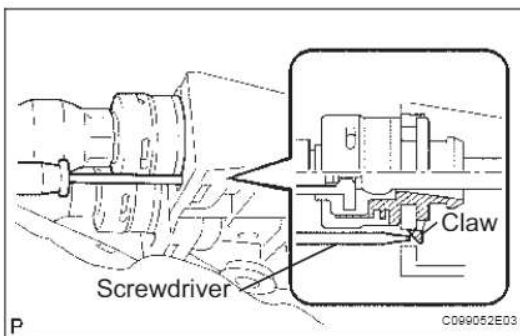
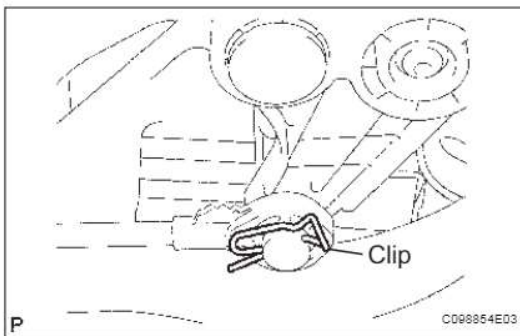
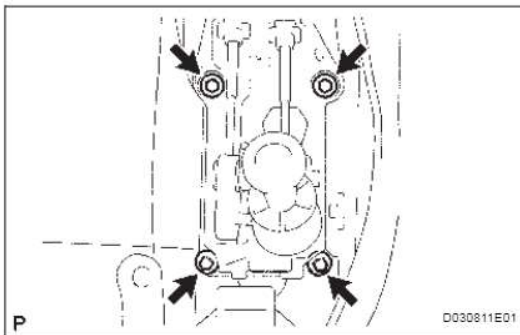
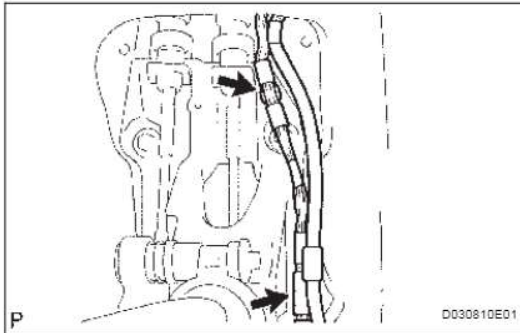


C50 MANUAL TRANSAXLE – FLOOR SHIFT LEVER ASSEMBLY**MX-7****REMOVAL****1. REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY**(a) Remove the shift lever knob (see page [IP-26](#)).**2. REMOVE REAR CONSOLE BOX ASSEMBLY**(a) Remove the rear console box (see page [IP-26](#)).**3. REMOVE FLOOR SHIFT LEVER ASSEMBLY**

(a) Disconnect the wire harness.



(b) Remove the 4 bolts and disconnect the shift lever.

(c) Remove the clip, and disconnect the cable end of the transmission control select cable from the floor shift lever.

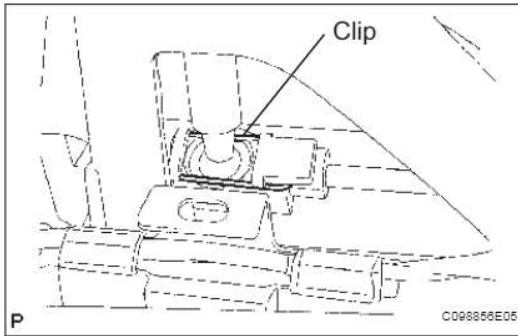
(d) Using a screwdriver, detach the claw.

(e) Disconnect the transmission control select cable from the shift lever retainer.

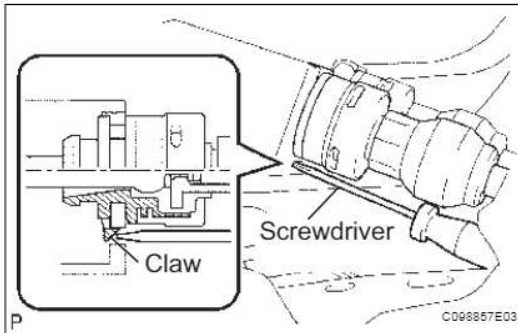
MX

MX-8

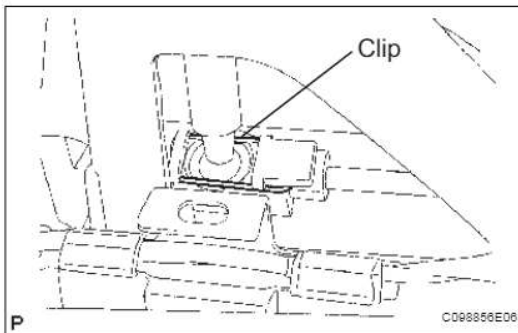
C50 MANUAL TRANSAXLE – FLOOR SHIFT LEVER ASSEMBLY



- (f) Remove the clip, and disconnect the cable end of the transmission control shift cable from the floor shift lever.



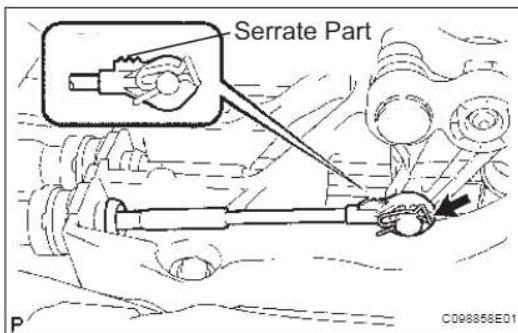
- (g) Using a screwdriver, detach the claw.
(h) Disconnect the transmission control shift cable from the shift lever retainer.



INSTALLATION

1. INSTALL FLOOR SHIFT LEVER ASSEMBLY

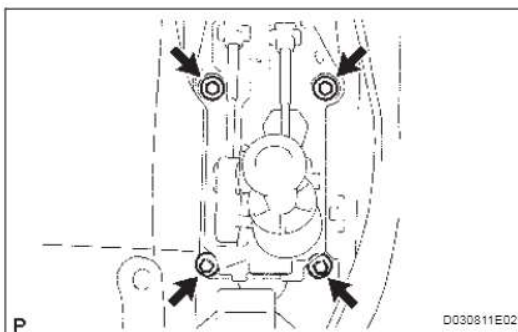
- (a) Connect the transmission control shift cable to the shift lever retainer with the clip.
(b) Connect the end of the transmission control shift cable to the floor shift lever.



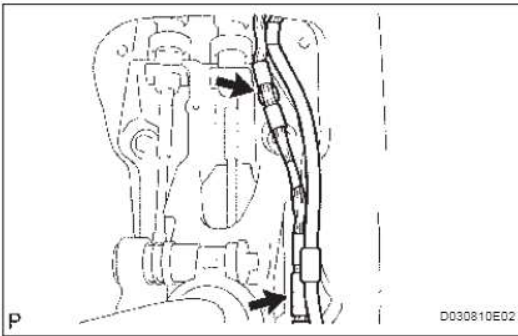
- (c) Connect the transmission control select cable to the shift lever retainer.
(d) Connect the end of the transmission control select cable to the floor shift lever with the clip.

NOTICE:

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



- (e) Install the shift lever with the 4 bolts.
Torque: 12 N*m (120 kgf*cm, 9 ft.*lbf)

C50 MANUAL TRANSAXLE – FLOOR SHIFT LEVER ASSEMBLY**MX-9**

(f) Connect the wire harness.

2. INSTALL REAR CONSOLE BOX ASSEMBLY

(a) Install the rear console box (see page [IP-27](#)).

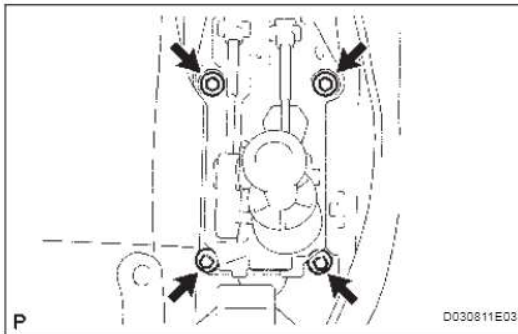
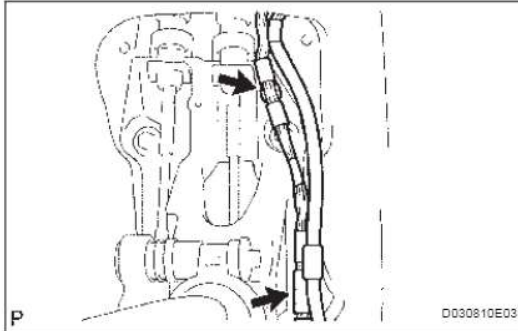
3. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY

(a) Install the shift lever knob (see page [IP-27](#)).

