(c) w/o Actuator motor:

(1) Using a screwdriver and hammer, remove the 2 transfer case oil seals (No.2).



51. REMOVE TRANSFER INPUT GEAR STOPPER SHAFT SNAP RING

(a) Using a snap ring expander, remove the input gear stopper shaft snap ring.

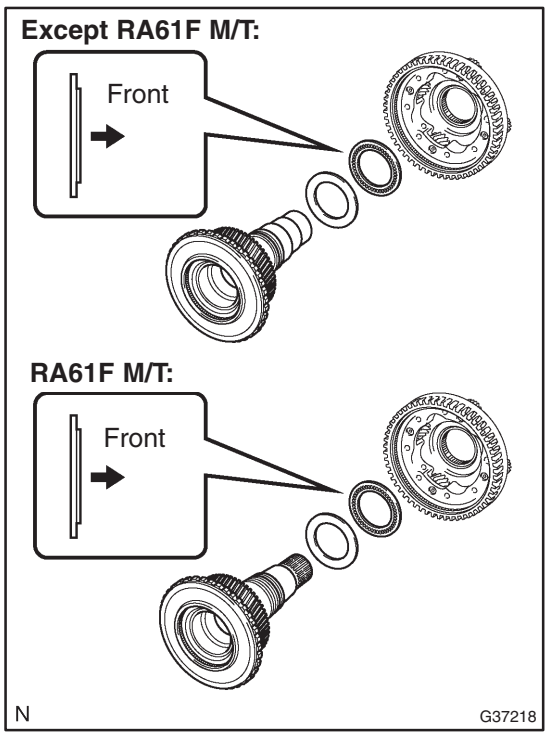


52. REMOVE TRANSFER INPUT GEAR STOPPER

(a) Remove the input gear stopper and planetary carr washer from the input shaft sub–assy.

53. REMOVE TRANSFER INPUT GEAR STOPPER BALL

(a) Using a magnetic finger, remove the input gear stopper ball from the input shaft sub–assy.



54. REMOVE TRANSFER INPUT SHAFT

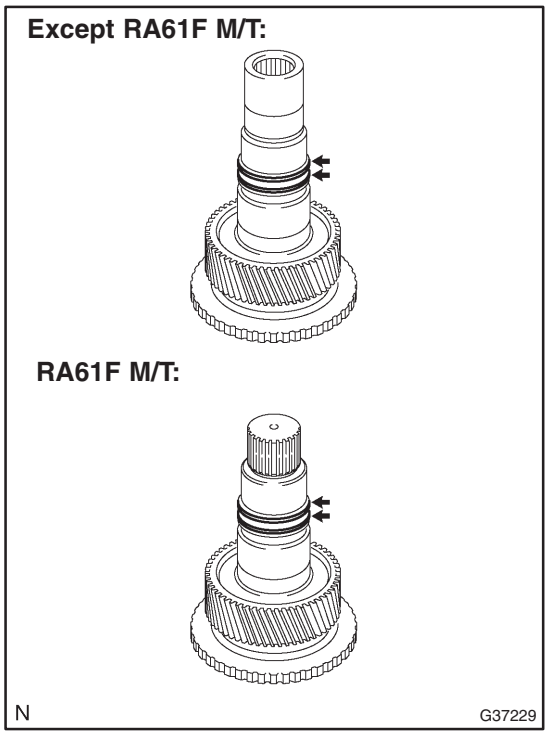
(a) Remove the input shaft from the low planetary gear sub–assy.

55. REMOVE TRANSFER THRUST BEARING RACE NO.1

(a) Remove the thrust bearing race No.1.

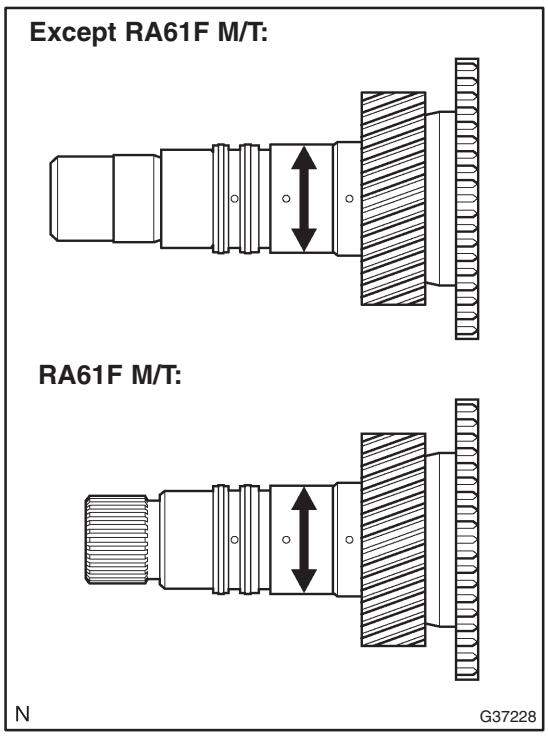
56. REMOVE TRANSFER LOW PLANETARY GEAR BEARING

(a) Remove the low planetary gear bearing (rear).



57. REMOVE TRANSFER INPUT SHAFT SEAL RING NO.1

(a) Remove the 2 input shaft seal ring No.1 from the input shaft.

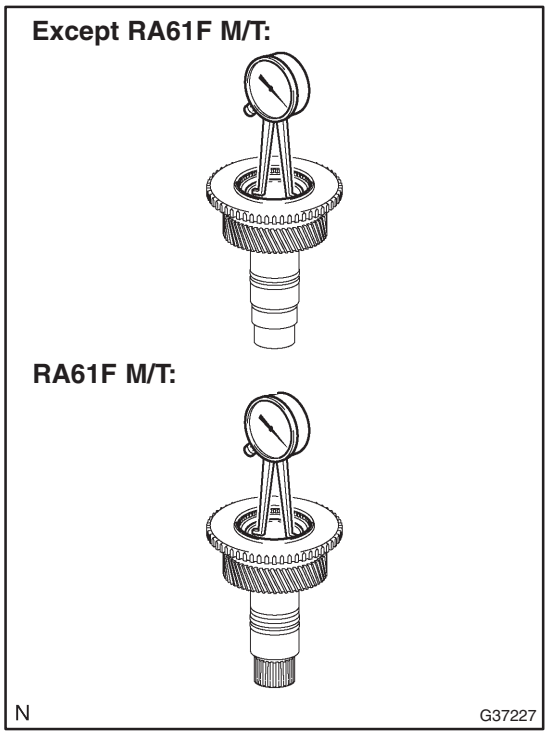


58. INSPECT TRANSFER INPUT SHAFT

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

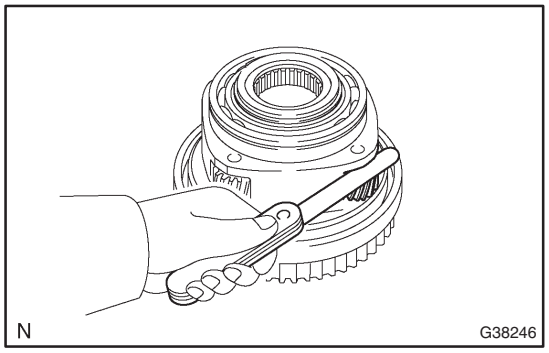
Minimum diameter: 47.59 mm (1.8736 in.)

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



(b) Using a dial indicator, measure the inside diameter of the input shaft bushing.
Maximum diameter: 48.14 mm (1.8953 in.)

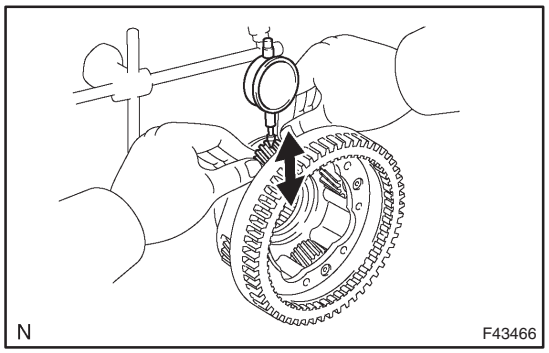
If the inside diameter exceeds the maximum, replace the input shaft.



59. INSPECT PLANETARY PINION GEAR THRUST CLEARANCE

(a) Using a feeler gauge, measure the thrust clearance of the planetary pinion gear.
Standard clearance:
0.11 to 0.84 mm (0.0043 to 0.0331 in.)
Maximum clearance:
0.84 mm (0.0331 in.)

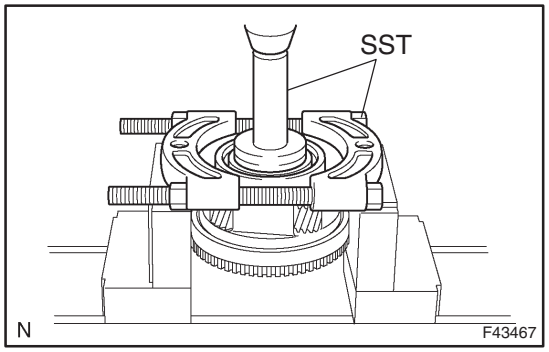
If the clearance exceeds the maximum, replace the planetary gear assy.



60. INSPECT PLANETARY PINION GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the radial clearance of the planetary pinion gear.
Standard clearance:
0.009 to 0.038 mm (0.0004 to 0.0015 in.)
Maximum clearance:
0.038 mm (0.0015 in.)

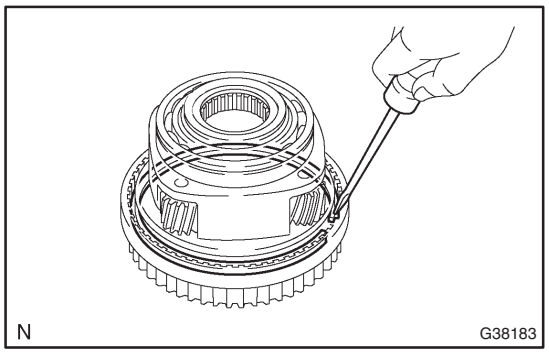
If the clearance exceeds the maximum, replace the planetary gear assy.



61. REMOVE TRANSFER INPUT SHAFT BEARING

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

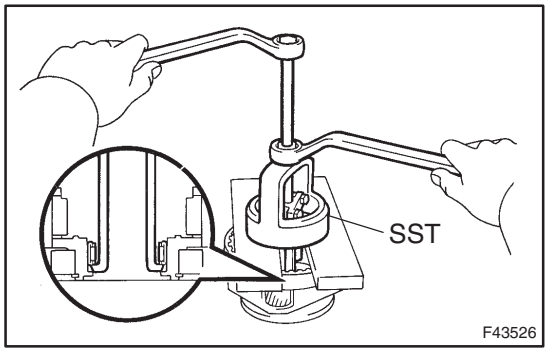
(b) Using SST and a press, remove the input shaft bearing.
SST 09554–30011, 09555–55010



62. REMOVE TRANSFER LOW PLANETARY GEAR SPLINE PIECE

(a) Using a screwdriver, remove the planetary ring gear hole snap ring.

(b) Remove the low planetary gear spline piece.

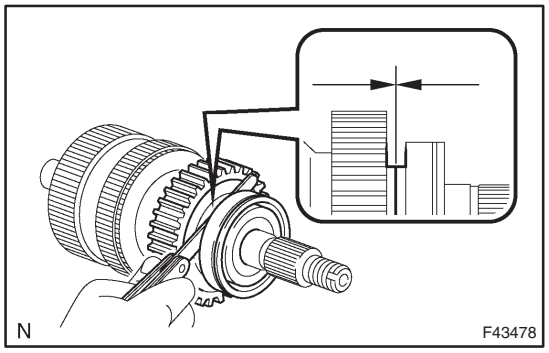


63. REMOVE TRANSFER LOW PLANETARY GEAR BEARING

(a) Using SST, remove the low planetary gear bearing (front).
SST 09612–65014 (09612–01030, 09612–01050)

NOTICE:

Hang SST securely to the clearance between the bearing and low planetary gear.

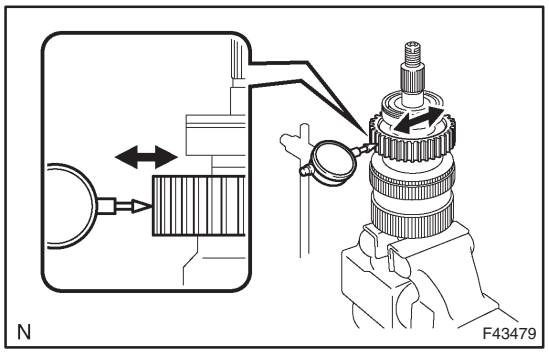


64. INSPECT DRIVE SPROCKET THRUST CLEARANCE

(a) Using a feeler gauge, measure the thrust clearance of the drive sprocket.

Standard clearance:
0.15 to 0.24 mm (0.0059 to 0.0094 in.)
Maximum clearance:
0.24 mm (0.0094 in.)

If the clearance exceeds the maximum, replace the drive sprocket.



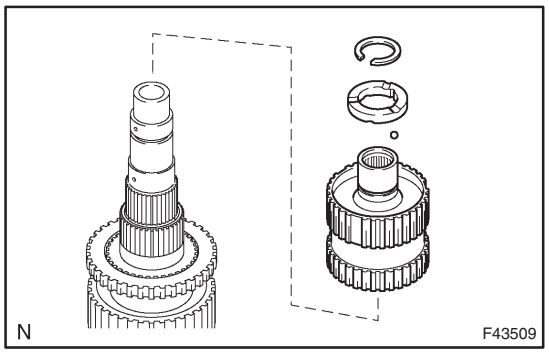
65. INSPECT DRIVE SPROCKET RADIAL CLEARANCE

(a) Mount the rear output shaft sub–assy in a soft jaw vise.

(b) Using a dial indicator, measure the radial clearance of the drive sprocket.

Standard clearance:
0.01 to 0.06 mm (0.0004 to 0.0024 in.)
Maximum clearance:
0.06 mm (0.0024 in.)

If the clearance exceeds the maximum, replace the drive sprocket, output shaft rear or needle roller bearing.



66. REMOVE TRANSFER LOW PLANETARY RING GEAR HOLE SNAP RING

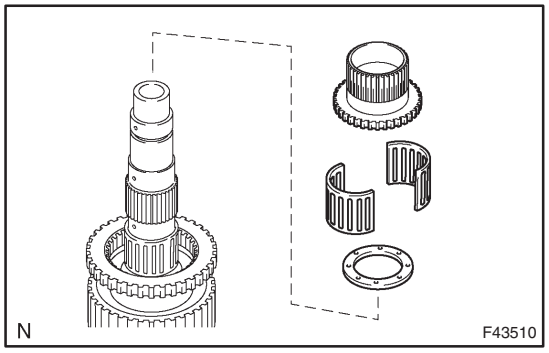
(a) Using a snap ring expander, remove the low planetary ring gear hole snap ring.

67. REMOVE TRANSFER OUTPUT SHAFT SPACER NO.2

(a) Remove the output shaft spacer No.2 and output shaft spacer ball from the center differential case.

68. REMOVE CENTER DIFFERENTIAL CASE

(a) Remove the center differential case from the rear output shaft.



69. REMOVE TRANSFER CLUTCH HUB

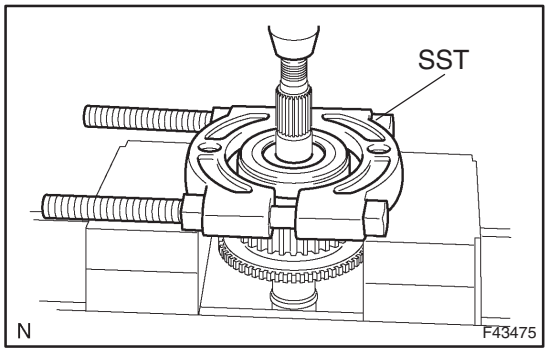
(a) Remove the transfer clutch hub from the rear output shaft.

70. REMOVE TRANSFER OUTPUT SHAFT FRONT NEEDLE ROLLER BEARING

(a) Remove the output shaft front needle roller bearing from the rear output shaft.

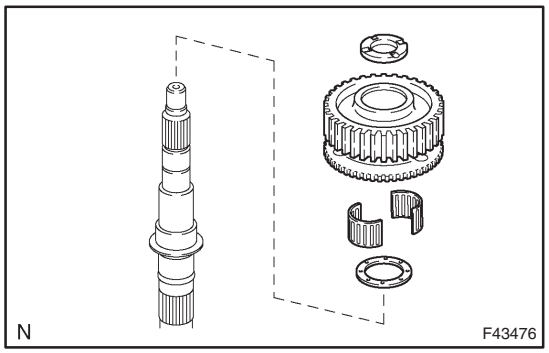
71. REMOVE TRANSFER OUTPUT SHAFT PLATE WASHER

(a) Remove the output shaft plate washer from the rear output shaft.



72. REMOVE TRANSFER OUTPUT SHAFT REAR RADIAL BALL BEARING

(a) Using SST and a press, remove the output shaft rear radial ball bearing.
SST 09555–55010



73. REMOVE TRANSFER OUTPUT SHAFT SPACER NO.1

(a) Remove the output shaft spacer No.1 from the rear output shaft.

74. REMOVE TRANSFER DRIVE SPROCKET SUB–ASSY

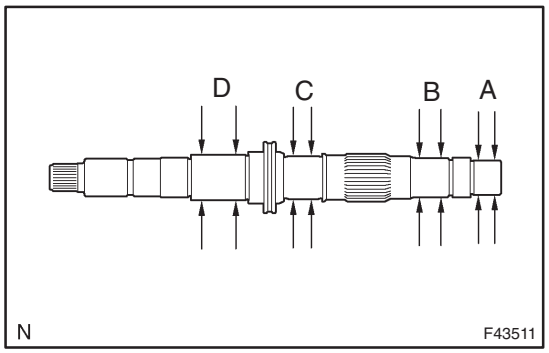
(a) Remove the drive sprocket sub–assy from the rear output shaft.

75. REMOVE TRANSFER DRIVE SPROCKET BEARING

(a) Remove the drive sprocket bearing from the rear output shaft.

76. REMOVE TRANSFER OUTPUT SHAFT PLATE WASHER

(a) Remove the output shaft plate washer from the rear output shaft.

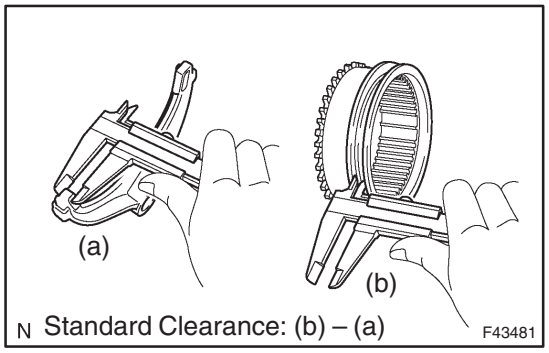


77. INSPECT TRANSFER OUTPUT SHAFT REAR

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

Standard diameter:
Part A: 27.98 to 27.99 mm (1.1016 to 1.1020 in.)
Part B: 31.98 to 32.00 mm (1.2591 to 1.2598 in.)
Part C: 34.98 to 35.00 mm (1.3772 to 1.3780 in.)
Part D: 36.98 to 37.00 mm (1.4559 to 1.4567 in.)
Minimum Diameter:
Part A: 27.98 mm (1.1016 in.)
Part B: 31.98 mm (1.2591 in.)
Part C: 34.98 mm (1.3772 in.)
Part D: 36.98 mm (1.4559 in.)

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



78. INSPECT HIGH AND LOW CLUTCH SLEEVE AND GEAR SHIFT FORK NO.2 CLEARANCE

(a) Using vernier calipers, measure the thickness of the gear shift fork No.2 claw.

Thickness: 10 mm (0.3937 in.)

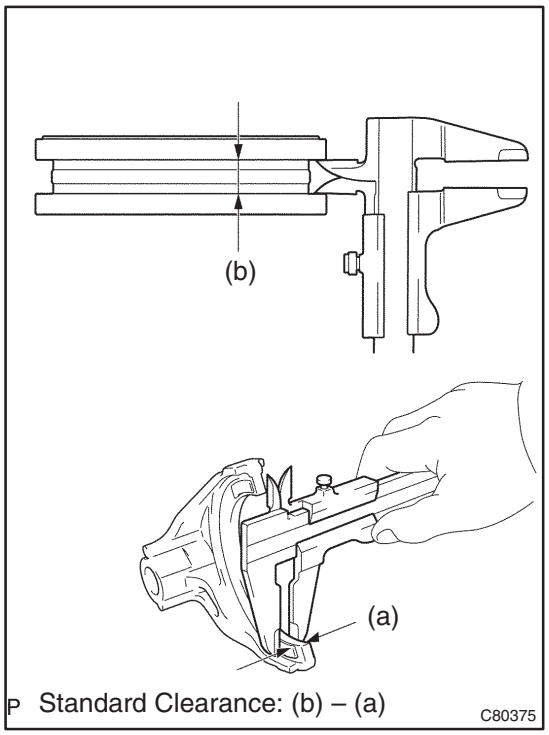
(b) Using vernier calipers, measure the groove of the high and low clutch sleeve.

Distance: 10.5 mm (0.4134 in.)

(c) Calculate a clearance between the high and low clutch sleeve and gear shift fork No.2 clearance.

Standard clearance:
0.26 to 0.84 mm (0.0102 to 0.0331 in)
Maximum clearance:
0.84 mm (0.0331 in.)

If the clearance exceeds the maximum, replace the high and low clutch sleeve or gear shift fork No.2.



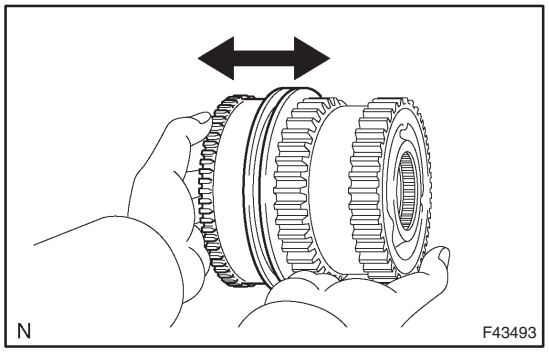
79. INSPECT FRONT DRIVE CLUTCH SLEEVE AND CTR DIFFERENTIAL LOCK FORK SUB–ASSY CLEARANCE

(a) Using vernier calipers, measure the thickness of the CTR differential lock fork claw.
Thickness: 10 mm (0.397 in.)

(b) Using vernier calipers, measure the groove of the front drive clutch sleeve.
Distance: 10.5 mm (0.4134 in.)

(c) Calculate a clearance between the front drive clutch sleeve and CTR differential lock fork.
Standard clearance:
0.26 to 0.84 mm (0.0102 to 0.0331 in)
Maximum clearance:
0.84 mm (0.0331 in.)

If the clearance exceeds the maximum, replace the front drive clutch sleeve or CTR differential lock fork.