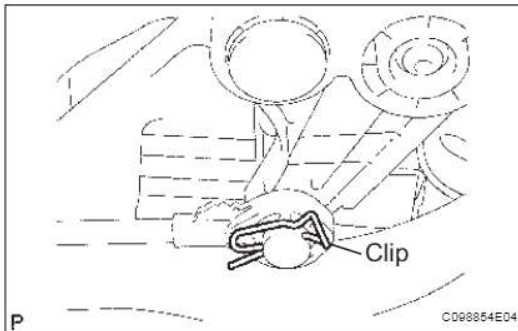
MX

MX-12**C50 MANUAL TRANSAXLE – TRANSMISSION CONTROL CABLE****REMOVAL**

1. **REMOVE FRONT NO. 1 FLOOR HEAT INSULATOR**
2. **REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY**
(a) Remove the shift lever knob (see page [IP-17](#)).
3. **REMOVE REAR CONSOLE BOX ASSEMBLY**
(a) Remove the rear console box (see page [IP-26](#)).
4. **DISCONNECT FLOOR SHIFT LEVER ASSEMBLY**
(a) Disconnect the wire harness.

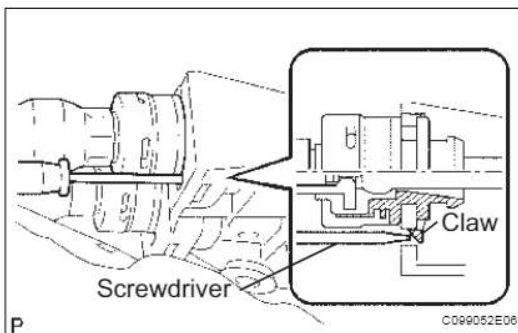


- (b) Remove the 4 bolts and disconnect the floor shift lever.



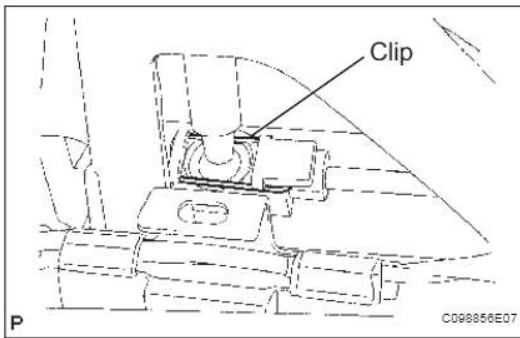
5. **REMOVE TRANSMISSION CONTROL CABLE ASSEMBLY**

- (a) Remove the clip, and disconnect the cable end of the transmission control select cable from the floor shift lever.

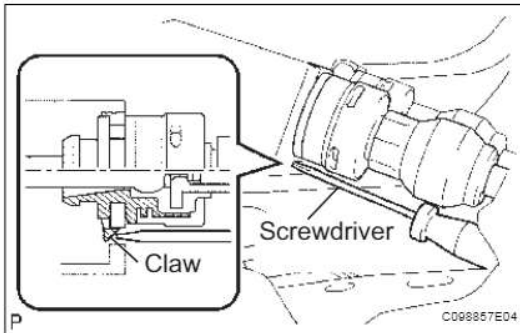


- (b) Using a screwdriver, detach the claw.
- (c) Disconnect the transmission control select cable from the shift lever retainer.

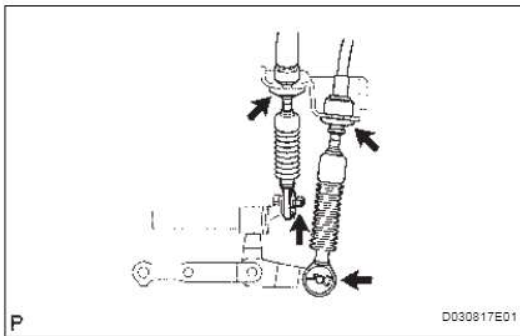
MX

C50 MANUAL TRANSAXLE – TRANSMISSION CONTROL CABLE**MX-13**

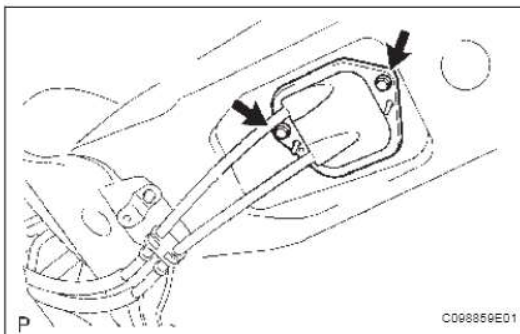
- (d) Remove the clip, and disconnect the cable end of the transmission control shift cable from the floor shift lever.



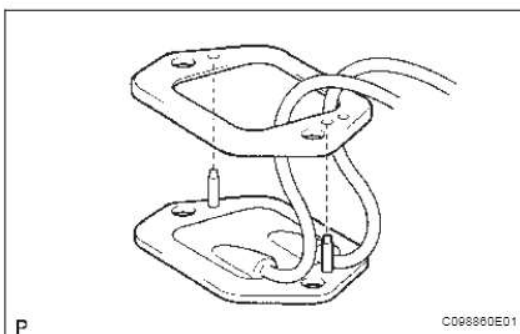
- (e) Using a screwdriver, detach the claw.
(f) Disconnect the transmission control shift cable from the shift lever retainer.



- (g) Remove the 2 clips and 2 washers, and disconnect the 2 cables from the manual transaxle.
(h) Remove the 2 clips, and disconnect the 2 cables from the control cable bracket.



- (i) Remove the 2 bolts and retainer from the floor.

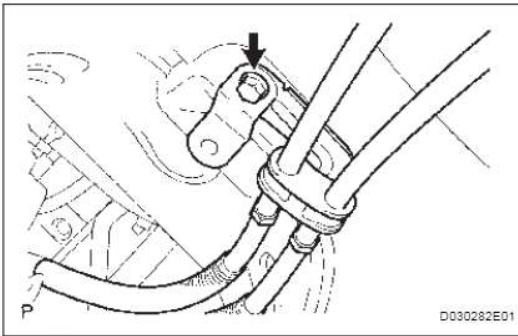


- (j) Remove the retainer from the grommet.
(k) Remove the transmission control select cable from the grommet.

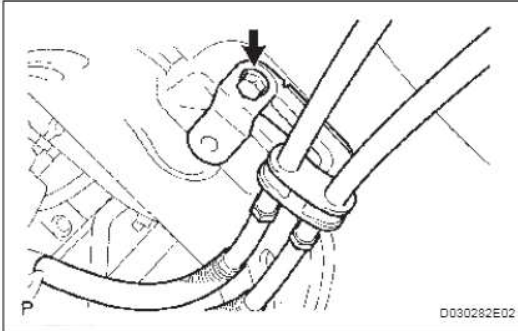
MX

MX-14

C50 MANUAL TRANSAXLE – TRANSMISSION CONTROL CABLE



- (l) Remove the bolt and clamp.
- (m) Pull out the transmission control select cable and transmission control shift cable through the floor hole.



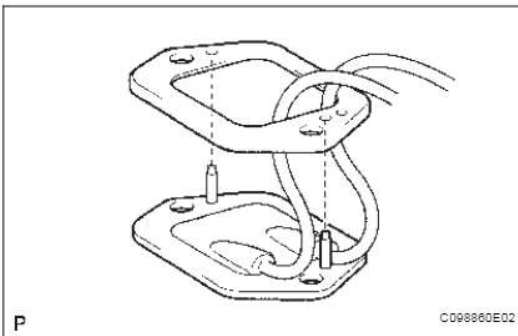
INSTALLATION

1. INSTALL TRANSMISSION CONTROL CABLE ASSEMBLY

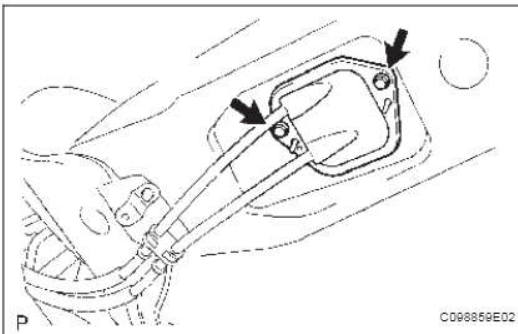
- (a) Install the clamp with the bolt.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)
- (b) Insert the transmission control select cable and transmission control shift cable through the floor hole and retainer.
- (c) Install the transmission control select cable to the grommet.
- (d) Install the retainer on the grommet.

NOTICE:

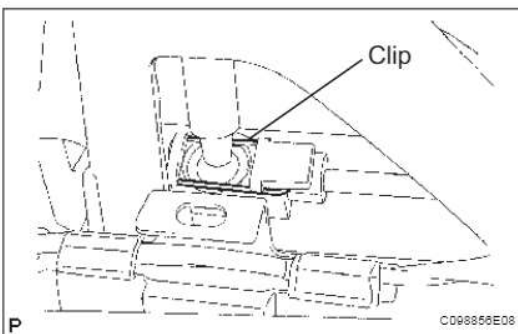
Fit the projections of the grommet into the holes of the retainer.