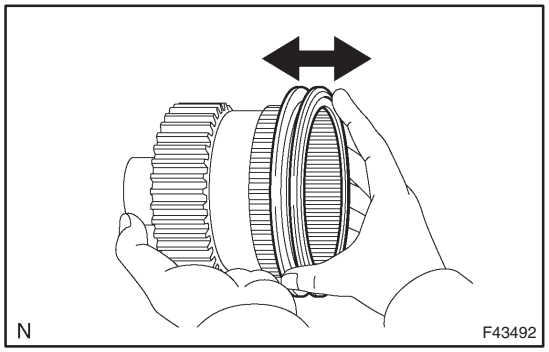


80. INSPECT CENTER DIFFERENTIAL CASE AND HIGH AND LOW CLUTCH SLEEVE

(a) Check that the tip of the spline gear of the high and low clutch sleeve is not worn.

(b) Install the high and low clutch sleeve to the center differential case and check that the high and low clutch sleeve moves smoothly.

HINT:
Replace the center differential case and high and low clutch sleeve if necessary.

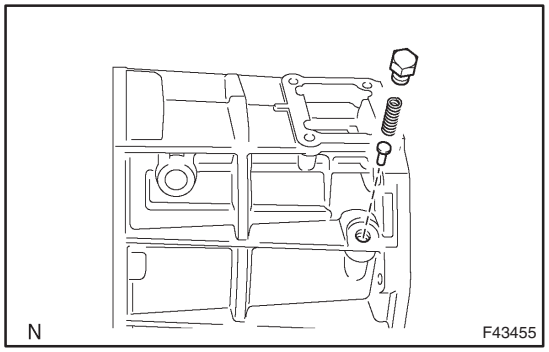


81. INSPECT CENTER DIFFERENTIAL CASE AND FRONT DRIVE CLUTCH SLEEVE

(a) Check that the tip of the spline gear of the front drive clutch sleeve is not worn.

(b) Install the front drive clutch sleeve to the center differential case and check that the front drive clutch sleeve moves smoothly.

HINT:
Replace the center differential case and front drive clutch sleeve if necessary.

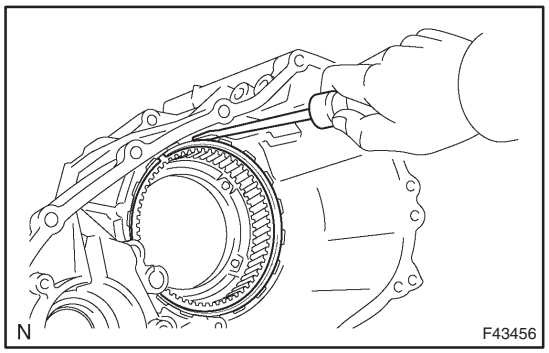


82. REMOVE TRANSFER CASE PLUG

(a) Remove the transfer case plug from the transfer front case.

83. REMOVE COMPRESSION SPRING

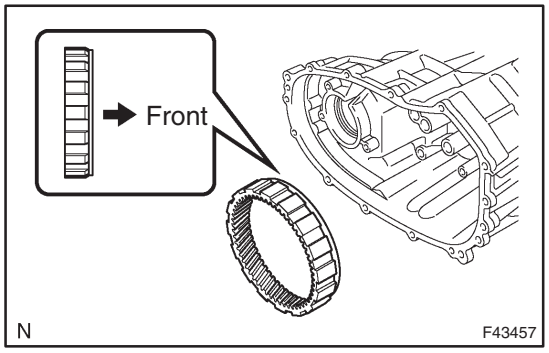
(a) Using a magnetic finger, remove the compression spring and head pin from the transfer front case.



84. REMOVE TRANSFER LOW PLANETARY RING GEAR

(a) Using a screwdriver, remove the low planetary gear shaft snap ring.

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

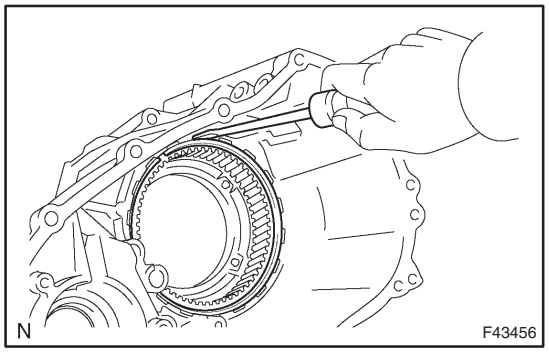


85. INSTALL TRANSFER LOW PLANETARY RING GEAR

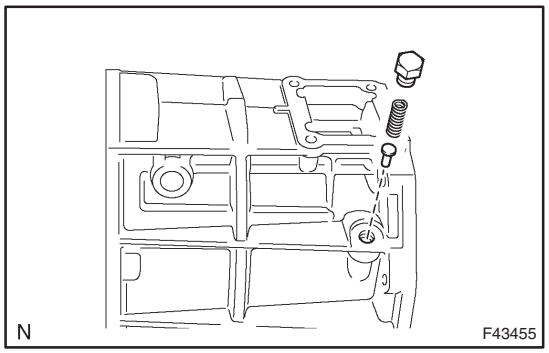
(a) Install the low planetary ring gear to the transfer front case.

NOTICE:

Make sure to install the low planetary ring gear in the correct direction.



(b) Using a screwdriver, install the low planetary gear shaft snap ring.



86. INSTALL COMPRESSION SPRING

(a) Install the head pin and compression spring to the transfer front case.

87. INSTALL TRANSFER CASE PLUG

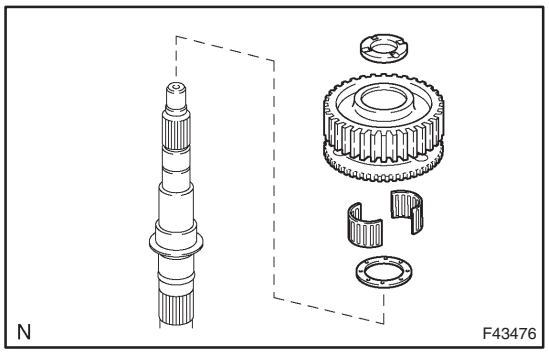
(a) Apply sealant to the head screw plug threads.

Sealant:

Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent

(b) Install the transfer case plug.

Torque: 19 N·m (190 kgf·cm, 14 ft·lbf)



88. INSTALL TRANSFER OUTPUT SHAFT PLATE WASHER

(a) Install the output shaft plate washer to the rear output shaft.

89. INSTALL TRANSFER DRIVE SPROCKET BEARING

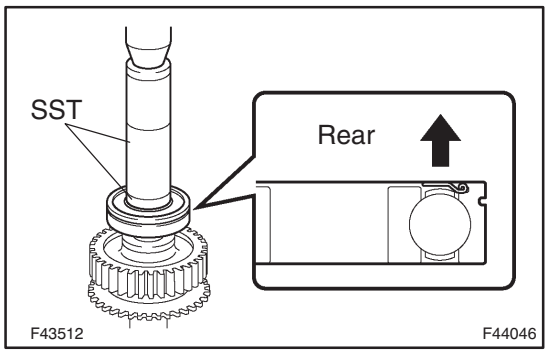
(a) Install the drive sprocket bearing to the rear output shaft.

90. INSTALL TRANSFER DRIVE SPROCKET SUB–ASSY

(a) Install the drive sprocket sub–assy to the rear output shaft.

91. INSTALL TRANSFER OUTPUT SHAFT SPACER NO.1

(a) Install the output shaft spacer No.1 to the rear output shaft.



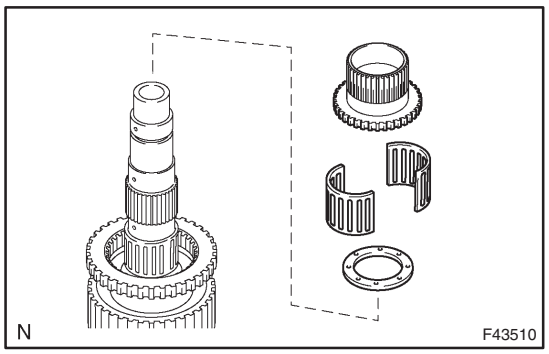
92. INSTALL TRANSFER OUTPUT SHAFT REAR RADIAL BALL BEARING

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

SST 09316–60011 (09316–00011, 09316–00071)

NOTICE:

Install the output shaft rear radial ball bearing so that the bearing snap ring groove faces to the rear.



93. INSTALL TRANSFER OUTPUT SHAFT PLATE WASHER

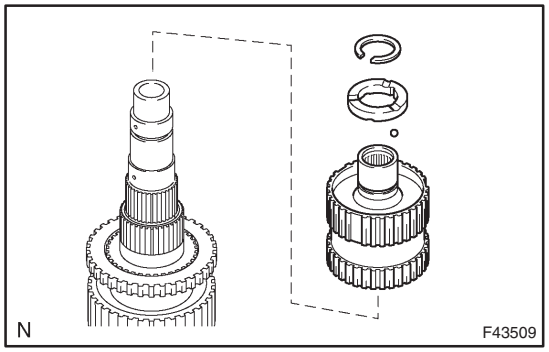
(a) Install the output shaft plate washer to the rear output shaft.

94. INSTALL TRANSFER OUTPUT SHAFT FRONT NEEDLE ROLLER BEARING

(a) Install the output shaft front needle roller bearing to the rear output shaft.

95. INSTALL TRANSFER CLUTCH HUB

(a) Install the transfer clutch hub to the rear output shaft.



96. INSTALL CENTER DIFFERENTIAL CASE

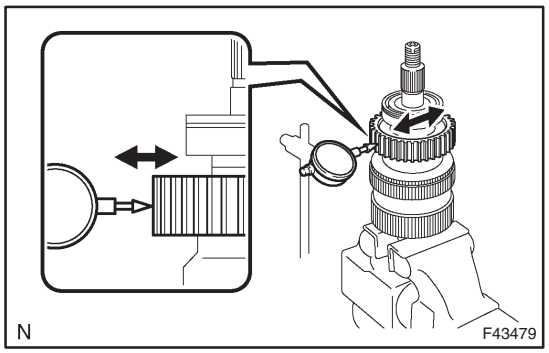
(a) Install the center differential case to the rear output shaft.

97. INSTALL TRANSFER OUTPUT SHAFT SPACER NO.2

(a) Install the output shaft spacer ball and output shaft spacer No.2 to the center differential case.

98. INSTALL TRANSFER LOW PLANETARY RING GEAR HOLE SNAP RING

(a) Using a snap ring expander, install the low planetary snap ring.



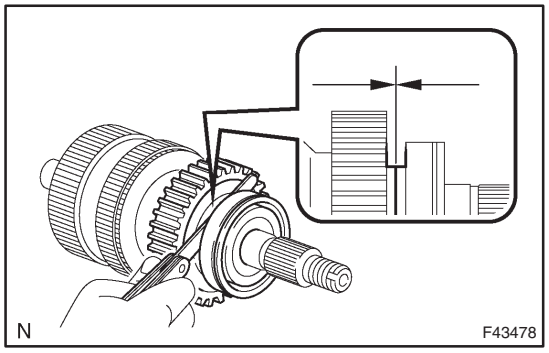
99. INSPECT DRIVE SPROCKET RADIAL CLEARANCE

(a) Mount the rear output shaft sub–assy in a soft jaw vise.

(b) Using a dial indicator, measure the radial clearance of the drive sprocket.

Standard clearance:
0.01 to 0.06 mm (0.0004 to 0.0024 in.)
Maximum clearance:
0.06 mm (0.0024 in.)

If the clearance exceeds the maximum, replace the drive sprocket, output shaft rear or needle roller bearing.

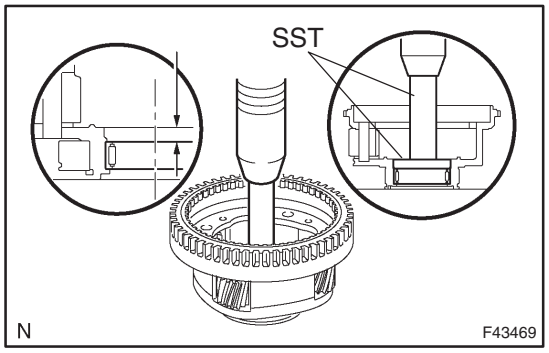


100. INSPECT DRIVE SPROCKET THRUST CLEARANCE

(a) Using a feeler gauge, measure the thrust clearance of the drive sprocket.

Standard clearance:
0.15 to 0.24 mm (0.0059 to 0.0094 in.)
Maximum clearance:
0.24 mm (0.0094 in.)

If the clearance exceeds the maximum, replace the drive sprocket.

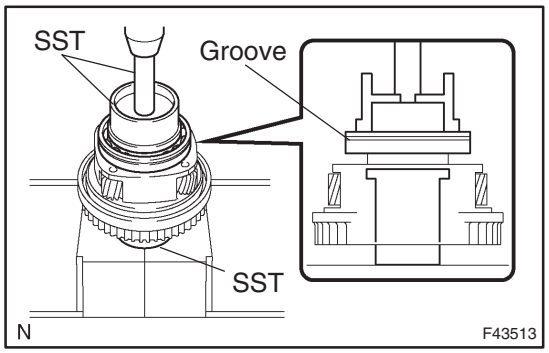


101. INSTALL TRANSFER LOW PLANETARY GEAR BEARING

(a) Using SST and a press, install the low planetary gear bearing (front).

SST 09950–60010 (09951–00570), 09950–70010 (09951–07100)

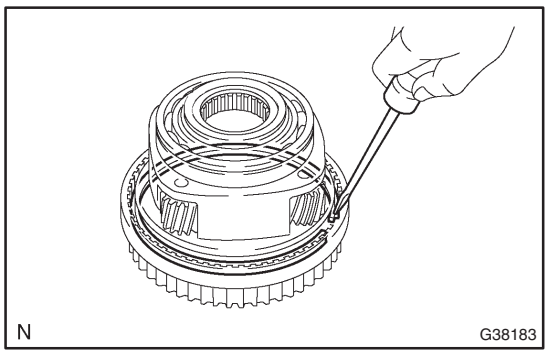
Bearing press in depth: 7.7 to 8.3 mm (0.303 to 0.327 in.)



102. INSTALL TRANSFER INPUT SHAFT BEARING

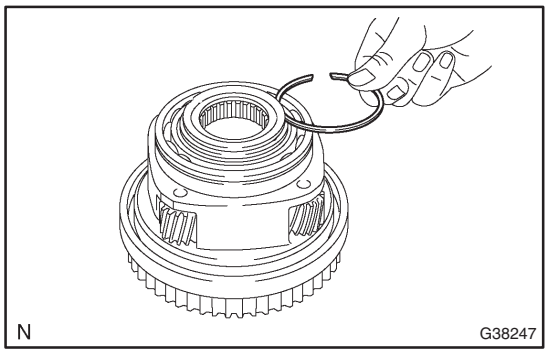
(a) Using SST and a press, install the input shaft bearing with the groove facing forward.

SST 09223–15020, 09515–30010, 09950–70010 (09951–07100)



103. INSTALL TRANSFER LOW PLANETARY GEAR SPLINE PIECE

(a) Using a screwdriver, install the low planetary gear spline piece and low planetary gear with the planetary ring gear hole snap ring.

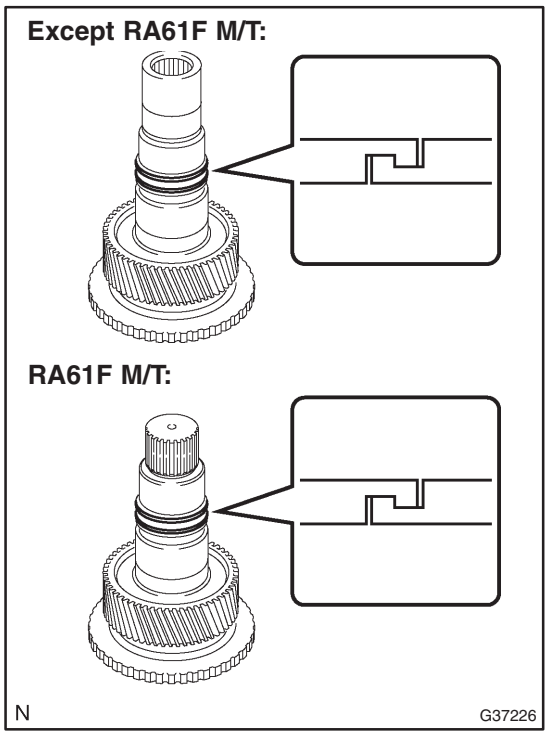


104. INSTALL TRANSFER INPUT BEARING SHAFT SNAP RING

(a) Select an input bearing shaft snap ring that allows for 0.1 mm (0.0039 in.) or less axial play.

Mark	Thickness mm (in.)
1	1.45 to 1.50 (0.0571 to 0.0591)
2	1.50 to 1.55 (0.0591 to 0.0610)
3	1.55 to 1.60 (0.0610 to 0.0630)
4	1.60 to 1.65 (0.0630 to 0.0650)
5	1.65 to 1.70 (0.0650 to 0.0669)

(b) Using a snap ring expander, install a new input bearing shaft snap ring.

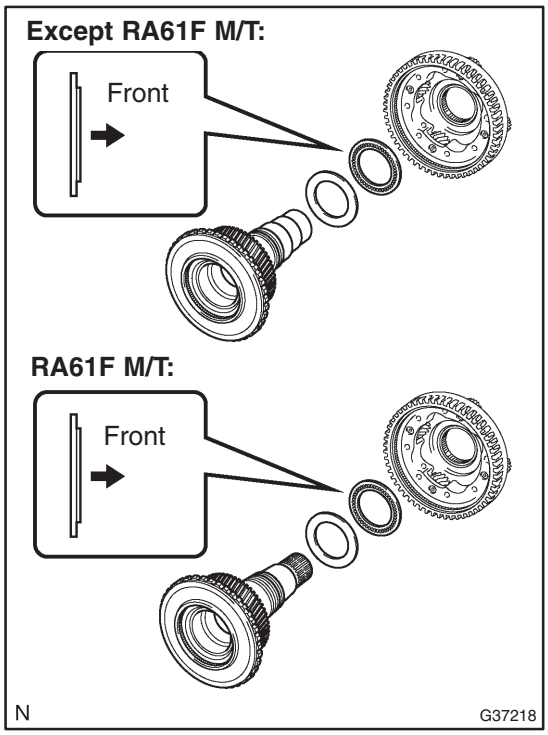


105. INSTALL TRANSFER INPUT SHAFT SEAL RING NO.1

(a) Install the 2 input shaft seal ring No.1 to the input shaft.

HINT:

- Apply gear oil to the 2 oil seal rings.
- Engage securely to eliminate clearance as shown in the illustration.



106. INSTALL TRANSFER LOW PLANETARY GEAR BEARING

(a) Install the low planetary gear bearing (rear) to the low planetary gear sub–assy.

NOTICE:

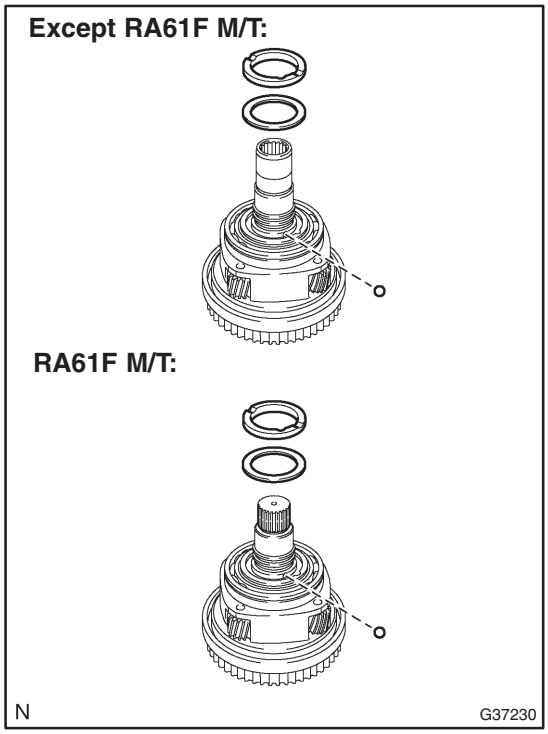
Make sure to install the transfer low planetary gear bearing in the correct direction.

107. INSTALL TRANSFER THRUST BEARING RACE NO.1

(a) Install the thrust bearing race No.1 to the low planetary gear sub–assy.

108. INSTALL TRANSFER INPUT SHAFT

(a) Install the input shaft to the low planetary gear sub–assy.

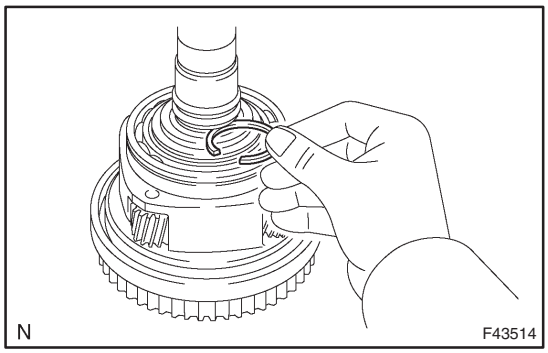


109. INSTALL MANUAL TRANSFER PLANETARY CARR WASHER

(a) Install the transfer planetary carr washer and input gear stopper to the input shaft sub–assy.

110. INSTALL TRANSFER INPUT GEAR STOPPER BALL

(a) Install the input gear stopper ball to the input shaft sub–assy.

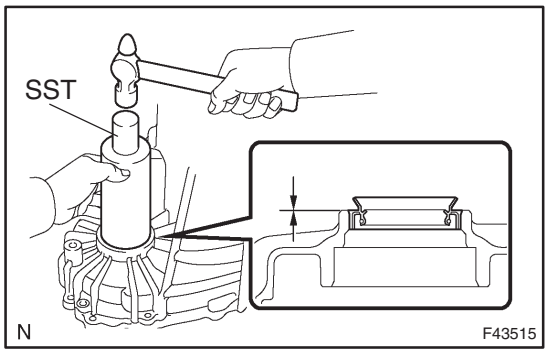


111. INSTALL TRANSFER INPUT GEAR STOPPER SHAFT SNAP RING

(a) Select an input gear stopper shaft snap ring that allows for 0.05 to 0.15 mm (0.0020 to 0.0059 in.) axial play.

Mark	Thickness mm (in.)
A	2.10 to 2.15 (0.0827 to 0.0846)
B	2.15 to 2.20 (0.0846 to 0.0866)
C	2.20 to 2.25 (0.0866 to 0.0886)
D	2.25 to 2.30 (0.0886 to 0.0906)
E	2.30 to 2.35 (0.0906 to 0.0925)
F	2.35 to 2.40 (0.0925 to 0.0945)
G	2.40 to 2.45 (0.0945 to 0.0965)
H	2.45 to 2.50 (0.0965 to 0.0984)
J	2.50 to 2.55 (0.0984 to 0.1004)
K	2.55 to 2.60 (0.1004 to 0.1204)
L	2.60 to 2.65 (0.1024 to 0.1043)
M	2.65 to 2.70 (0.1043 to 0.1063)
N	2.70 to 2.75 (0.1063 to 0.1083)
P	2.75 to 2.80 (0.1083 to 0.1102)
Q	2.80 to 2.85 (0.1102 to 0.1122)
R	2.85 to 2.90 (0.1122 to 0.1142)
S	2.90 to 2.95 (0.1142 to 0.1161)
T	2.95 to 3.00 (0.1161 to 0.1181)
U	3.00 to 3.05 (0.1181 to 0.1201)

(b) Using a snap ring expander, install a new input gear stopper snap ring.