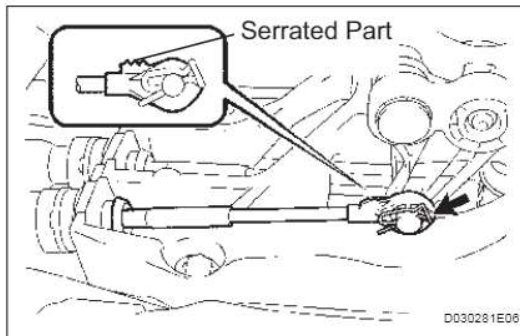


- (e) Install the retainer to the floor with the 2 bolts.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)
- (f) Connect the transmission control cable to the shift lever retainer.

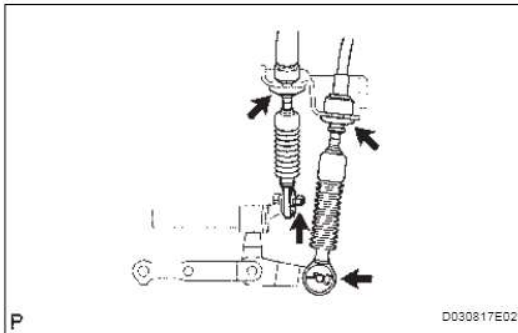


- (g) Connect the end of the transmission control shift cable to the floor shift lever with the clip.
- (h) Connect the transmission select cable to the shift lever retainer.

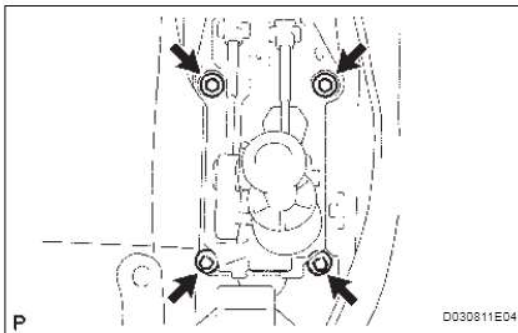


C50 MANUAL TRANSAXLE – TRANSMISSION CONTROL CABLE**MX-15**

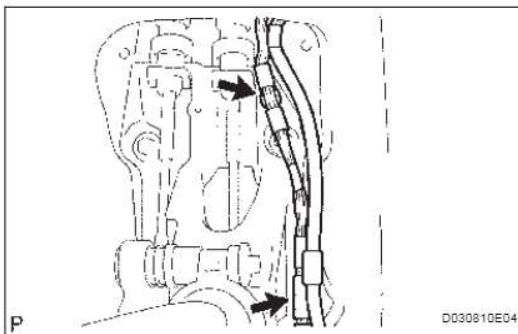
- (i) Connect the end of the transmission control select cable to the floor shift lever with the clip.
- The serrated part of the select cable point should face upward when the select cable point is connected.
 - The clip should be inserted in the direction shown in the illustration.



- (j) Connect the 2 cable ends to the transaxle with the 2 washers and 2 clips.
- (k) Install 2 new clips to the control cable bracket.

**2. INSTALL FLOOR SHIFT LEVER ASSEMBLY**

- (a) Install the floor shift lever with the 4 bolts.
Torque: 12 N*m (120 kgf*cm, 9 ft.*lbf)



- (b) Connect the wire harness.

3. INSTALL REAR CONSOLE BOX ASSEMBLY

- (a) Install the rear console box (see page [IP-27](#)).

4. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY

- (a) Install the shift lever knob (see page [IP-22](#)).

5. INSTALL FRONT NO.1 FLOOR HEAT INSULATOR

- Torque: 5.5 N*m (56 kgf*cm, 49 in.*lbf)

MX

MANUAL TRANSAXLE SYSTEM

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Manual transaxle system

Symptom	Suspected area	See page
Noise	1. Oil (Level low)	MX-2
	2. Oil (Wrong)	MX-2
	3. Input gear (Worn or damaged)	MX-68
	4. Output gear (Worn or damage)	MX-78
	5. Input gear bearing (Worn or damage)	MX-68
	6. Output gear bearing (Worn or damage)	MX-78
Oil leakage	1. Oil (Level too high)	MX-2
	2. Gasket (Damaged)	MX-20
	3. Oil seal (Worn or damaged)	MX-3
	4. O-Ring (Worn or damaged)	MX-20
Hard to shift or will not shift	1. Control cable (Faulty)	MX-12
	2. Input synchronizer ring (Worn or damaged)	MX-68
	3. Output synchronizer ring (Worn or damaged)	MX-78
	4. Input shift key spring (Damaged)	MX-68
	5. Output shift key spring (Damaged)	MX-78
Jumps out of gear	1. Locking ball spring (Damage)	MX-20
	2. Shift fork (Worn)	MX-20
	3. Input gear (Worn or damaged)	MX-68
	4. Output gear (Worn or damaged)	MX-78
	5. Input bearing (Worn or damaged)	MX-68
	6. Output bearing (Worn or damaged)	MX-78

MX

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. REMOVE FRONT WHEEL

3. REMOVE ENGINE UNDER COVER LH

4. REMOVE ENGINE UNDER COVER RH

5. DRAIN TRANSAXLE OIL

- Remove the filler plug and gasket.
- Remove the drain plug and gasket, and drain the manual transaxle oil.
- Install a new gasket and the drain plug.

6. REMOVE ENGINE HOOD SUB-ASSEMBLY

7. REMOVE COWL TOP PANEL OUTER (See page [SP-11](#))

8. REMOVE NO. 2 CYLINDER HEAD COVER

9. REMOVE AIR CLEANER ASSEMBLY

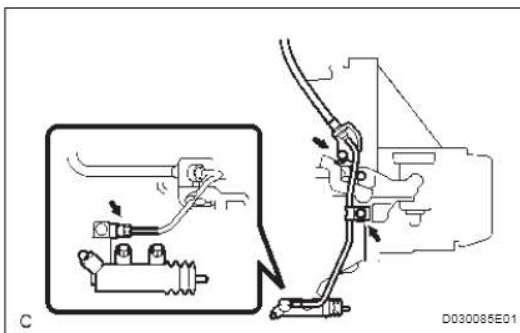
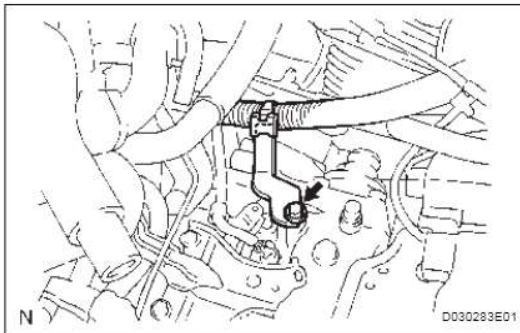
10. REMOVE BATTERY

11. DISCONNECT WIRE HARNESS

- Remove the bolt and disconnect the wire harness clamp.

12. DISCONNECT CONNECTOR

- Disconnect the back-up light switch connector.



13. DISCONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE

- Using SST, disconnect the flexible hose tube from the clutch release cylinder.

SST 09023-00101

HINT:

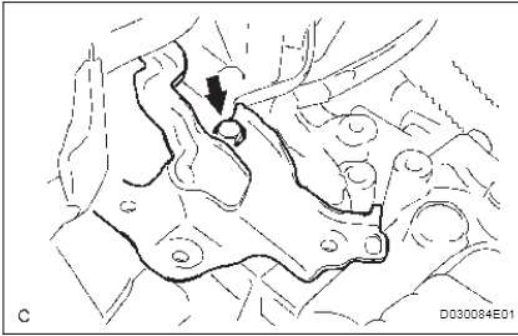
Use a container to catch the fluid.

- Remove the 2 bolts and disconnect the flexible hose tube.

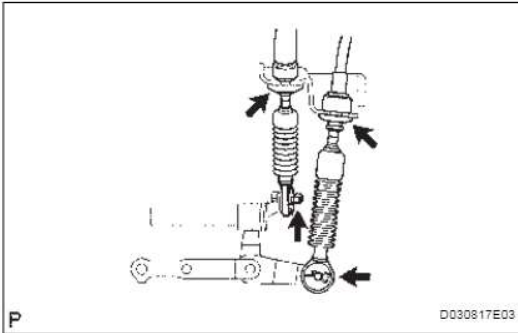
MX

MX-22

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY

**14. REMOVE AIR CLEANER BRACKET**

- (a) Remove the bolt and air cleaner bracket.

**15. DISCONNECT TRANSMISSION CONTROL CABLE ASSEMBLY**

- (a) Remove the 2 clips and 2 washers, and disconnect the 2 cables from the transaxle.
 (b) Remove the 2 clips, and disconnect the 2 cables from the control cable bracket.

16. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH

- (a) Remove the front drive shaft (see page [DS-4](#)).

17. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH

HINT:

Remove the RH side by the same procedures as the LH side.

18. REMOVE FRONT FLOOR PANEL BRACE (See page [EX-3](#))**19. REMOVE FRONT EXHAUST PIPE ASSEMBLY (See page [EX-3](#))****20. SUSPEND ENGINE ASSEMBLY**

- (a) Install the 2 hangers in the correct direction.
 (b) Attach the engine chain hoist to the hangers.

Engine hanger:

Parts No. 12281-21010

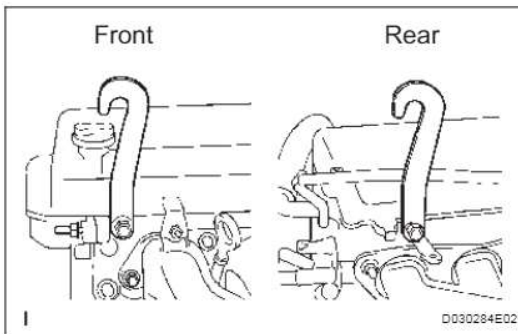
Bolt:

Parts No. 91642-81025

Torque: 40 N*m (408 kgf*cm, 29 ft.*lbf)

CAUTION:

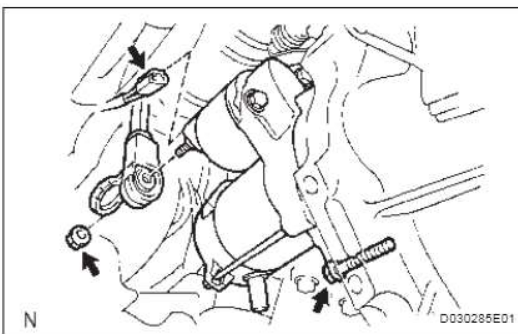
Do not attempt to hang the engine by hooking the chain to any other part.

**21. REMOVE FRONT SUSPENSION CROSSMEMBER SUB-ASSEMBLY (See page [PS-21](#))****22. REMOVE STARTER ASSEMBLY**

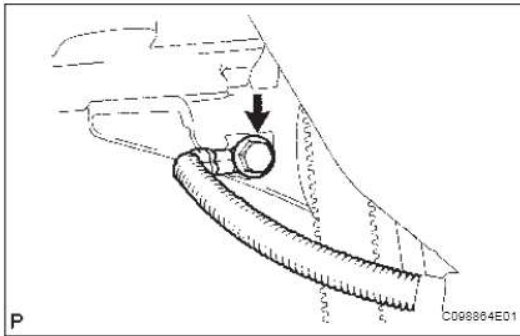
- (a) Remove the flywheel housing side cover.
 (b) Remove the nut and disconnect the starter wire.
 (c) Disconnect the connector.
 (d) Remove the 2 bolts and starter.

23. SUPPORT MANUAL TRANSAXLE ASSEMBLY

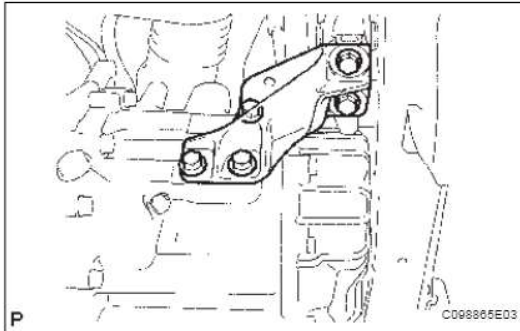
- (a) Support the transaxle with a transmission jack.



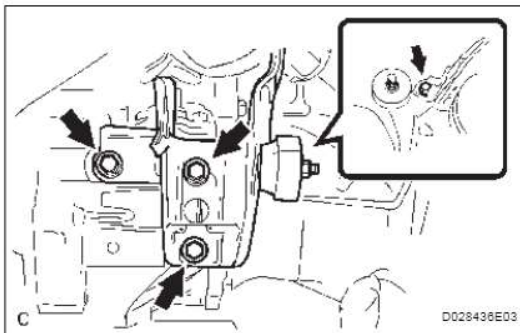
MX

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY**MX-23****24. REMOVE ENGINE MOUNTING BRACKET LH**

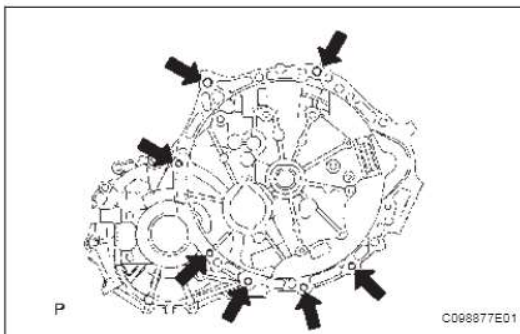
- (a) Remove the bolt and disconnect the ground cable.



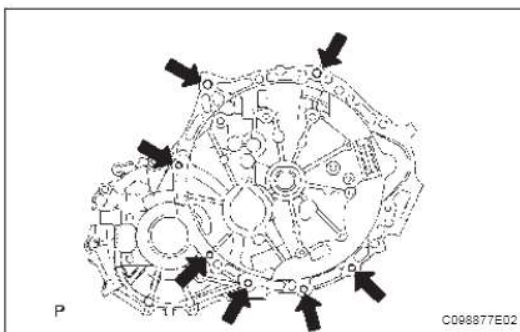
- (b) Remove the 2 bolts, and disconnect the engine mounting bracket LH from the engine mounting insulator LH.
 (c) Remove the 3 bolts and engine mounting bracket LH from the transaxle.

**25. REMOVE REAR ENGINE MOUNTING BRACKET**

- (a) Remove the 4 bolts and rear engine mounting bracket from the transaxle.

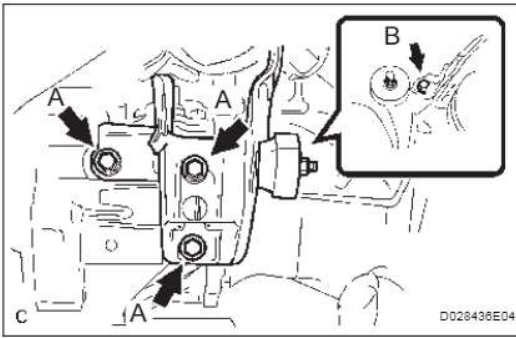
**26. REMOVE MANUAL TRANSAXLE ASSEMBLY**

- (a) Remove the 7 bolts and transaxle from the engine.

**INSTALLATION****1. INSTALL MANUAL TRANSAXLE ASSEMBLY**

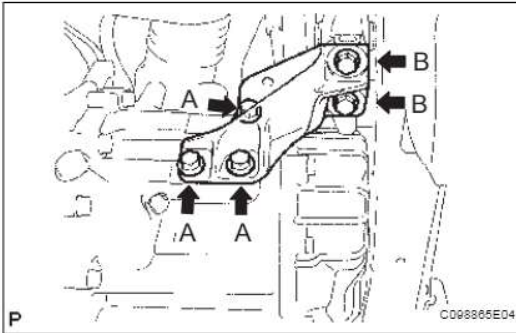
- (a) Align the input shaft with the clutch disc and install the transaxle to the engine.
 (b) Install the 7 bolts.
Torque: 33 N*m (340 kgf*cm, 24 ft.*lbf)

MX

MX-24**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY****2. INSTALL REAR ENGINE MOUNTING BRACKET**

- (a) Install the rear engine mounting bracket to the transaxle with the 4 bolts.

Torque: 64 N*m (653 kgf*cm, 47 ft.*lbf) for bolt A
18 N*m (180 kgf*cm, 13 ft.*lbf) for bolt B

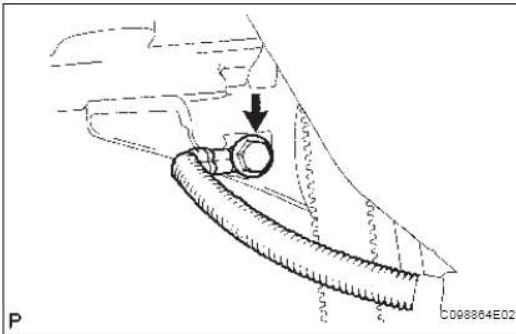
**3. INSTALL ENGINE MOUNTING BRACKET LH**

- (a) Install the engine mounting bracket LH to the transaxle with the 3 bolts.

Torque: 64 N*m (653 kgf*cm, 47 ft.*lbf) for bolt A

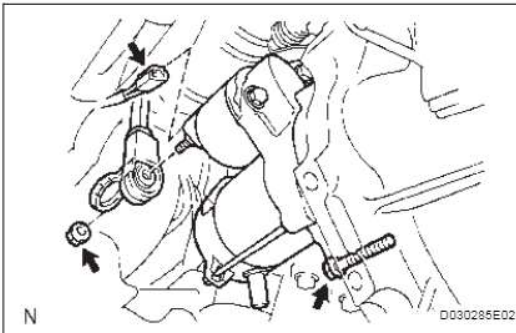
- (b) Connect the engine mounting bracket LH to the engine mounting insulator with the 2 bolts.

Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf) for bolt B



- (c) Install the ground cable to the engine mounting bracket with the bolt.