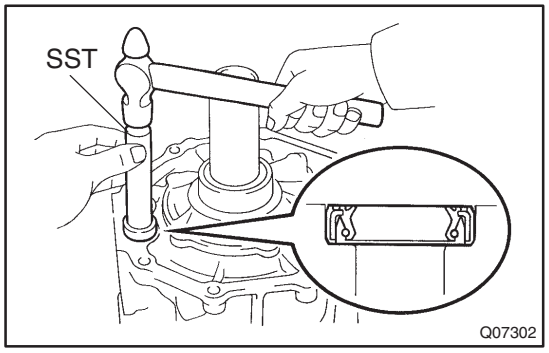


112. INSTALL TRANSFER CASE OIL SEAL

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

(b) Using SST and a hammer, install the oil seal until its surface is flush with the case upper surface. (No.1)

SST 09316–60011 (09316–00011)



(c) Coat the lip of a new oil seal with MP grease.

(d) w/ actuator motor

(1) Using SST and a hammer, install the oil seal until its surface is flush with the case upper surface. (No.2)

SST 09304–12012

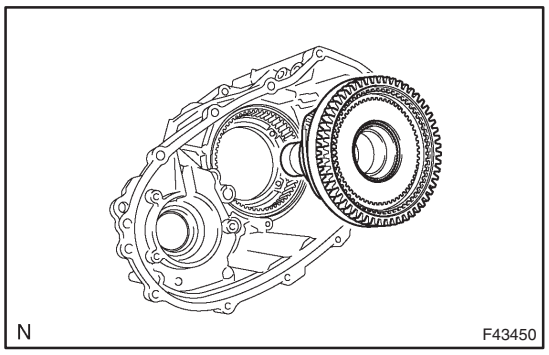
Oil seal drive in depth:
–0.5 to 0.5 mm (–0.020 to 0.020 in.)

(e) w/o actuator motor

(1) Using SST and a hammer, install the 2 oil seals until its surface is flush with the case upper surface. (No.2)

SST 09304–12012

Oil seal drive in depth:
–0.5 to 0.5 mm (–0.020 to 0.020 in.)

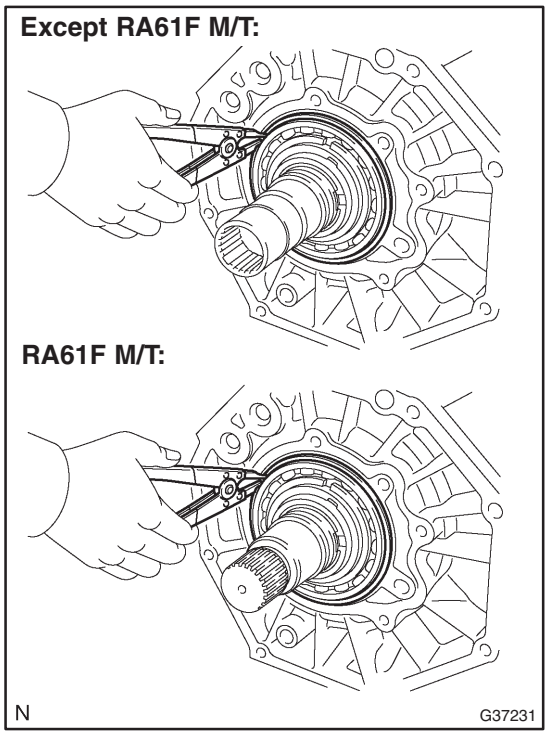


113. INSTALL LOW PLANETARY GEAR ASSY W/INPUT SHAFT SUB–ASSY

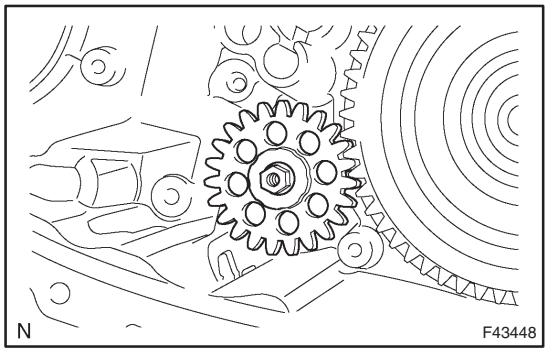
(a) Install the low planetary gear assy w/ input shaft sub–assy to the transfer front case.

HINT:

If necessary, heat the front case to about 50 to 80°C (122 to 176°F).

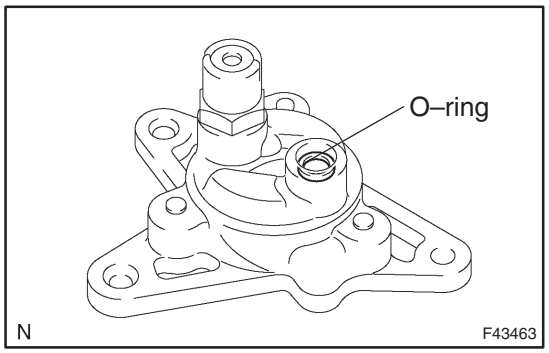


(b) Using a snap ring expander, install the low planetary gear bearing shaft snap ring.



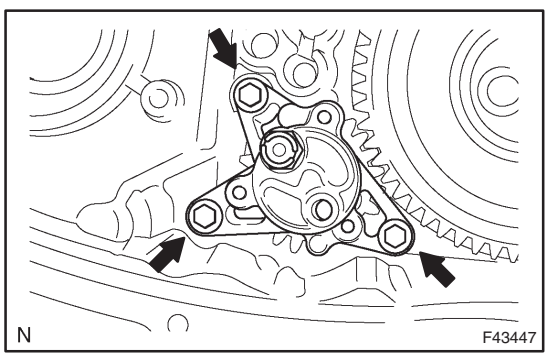
114. INSTALL TRANSFER OIL PUMP GEAR

(a) Install the oil pump gear to the transfer front case.



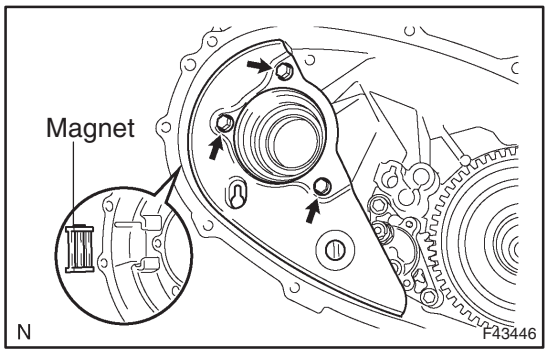
115. INSTALL TRANSFER OIL PUMP BODY O–RING

(a) Coat a new oil pump body O–ring with gear oil and install it to the oil pump body.



116. INSTALL TRANSFER OIL PUMP BODY SUB–ASSY

(a) Install the oil pump body sub–assy with the 3 bolts.
Torque: 7.5 N·m (76 kgf·cm, 66 in.·lbf)



117. INSTALL TRANSFER CASE MAGNET

(a) Install the case magnet to the transfer front case.

118. INSTALL TRANSFER OIL SEPARATOR SUB–ASSY

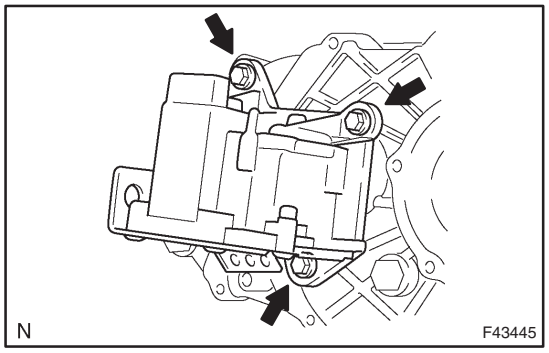
(a) Install the oil separator sub–assy with the 3 bolts.
Torque: 7.5 N·m (76 kgf·cm, 66 in.·lbf)

119. INSTALL TRANSFER CASE NO.1 PLUG

(a) Install the case No.1 plug (filler plug) and a new gasket.
Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)

120. INSTALL TRANSFER CASE NO.1 PLUG

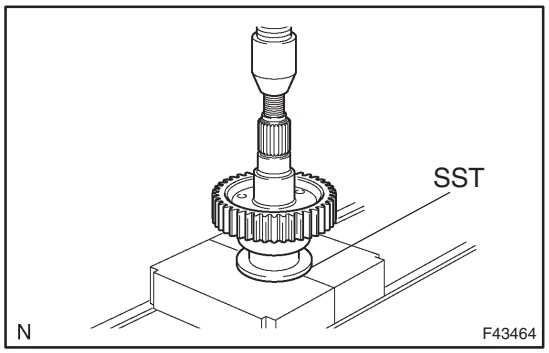
(a) Install the case No.1 plug (drain plug) and a new gasket.
Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)



121. INSTALL TRANSFER SHIFT ACTUATOR ASSY (W/ ACTUATOR MOTOR)

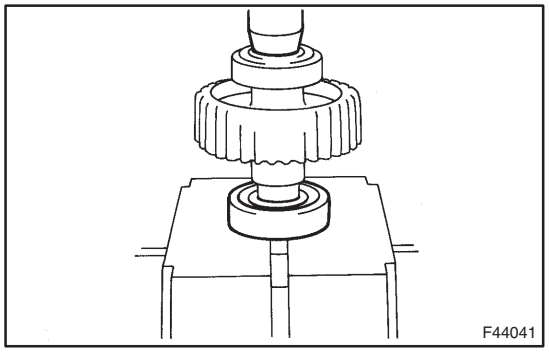
(a) Install the actuator assy with the 3 bolts.
Torque: 20 N·m (204 kgf·cm, 15 ft.·lbf)

(b) Using a screwdriver and hammer, install the transfer gear shift fork shaft snap ring.



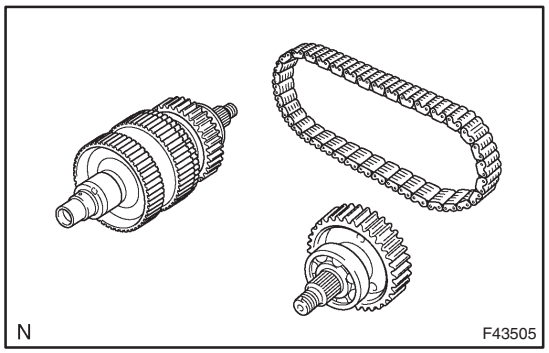
122. INSTALL TRANSFER INPUT GEAR RADIAL BALL BEARING

(a) Using SST and a press, install the input gear radial ball bearing to the driven sprocket.
SST 09316–60011 (09316–00031)



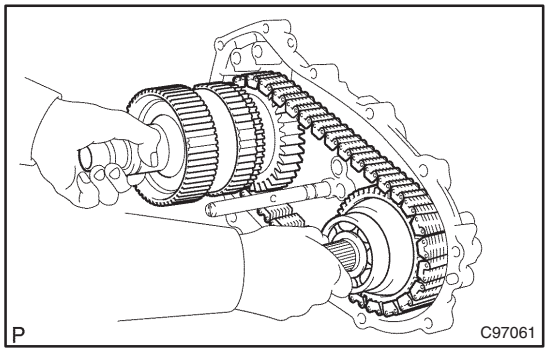
123. INSTALL TRANSFER DRIVEN SPROCKET BEARING

(a) Using a press, install the driven sprocket bearing to the driven sprocket.



124. INSTALL REAR OUTPUT SHAFT SUB–ASSY, FRONT DRIVE CHAIN AND DRIVEN SPROCKET SUB–ASSY

(a) Install the rear output shaft sub–assy and driven sprocket sub–assy to the front drive chain.



(b) Install the rear output shaft sub–assy, front drive chain and driven sprocket sub–assy to the transfer rear case.

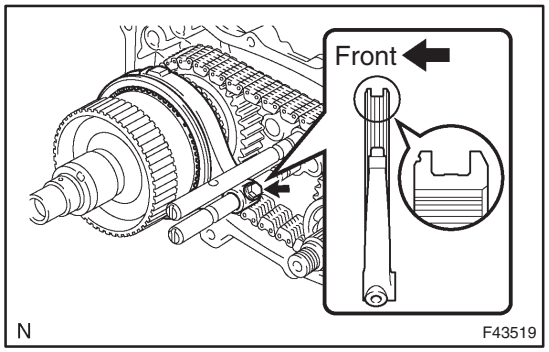
HINT:

Check that the rear output shaft sub–assy and driven sprocket sub–assy turn lightly.

If necessary, heat the rear case to about 50 to 80°C (122 to 176°F).

NOTICE:

Be sure to use thick gloves to protect hands because the transfer rear case becomes excessively hot.



125. INSTALL CTR DIFFERENTIAL LOCK FORK SUB–ASSY W/FRONT DRIVE CLUTCH SLEEVE (W/ ACTUATOR MOTOR)

(a) Install the CTR differential lock fork sub–assy and front drive clutch sleeve.

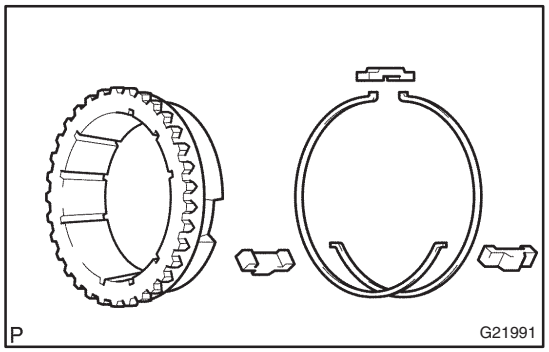
NOTICE:

Make sure to install the forks in the correct direction.

(b) Install the bolt.

Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)

(c) Using a screwdriver and hammer, install the shift fork shaft snap ring.



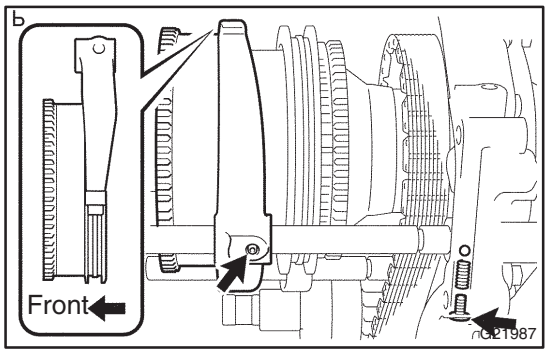
126. INSTALL TRANSFER GEAR SHIFT FORK NO.2 W/TRANSFER HIGH AND LOW CLUTCH SLEEVE (W/ ACTUATOR MOTOR)

(a) Manual transmission:

(1) Install the synchronizer ring, 3 shifting keys and 2 spring No.1 to the rear output shaft sub–assy.

NOTICE:

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



(b) Install the gear shift fork No.2, high and low shift fork shaft and high and low clutch sleeve.

NOTICE:

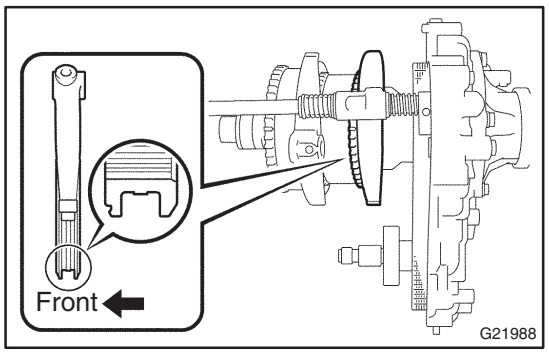
Make sure to install the fork in the correct direction.

(c) Apply sealant to the spring plug threads.
Sealant:
Part No. 08833–00083, THREE BOND 1344, LOCTITE 242 or equivalent

(d) Install the detent ball and compression spring to the rear case.

(e) Install the spring plug to the rear case.
Torque: 19 N·m (190 kgf·cm, 14 ft·lbf)

(f) Using a pin punch and hammer, Install the slotted spring pin.



127. INSTALL CTR DIFFERENTIAL LOCK FORK SUB–ASSY W/FRONT DRIVE CLUTCH SLEEVE (W/O ACTUATOR MOTOR)

(a) Install the front drive clutch sleeve.

NOTICE:

Make sure to install the clutch sleeve in the correct direction.

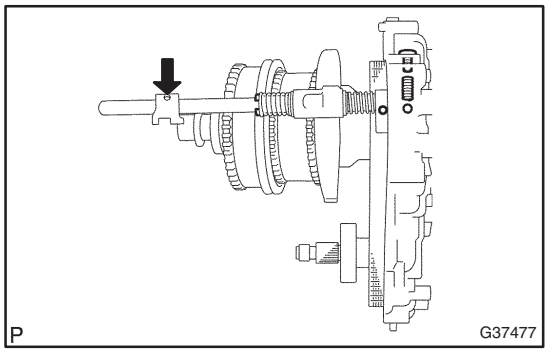
(b) Install the front drive shift shaft and CTR differential lock fork.

(c) Install the detent ball and compression spring to the rear case.

(d) Apply sealant to the spring plug (No.2) threads.
Sealant:
Part No. 08833–00083, THREE BOND 1344, LOCTITE 242 or equivalent

(e) Install the spring plug (No.2) to the rear case.
Torque: 19 N·m (190 kgf·cm, 14 ft·lbf)

(f) Using a pin punch and hammer, install the slotted spring pin.

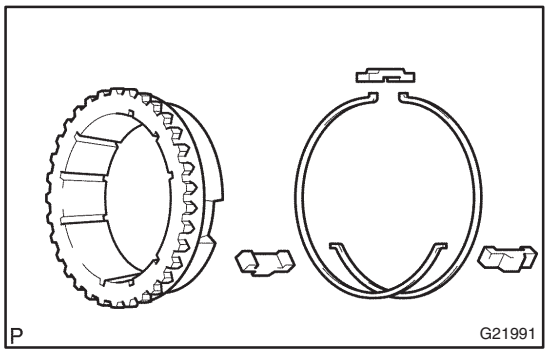


128. REMOVE TRANSFER GEAR SHIFT HEAD NO.1

(a) 2TR–FE M/T, 1GR–FE:

(1) Using a pin punch and hammer, install the slotted pin to the gear shift head No.1.

(2) Install the gear shift head No.1 to the shift fork shaft.



129. INSTALL TRANSFER GEAR SHIFT FORK NO.2 W/TRANSFER HIGH AND LOW CLUTCH SLEEVE (W/O ACTUATOR MOTOR)

(a) Manual transmission:

(1) Install the synchronizer ring, 3 shifting keys and 2 spring No.1 to the rear output shaft sub–assy.

NOTICE:

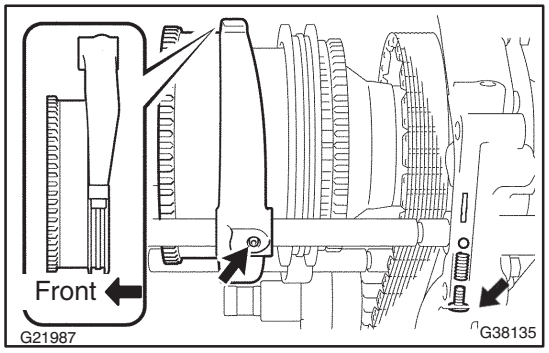
Do not set both openings of the shifting key spring in the same position.

(b) Install the or roller shift inter–lock pin to the rear case.

(c) Install the gear shift fork No.2, high and low shift fork shaft and high and low clutch sleeve.

NOTICE:

Make sure to install the fork in the correct direction.



(d) Install the detent ball and compression spring to the transfer rear case.

(e) Apply sealant to the spring plug (No.1) threads.

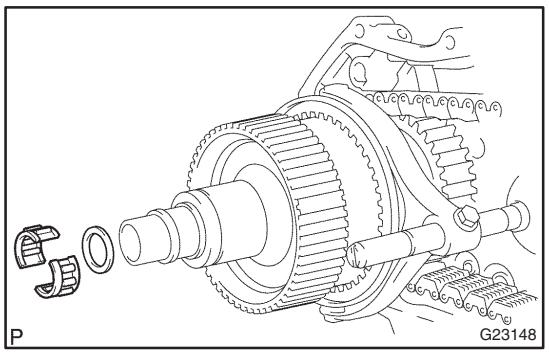
Sealant:

Part No. 08833–00083, THREE BOND 1344, LOCTITE 242 or equivalent

(f) Install the spring plug (No.1) to the transfer rear case.

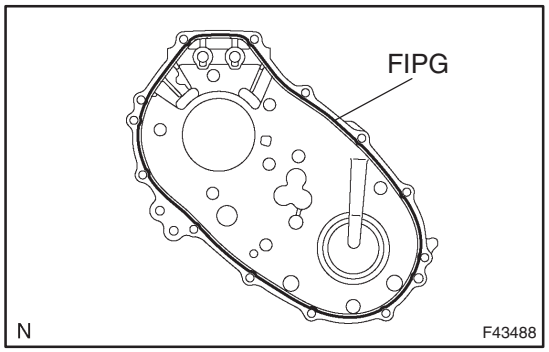
Torque: 19 N·m (190 kgf·cm, 14 ft·lbf)

(g) Using a pin punch and hammer, install the slotted spring pin.



130. INSTALL TRANSFER OUTPUT SHAFT FRONT NEEDLE ROLLER BEARING

(a) Install the output shaft front needle roller bearing and output shaft spacer to the rear output shaft sub–assy.



131. INSTALL TRANSFER CASE REAR

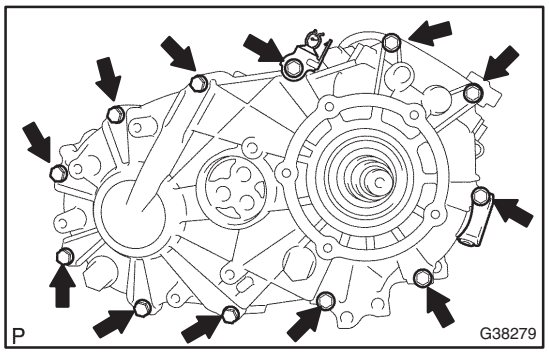
(a) Apply FIPG to the case rear, as shown.