Torque: 26 N*m (260 kgf*cm, 19 ft.*lbf)

**4. INSTALL STARTER ASSEMBLY**

- (a) Install the starter with the 2 bolts.

Torque: 37 N*m (380 kgf*cm, 27 ft.*lbf)

- (b) Connect the starter connector.

- (c) Install the wire with the nut.

Torque: 9.8 N*m (100 kgf*cm, 87 in.*lbf)

- (d) Install the flywheel housing side cover.

5. INSTALL FRONT SUSPENSION CROSSMEMBER SUB-ASSEMBLY (See page [PS-32](#))**6. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH**

- (a) Install the front drive shaft (see page [DS-13](#)).

7. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH**HINT:**

Install the RH side by the same procedures as the LH side.

8. INSTALL FRONT AXLE ASSEMBLY LH

- (a) Install the front axle (see page [DS-13](#)).

MX

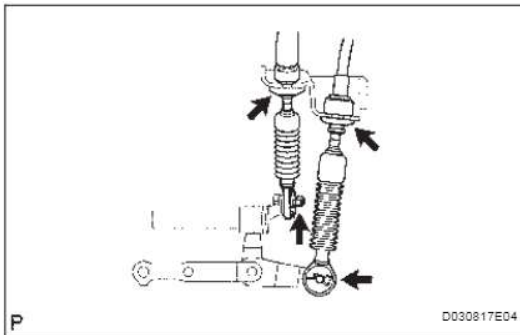
9. INSTALL FRONT AXLE ASSEMBLY RH

HINT:

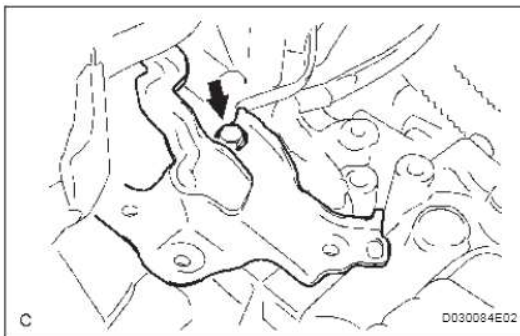
Install the RH side by the same procedures as the LH side.

10. INSTALL FRONT EXHAUST PIPE ASSEMBLY (See page EX-5)**11. INSTALL FRONT FLOOR PANEL BRACE (See page EX-7)****12. CONNECT TRANSMISSION CONTROL CABLE ASSEMBLY**

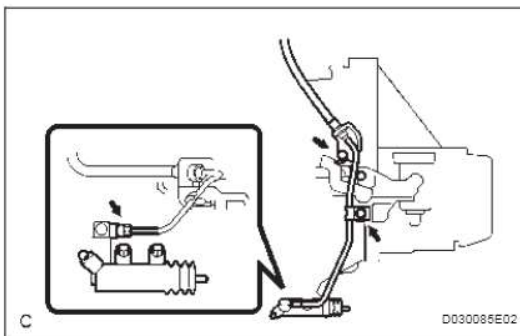
- (a) Connect the 2 cable ends to the transaxle with the 2 washers and 2 clips.
- (b) Install 2 new clips to the control cable bracket.

**13. INSTALL AIR CLEANER BRACKET**

- (a) Install the air cleaner bracket with the bolt.
Torque: 19 N*m (195 kgf*cm, 14 ft.*lbf)

**14. CONNECT CLUTCH RELEASE CYLINDER TO FLEXIBLE HOSE TUBE**

- (a) Using SST, connect the flexible hose tube.
SST 09023-00101
Torque: 15 N*m (155 kgf*cm, 11 ft.*lbf)
- (b) Connect the flexible hose tube with the 2 bolts.
Torque: 19 N*m (195 kgf*cm, 14 ft.*lbf)

**15. CONNECT CONNECTOR**

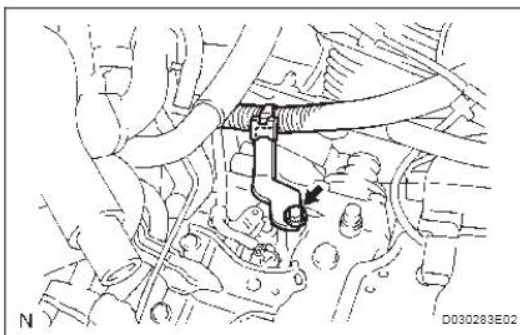
- (a) Connect the back-up light switch connector.

16. CONNECT WIRE HARNESS

- (a) Connect the wire harness clamp with the bolt.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

17. INSTALL BATTERY**18. INSTALL AIR CLEANER ASSEMBLY****19. INSTALL NO. 2 CYLINDER HEAD COVER**

Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)

20. INSTALL COWL TOP PANEL OUTER (See page SP-14)**21. INSTALL HOOD SUB-ASSEMBLY (See page ED-1)**

MX

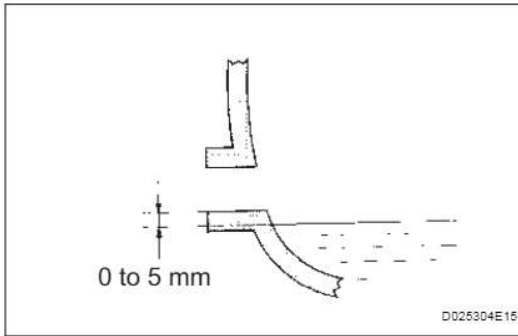
MX-26**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY**

22. **INSPECT HOOD SUB-ASSEMBLY** (See page [ED-1](#))
23. **ADJUST HOOD SUB-ASSEMBLY** (See page [ED-1](#))
24. **INSTALL FRONT WHEEL**
Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)
25. **ADD TRANSAXLE OIL** (See page [MX-4](#))
26. **INSPECT AND ADJUST TRANSAXLE OIL** (See page [MX-2](#))
27. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
28. **PERFORM INITIALIZATION**
 - (a) Perform initialization (see page [IN-23](#)).
NOTICE:
Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.
29. **INSTALL ENGINE UNDER COVER RH**
30. **INSTALL ENGINE UNDER COVER LH**
31. **INSPECT FRONT WHEEL ALIGNMENT**
 - (a) Inspect the front wheel alignment (see page [SP-2](#)).
32. **CHECK ABS SPEED SENSOR SIGNAL**
 - (a) Check the ABS speed sensor signal (see page [RS-34](#)).
33. **CHECK FOR EXHAUST GAS LEAKS**

MX

MX-2

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE OIL



MANUAL TRANSAXLE OIL

ON-VEHICLE INSPECTION

1. INSPECT TRANSAXLE OIL

- Stop the vehicle on a level surface.
- Remove the filler plug and gasket.
- Check that the oil level is between 0 to 5 mm (0 to 0.20 in.) from the bottom lip of the filler plug opening.

If the result is not as specified, add transaxle oil.

Oil grade:

API GL-4 or GL-5

Viscosity:

SAE 75W- 90

Standard capacity:

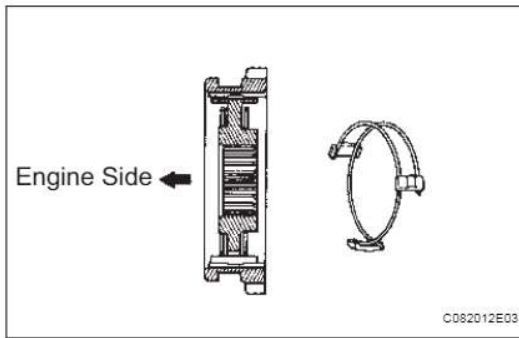
1.9 liters (2.0 US qts, 1.7 Imp. qts)

NOTICE:

- Too much or too little oil will lead to transaxle problems.
 - After adjusting the oil level, drive the vehicle and check the oil level again.
- Check for oil leakage when the oil level is low. If leakage is found, repair the area necessary to stop the leak. Replace damaged parts as necessary.
 - Install a new gasket and the filler plug.
Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)

MX-84

C50 MANUAL TRANSAXLE – OUTPUT SHAFT

**REASSEMBLY****1. INSTALL REVERSE GEAR**

- (a) Coat the reverse gear with gear oil, and install it to the No. 1 transmission clutch hub.

NOTICE:

Be sure to set the reverse gear and transmission clutch hub No.1 in the correct orientation.

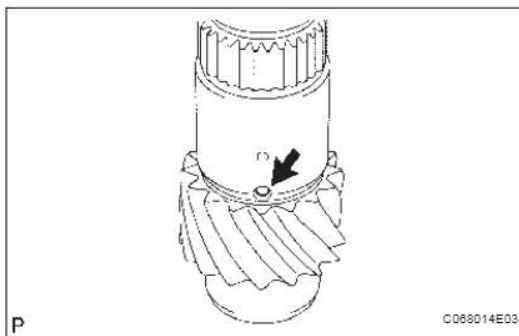
- (b) Install the 2 No. 1 synchromesh shifting key springs and 3 No. 1 synchromesh shifting keys to the No. 1 transmission clutch hub.

NOTICE:

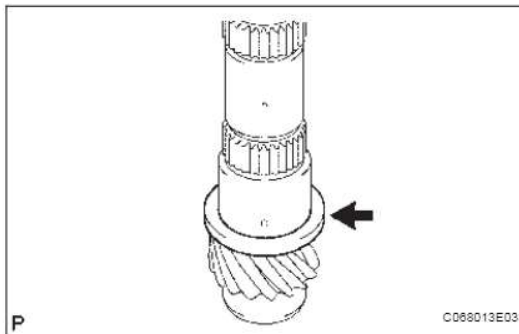
Do not set both openings of the shifting key springs in the same position.

2. INSTALL 1ST GEAR THRUST WASHER BALL

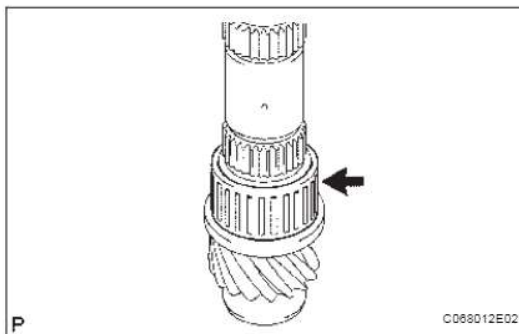
- (a) Coat the 1st gear thrust washer ball with MP grease, and install it to the output shaft.

**3. INSTALL 1ST GEAR THRUST WASHER**

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

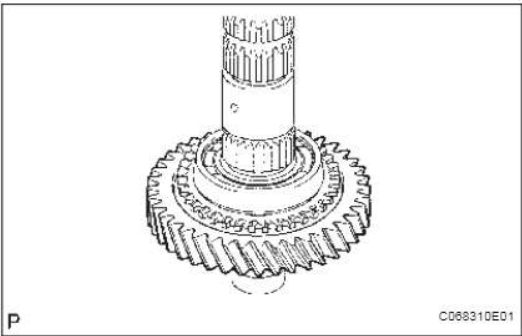
**4. INSTALL 1ST GEAR NEEDLE ROLLER BEARING**

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

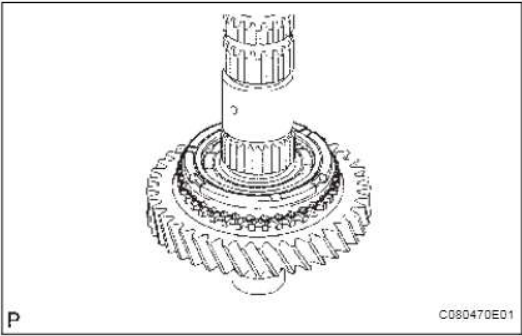


MX

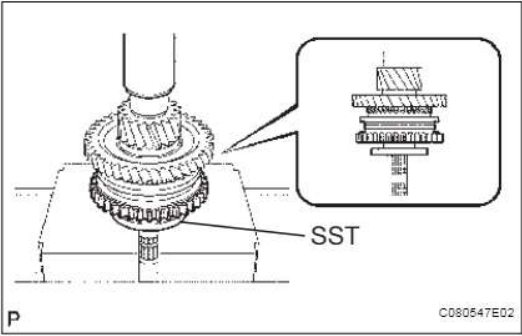
C50 MANUAL TRANSAXLE – OUTPUT SHAFT



5. **INSTALL 1ST GEAR**
- (a) Coat the 1st gear with gear oil, and install it to the output shaft.

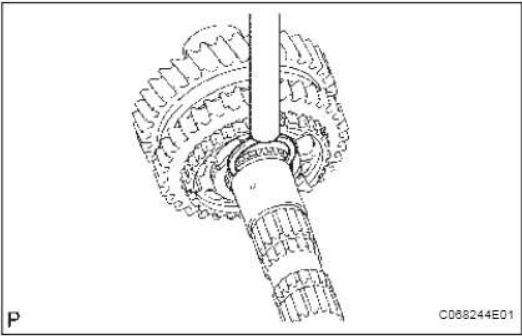


6. **INSTALL NO. 1 SYNCHRONIZER RING (for 1st Gear)**
- (a) Coat the No. 1 synchronizer ring with gear oil, and install it to the 1st gear.



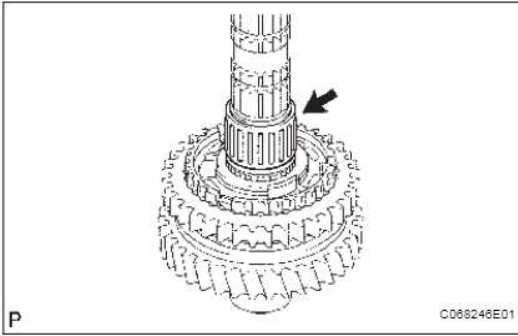
7. **INSTALL NO. 1 TRANSMISSION CLUTCH HUB**
- (a) Using SST and a press, press in the No. 1 transmission clutch hub to the output shaft.
SST 09316-60011 (09316-00031)
HINT:
- The 1st gear can be turned.
 - While checking that the 1st gear thrust washer pin or ball is inserted into the groove of the 1st gear thrust washer, press and fit the No. 1 clutch hub.
- (b) Select a 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	2.50 (0.0984)
B	2.56 (0.1008)
C	2.62 (0.1031)
D	2.68 (0.1055)
E	2.74 (0.1079)
F	2.80 (0.1102)

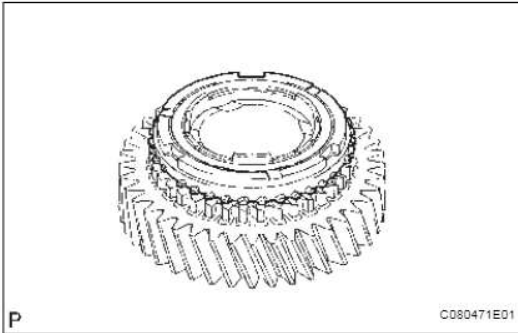


- (c) Using a brass bar and hammer, tap in the snap ring to the output shaft.
NOTICE:
Take care not to damage the journal surface of the output shaft.

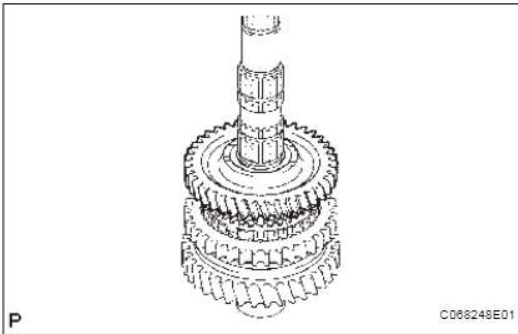
MX

MX-86**C50 MANUAL TRANSAXLE – OUTPUT SHAFT****8. INSTALL 2ND GEAR NEEDLE ROLLER BEARING**

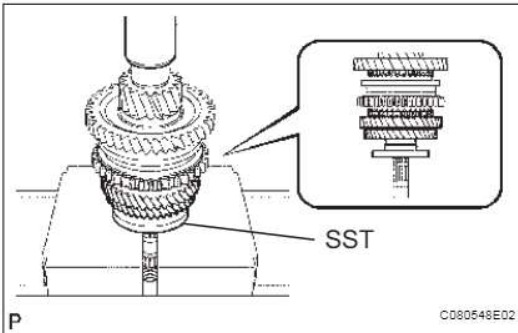
- (a) Coat the 2nd gear needle roller bearing and 2nd gear bearing spacer with gear oil, and install them to the output shaft.

**9. INSTALL NO. 1 SYNCHRONIZER RING**

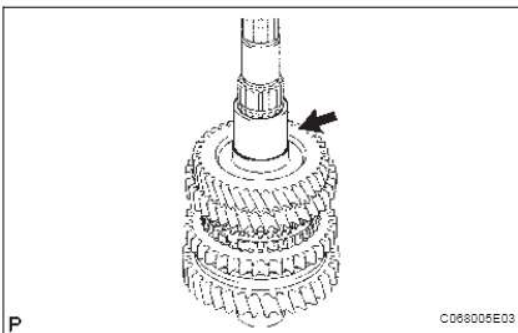
- (a) Coat the No. 1 synchronizer ring with gear oil, and install it to the 2nd gear.

**10. INSTALL 2ND GEAR**

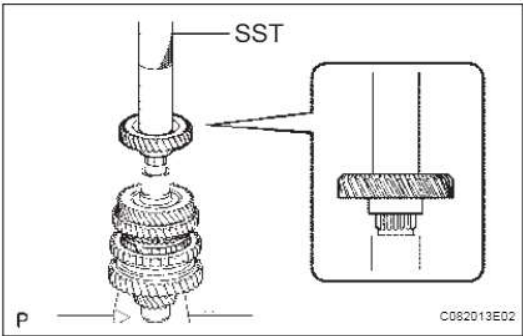
- (a) Coat the 2nd gear with gear oil, and install it to the output shaft.