FIPG:

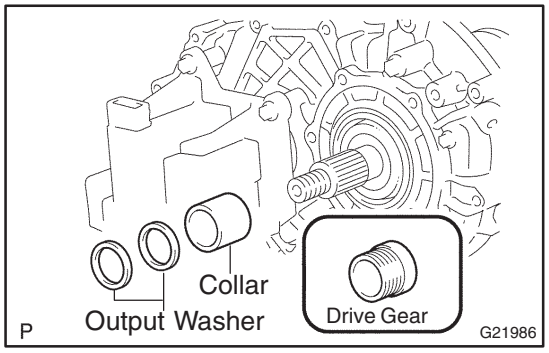
Part No. 08826–00090, THREE BOND 1281 or equivalent

NOTICE:

- **Be sure to install the transfer case rear within 10 minutes of applying seal packing.**
- **Do not add oil or drive the vehicle immediately after installing the case. Be sure to wait for more than 1 hour. Another 12 hours are necessary before accelerating or decelerating suddenly.**



(b) Install the clamp and case rear with the 12 bolts.
Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)

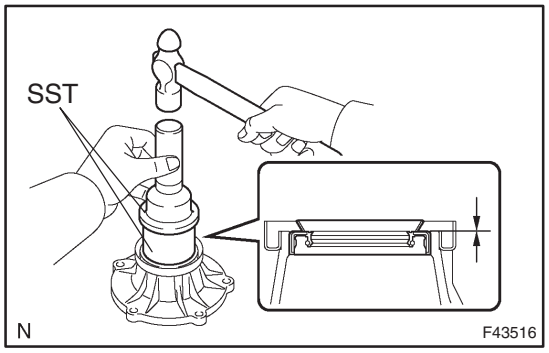


132. INSTALL TRANSFER OUTPUT WASHER

(a) Install the speed sensor drive gear or collar and 2 output shaft plate washers.

NOTICE:

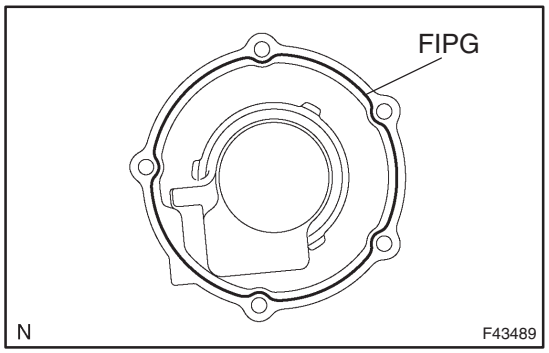
- **Be sure to install the speed sensor drive gear in the correct direction.**



133. INSTALL TRANSFER EXTENSION HOUSING TYPE T OIL SEAL

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

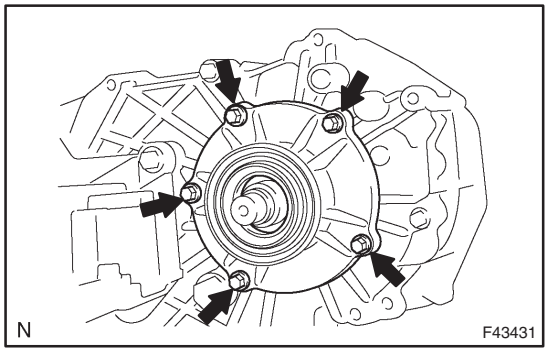
(b) Using SST and a hammer, install the oil seal until its surface is flush with the housing upper surface.
SST 09223–46011, 09631–32020



134. INSTALL EXTENSION HOUSING ASSY

(a) Apply FIPG to the extension housing sub–assy, as shown.
FIPG:
Part No. 08826–00090, THREE BOND 1281 or equivalent

(b) Apply sealant to the bolt threads.
Sealant:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent



(c) Install the extension housing sub–assy with the 5 bolts.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

NOTICE:

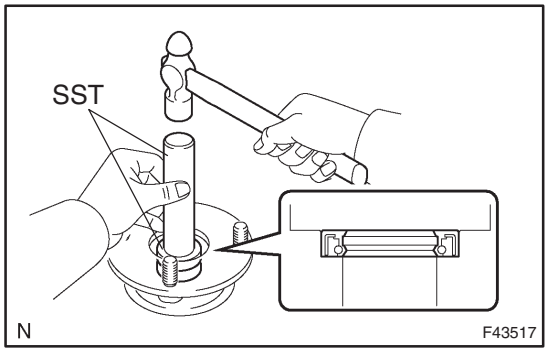
- **Be sure to install the extension housing assy within 10 minutes of applying seal packing.**
- **Do not add oil or drive the vehicle immediately after installing the case. Be sure to wait for more than 1 hour. Another 12 hours are necessary before accelerating or decelerating suddenly.**

135. INSTALL SPEEDOMETER DRIVEN HOLE COVER SUB–ASSY (W/ SPEEDOMETER DRIVEN HOLE COVER)

(a) Install the speedometer driven hole cover sub–assy with the bolt.
Torque: 12 N·m (117 kgf·cm, 8 ft·lbf)

136. INSTALL SPEEDOMETER DRIVEN GEAR ASSY W/SENSOR (W/ SPEEDOMETER SENSOR)

(a) Install the speedometer driven gear w/ sensor with the bolt.
Torque: 12 N·m (117 kgf·cm, 8 ft·lbf)



137. INSTALL TRANSFER OUTPUT SHAFT COMPANION FLANGE OIL SEAL

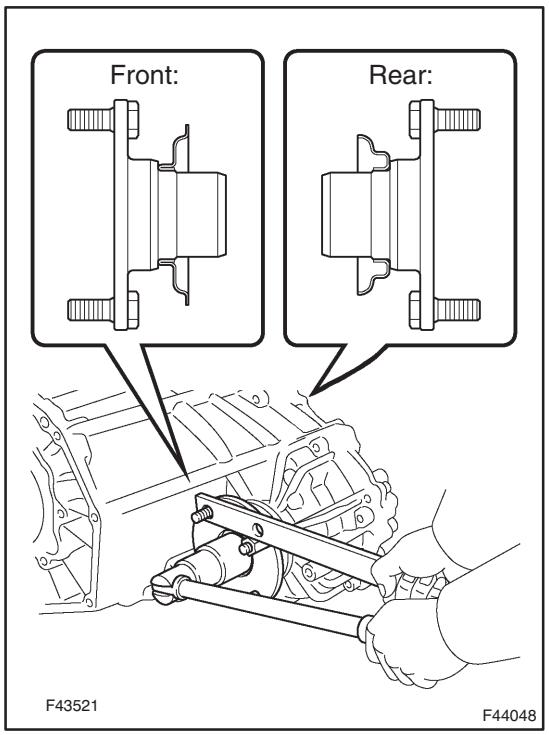
(a) Coat the lip of a new oil seal with MP grease.

(b) Using SST and a hammer, install the oil seal (front).
SST 09950–60010 (09951–00320), 09950–70010 (09951–07100)

138. INSTALL TRANSFER OUTPUT SHAFT COMPANION FLANGE OIL SEAL

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

(b) Install the oil seal (rear) using the same way as for the oil seal (front).
SST 09950–60010 (09951–00320), 09950–70010 (09951–07100)



139. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB–ASSY

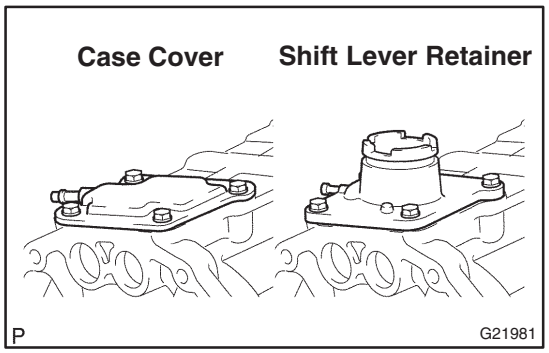
(a) Install the companion flange sub–assy to the drive sprocket sub–assy. (front)

(b) Using SST to hold the companion flange, install a new companion flange lock nut.
Torque: 118 N·m (1,203 kgf·cm, 87 ft·lbf)

(c) Using a chisel and hammer, stake the companion flange lock nut.
SST 09330–00021, 09950–40011 (09951–04020, 09952–04010, 09953–04030, 09954–04010, 09955–04051, 09957–04010, 09958–04011)

140. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB–ASSY

(a) Using SST, install the companion flange sub–assy (rear) using the same way as for the companion flange sub–assy. (front).
Torque: 118 N·m (1,203 kgf·cm, 87 ft·lbf)
SST 09330–00021, 09950–40011 (09951–04020, 09952–04010, 09953–04030, 09954–04010, 09955–04051, 09957–04010, 09958–04011)



141. INSTALL BREATHER OIL DEFLECTOR

142. INSTALL TRANSFER CASE COVER SUB–ASSY

(a) 2TR–FE A/T, 1KD–FTV:

(1) Install the case cover sub–assy with the 4 bolts.

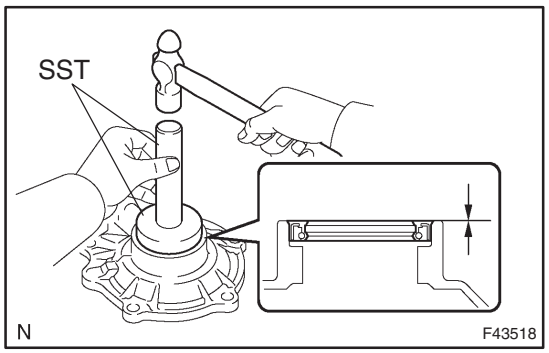
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

143. INSTALL TRANSFER CONTROL SHIFT LEVER RETAINER SUB–ASSY

(a) 2TR–FE M/T, 1GR–FE:

(1) Install the transfer control shift lever retainer sub–assy with the 4 bolts.

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



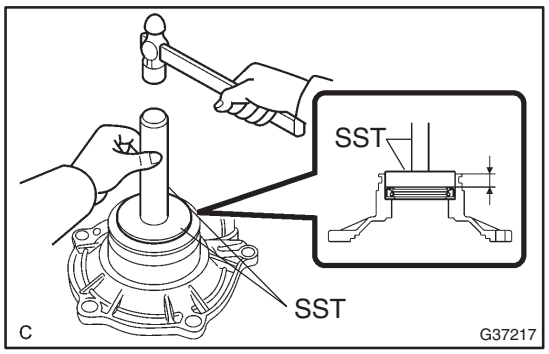
144. INSTALL TRANSFER COVER TYPE T OIL SEAL

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

(b) Except RA61F M/T:

(1) Using SST and a hammer, install the oil seal until its surface is flush with the retainer upper surface.

SST 09950–60010 (09951–00590), 09950–70010 (09951–07100)

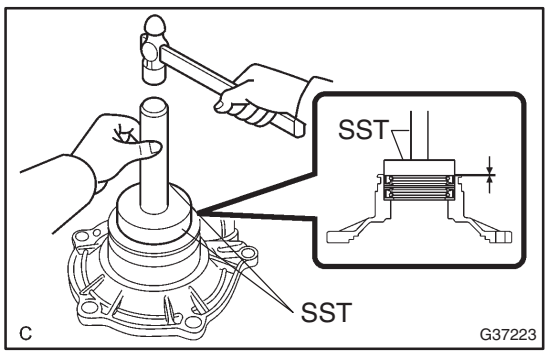


(c) RA61F M/T:

(1) Using SST and a hammer, install the oil seal.

SST 09950–60010 (09951–00590), 09950–70010 (09951–07100)

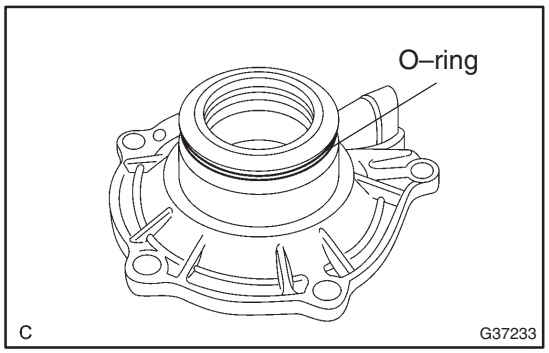
Oil seal drive in depth:
10.5 to 11.5 mm (0.413 to 0.453 in.)