**11. INSTALL 3RD DRIVEN GEAR**

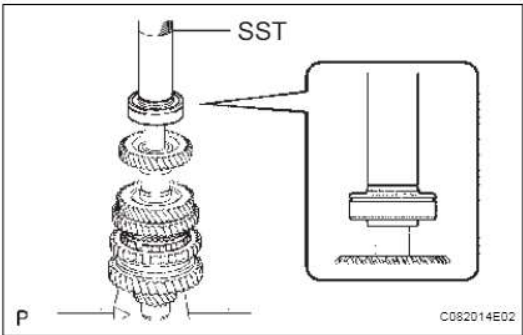
- (a) Using SST and a press, press in the 3rd driven gear to the output shaft.
SST 09950-00020

**12. INSTALL OUTPUT GEAR SPACER**

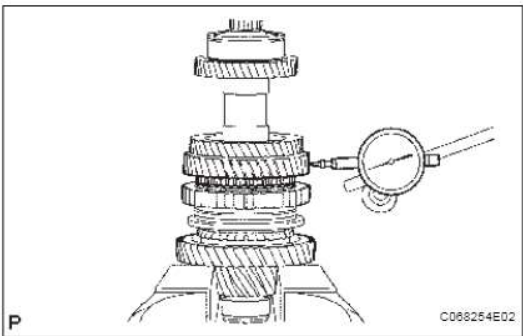
- (a) Install the output gear spacer to the output shaft.



- 13. INSTALL 4TH DRIVEN GEAR**
- (a) Using SST and a press, press in the 4th driven gear to the output shaft.
SST 09612-22011



- 14. INSTALL INPUT SHAFT REAR RADIAL BALL BEARING**
- (a) Using SST and a press, press in the output shaft rear bearing to the output shaft.
SST 09612-22011



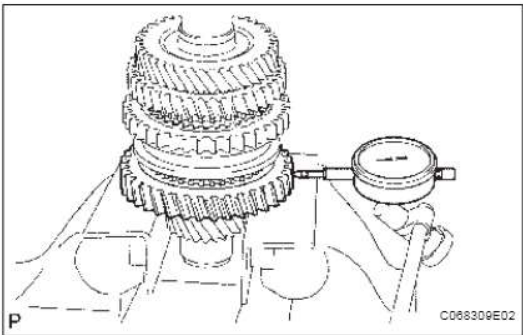
- 15. INSPECT 2ND GEAR RADIAL CLEARANCE**
- (a) Using a dial indicator, measure the radial clearance.
Standard clearance

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 2nd gear or needle roller bearing.



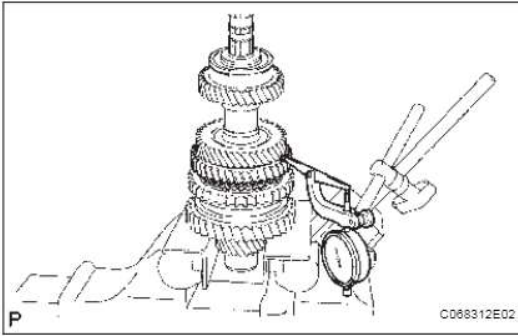
- 16. INSPECT 1ST GEAR RADIAL CLEARANCE**
- (a) Using a dial indicator, measure the radial clearance.
Standard clearance

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 1st gear or needle roller bearing.

MX-88**C50 MANUAL TRANSAXLE – OUTPUT SHAFT****17. INSPECT 2ND GEAR THRUST CLEARANCE**

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

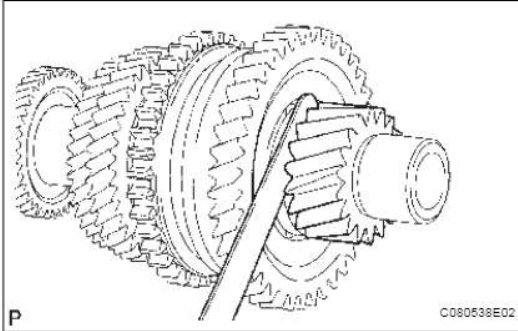
Standard clearance:

0.10 to 0.45 mm (0.0039 to 0.0177 in.)

Maximum clearance:

0.45 mm (0.0177 in.)

If the clearance is greater than the maximum, replace the 2nd gear or 2nd gear bearing spacer.

**18. INSPECT 1ST GEAR THRUST CLEARANCE**

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

Standard clearance:

0.10 to 0.40 mm (0.0039 to 0.0157 in.)

Maximum clearance:

0.40 mm (0.0157 in.)

If the clearance is greater than the maximum, replace the 1st gear, 1st gear thrust washer or No. 1 transmission clutch hub.

DIFFERENTIAL OIL SEAL

REPLACEMENT

1. DRAIN MANUAL TRANSAXLE OIL

- Remove the filler plug and gasket.
- Remove the drain plug and gasket, and drain the manual transaxle oil.
- Install a new gasket and the drain plug.
Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)

2. REMOVE FRONT WHEEL

3. REMOVE ENGINE UNDER COVER LH

4. REMOVE ENGINE UNDER COVER RH

5. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH

- Remove the front drive shaft (see page [DS-4](#)).

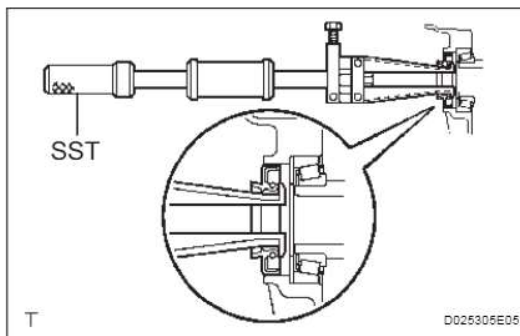
6. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH

HINT:

Install the RH side by the same procedures as the LH side.

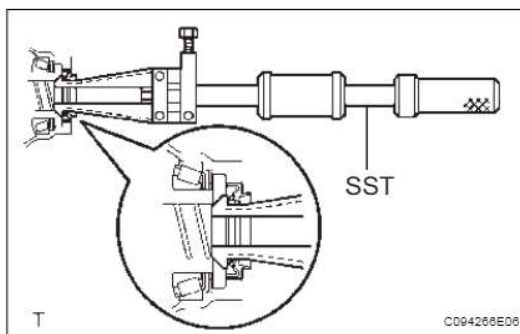
7. REMOVE TRANSMISSION CASE OIL SEAL

- Using SST, tap out the oil seal.
SST 09308-00010



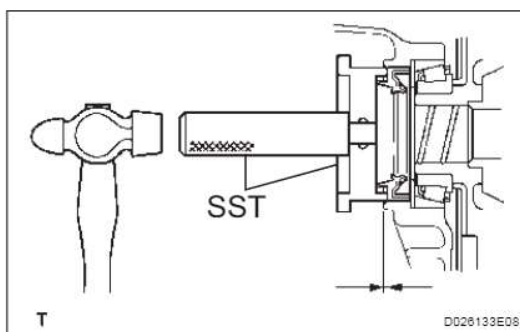
8. REMOVE TRANSAXLE CASE OIL SEAL

- Using SST, tap out the oil seal.
SST 09308-00010

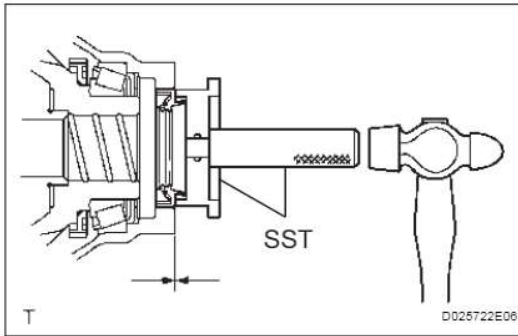


9. INSTALL TRANSMISSION CASE OIL SEAL

- Coat the lip of a new oil seal with MP grease.
- Using SST and a hammer, tap in the new oil seal.
SST 09726-36010, 09950-70010 (09951-07200)
Standard depth:
2.4 +0.3 mm (0.095 +0.012 in.)
NOTICE:
Be careful not to damage the lip of the oil seal.



MX

MX-4**C50 MANUAL TRANSAXLE – DIFFERENTIAL OIL SEAL****10. INSTALL FRONT TRANSAXLE CASE OIL SEAL**

- (a) Coat the lip of a new oil seal with MP grease.
- (b) Using SST and a hammer, tap in the new oil seal.

SST 09710-20011 (09710-06071), 09950-70010 (09951-07200)

Standard depth:

1.9 +-0.3 mm (0.075 +-0.012 in.)

NOTICE:

Be careful not to damage the lip of the oil seal.

11. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH

- (a) Install the front drive shaft (see page [DS-13](#)).

12. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH

HINT:

Install the RH side by the same procedures as the LH side.

13. INSTALL FRONT AXLE ASSEMBLY LH

- (a) Install the front axle (see page [AH-9](#)).

14. INSTALL FRONT AXLE ASSEMBLY RH

HINT:

Install the RH side by the same procedures as the LH side.