(2) Using SST and a hammer, install the oil seal.

SST 09950–60010 (09951–00590), 09950–70010 (09951–07100)

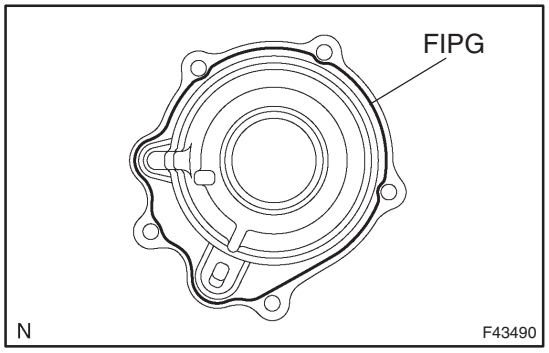
Oil seal drive in depth:
0.5 to 1.0 mm (0.020 to 0.039 in.)



145. INSTALL TRANSFER RH BEARING RETAINER SUB–ASSY

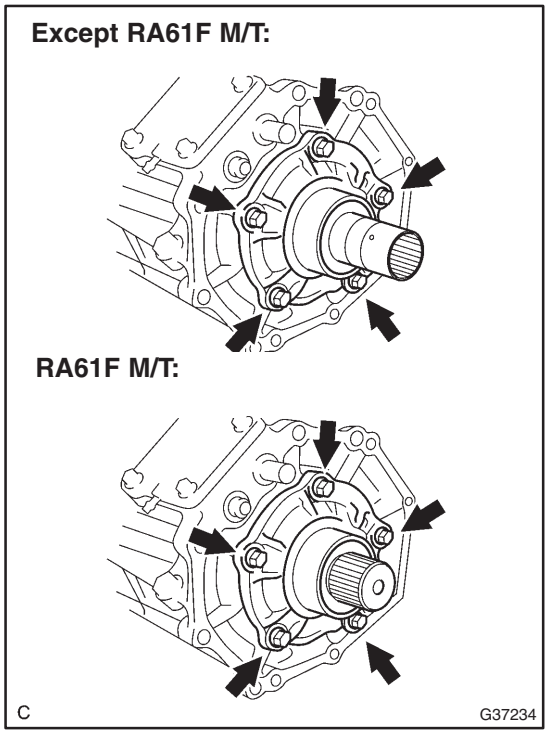
(a) RA61F M/T:

(1) Install the O–ring to the bearing retainer sub–assy.



(b) Apply FIPG to the bearing retainer sub–assy, as shown.
FIPG:
Part No. 08826–00090, THREE BOND 1281 or equivalent

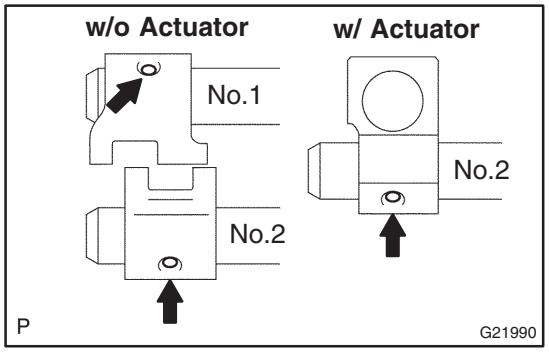
(c) Apply sealant to the bolt thread.
Sealant:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent



(d) Install the bearing retainer sub–assy with the 5 bolts.
Torque: 12 N·m (117 kgf·cm, 8 ft·lbf)

NOTICE:

- **Be sure to install the transfer RH bearing retainer within 10 minutes of applying seal packing.**
- **Do not add oil or drive the vehicle immediately after installing the case. Be sure to wait for more than 1 hour. Another 12 hours are necessary before accelerating or decelerating suddenly.**



146. INSTALL TRANSFER GEAR SHIFT HEAD NO.2

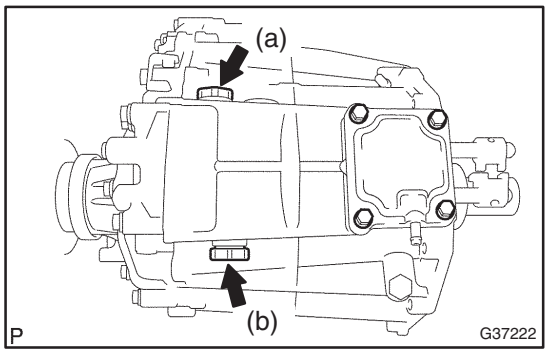
(a) 2TR–FE A/T, 1KD–FTV:

(1) Using a pin punch and hammer, install the slotted pin with the gear shift head No.2.

147. INSTALL TRANSFER GEAR SHIFT HEAD NO.1 (W/O ACTUATOR MOTOR)

(a) 2TR–FE A/T, 1KD–FTV:

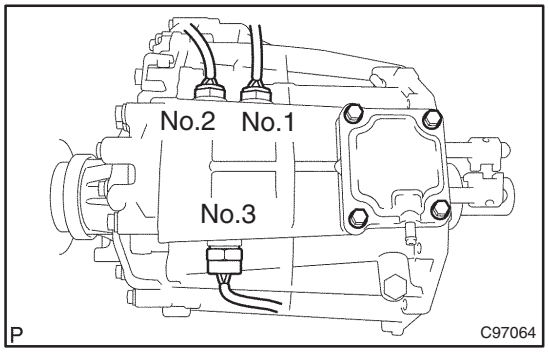
(1) Using a pin punch and hammer, install the slotted pin with the gear shift head No.1.



148. INSTALL TRANSFER CASE NO.1 PLUG

(a) Manual transmission:
  (1) Install a new gasket and the transfer case plug.
  Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)

(b) w/ Actuator motor
  (1) Install a new gasket and the transfer case plug.
  Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)



149. INSTALL TRANSFER INDICATOR SWITCH NO.1

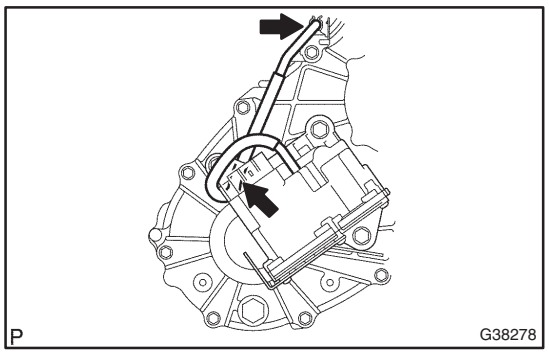
(a) Install the transfer indicator switch No.1.
  Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)

150. INSTALL TRANSFER INDICATOR SWITCH NO.2 (AUTOMATIC TRANSMISSION)

(a) Install the transfer indicator switch No.2.
  Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)

151. INSTALL TRANSFER INDICATOR SWITCH NO.3 (W/O ACTUATOR MOTOR)

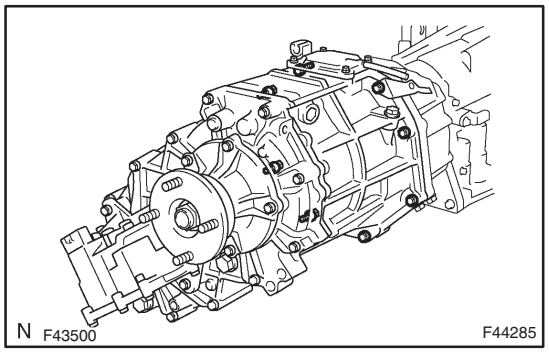
(a) Install the transfer indicator switch No.3.
  Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)



152. INSTALL HOSES (W/ ACTUATOR MOTOR)

NOTICE:

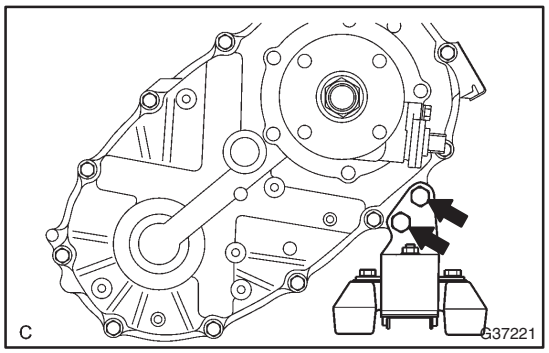
- **Pass the hose between the transfer rear case and the actuator motor.**
- **Adjust the clamp position to prevent the excessive bent or expansion/contraction of the hose.**



153. INSTALL TRANSFER ASSY

(a) Install the transfer to the transmission.

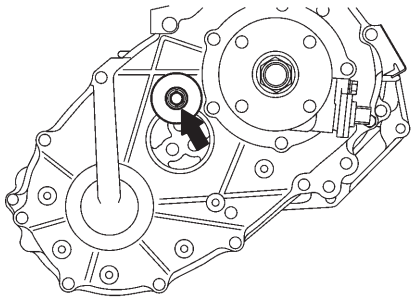
(b) Install the 2 clamps and 8 bolts.
  Torque: 24 N·m (244 kgf·cm, 17 ft·lbf)



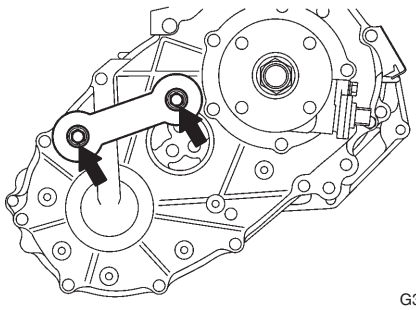
154. INSTALL TRANSFER DYNAMIC DAMPER (W/ TRANSFER DYNAMIC DAMPER)

(a) Install the transfer dynamic damper with the 2 bolts.
Torque: 38 N·m (387 kgf·cm, 28 ft·lbf)

Except 1GR–FE, M/T:



1GR–FE, M/T:



155. INSTALL DYNAMIC DAMPER WEIGHT (W/O ACTUATOR MOTOR)

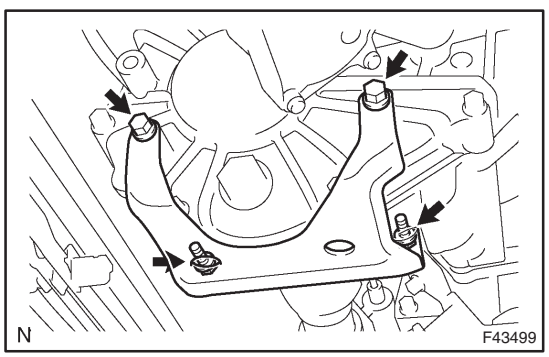
(a) Except 1GR–FE, M/T
(1) Install the dynamic damper weight with the bolt.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)
(b) 1GR–FE, M/T:
(1) Install the dynamic damper weight with the 2 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

156. INSTALL MANUAL TRANSMISSION ASSY (MANUAL TRANSMISSION)

(a) 2TR–FE: (See page 41–5)
(b) 1GR–FE: (See page 41–14)
(c) 1KD–FTV: (See page 41–26)

157. INSTALL AUTOMATIC TRANSMISSION ASSY (AUTOMATIC TRANSMISSION)

(a) 2TR–FE: (See page 40–21)
(b) 1GR–FE: (See page 40–53)
(c) 1KD–FTV: (See page 40–38)



158. INSTALL TRANSFER CASE LOWER PROTECTOR

(a) Install the transfer case lower protector with the 4 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

159. ADD TRANSFER OIL (SEE PUB. No. RM990E, PAGE 31–3)