15. INSTALL FRONT WHEEL

Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)

16. ADD MANUAL TRANSAXLE OIL

Oil grade:

API GL-4 or GL-5

Viscosity:

SAE 75W-90

Standard capacity:

1.9 liters (2.0 US qts, 1.7 Imp. qts)

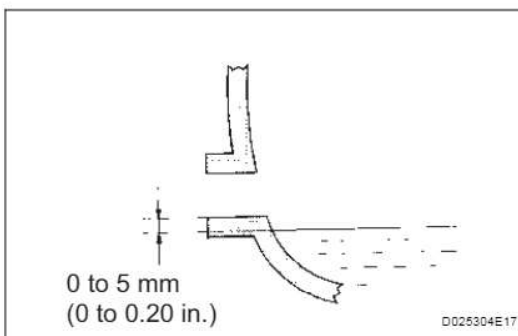
Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)

17. CHECK MANUAL TRANSAXLE OIL (See page [MX-2](#))**18. CHECK FRONT WHEEL ALIGNMENT**

- (a) Check the front wheel alignment (see page [SP-2](#)).

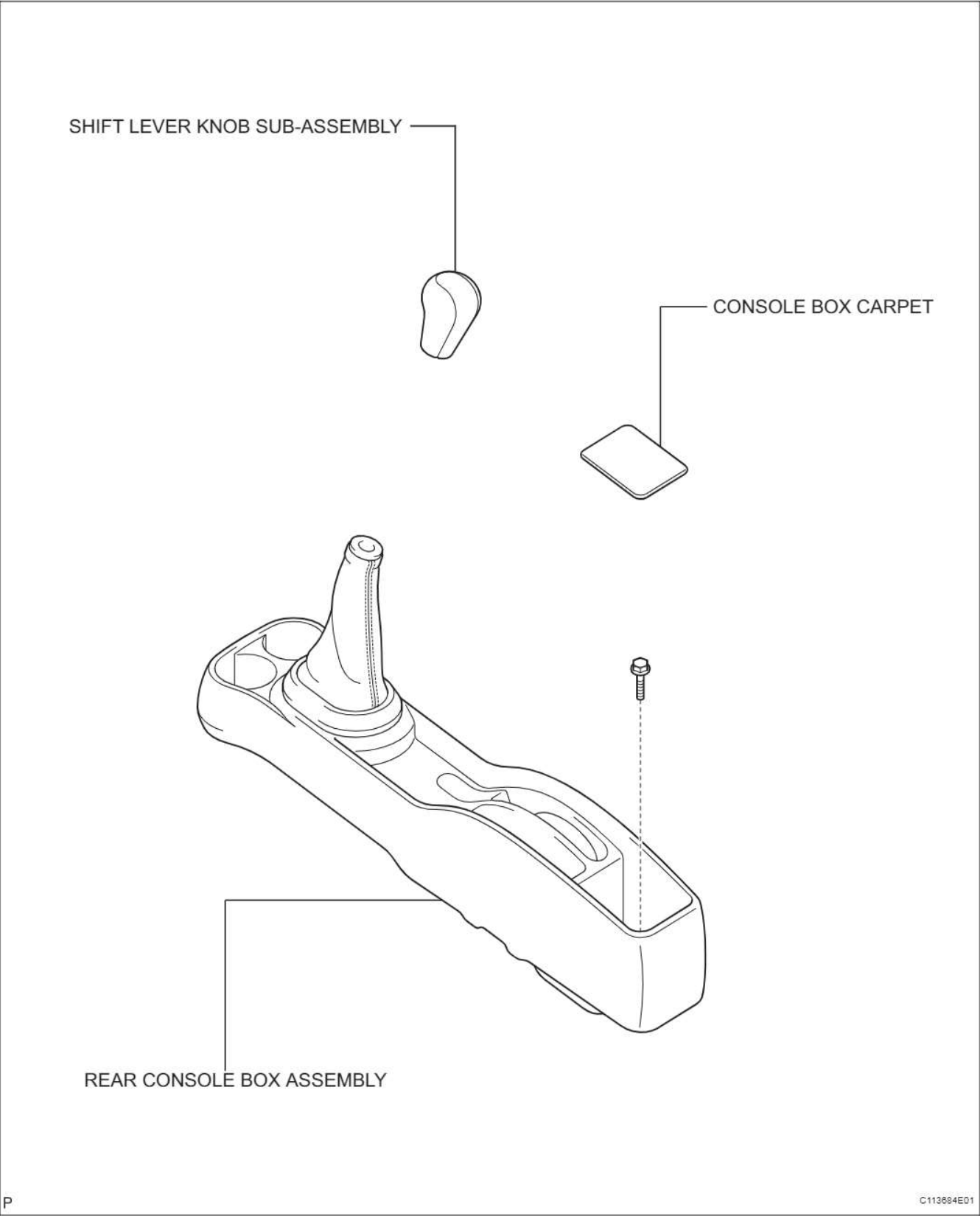
19. CHECK ABS SPEED SENSOR SIGNAL

[RS-34](#)



FLOOR SHIFT LEVER ASSEMBLY

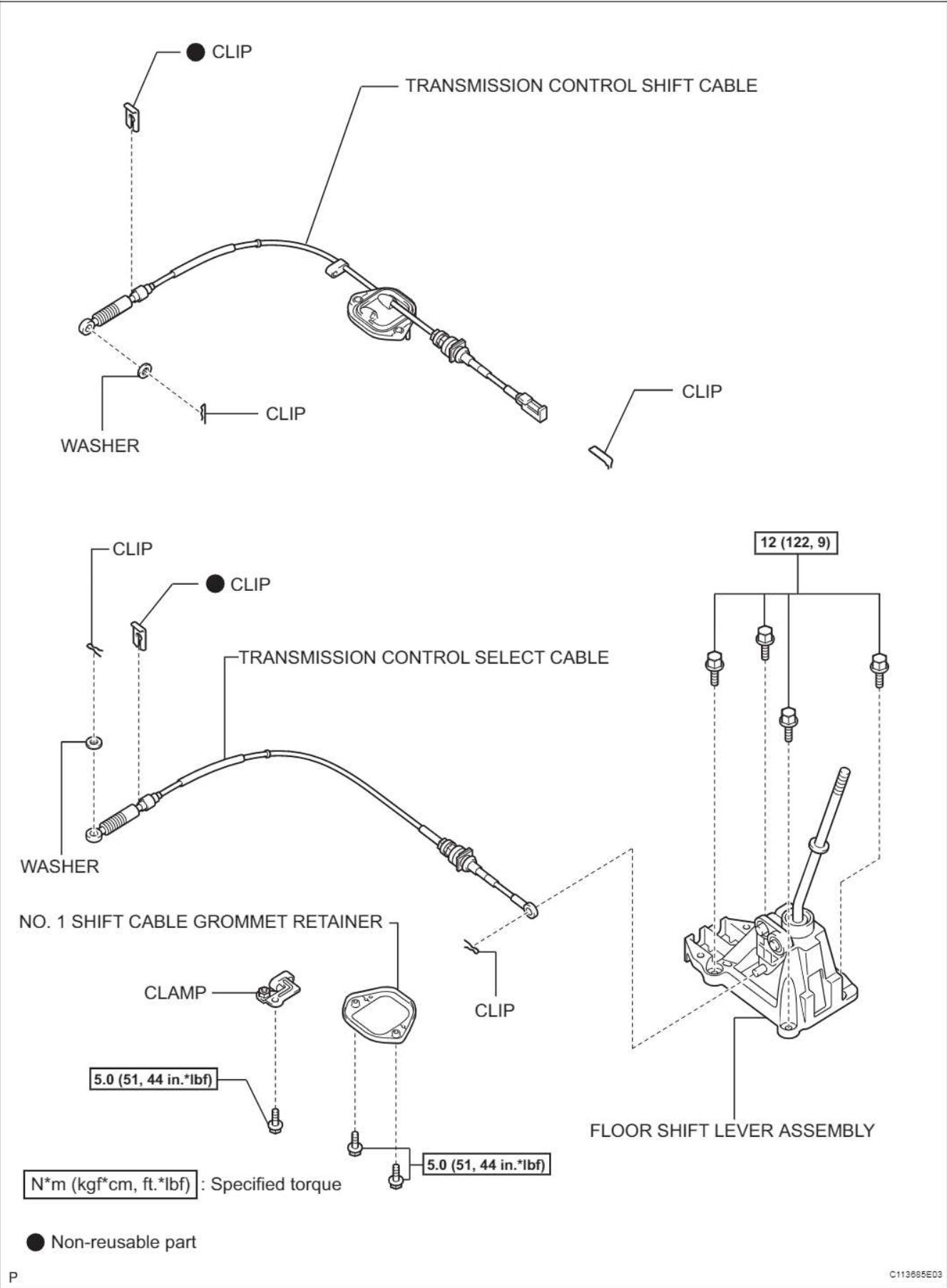
COMPONENTS



MX

MX-6

C50 MANUAL TRANSAXLE – FLOOR SHIFT LEVER ASSEMBLY

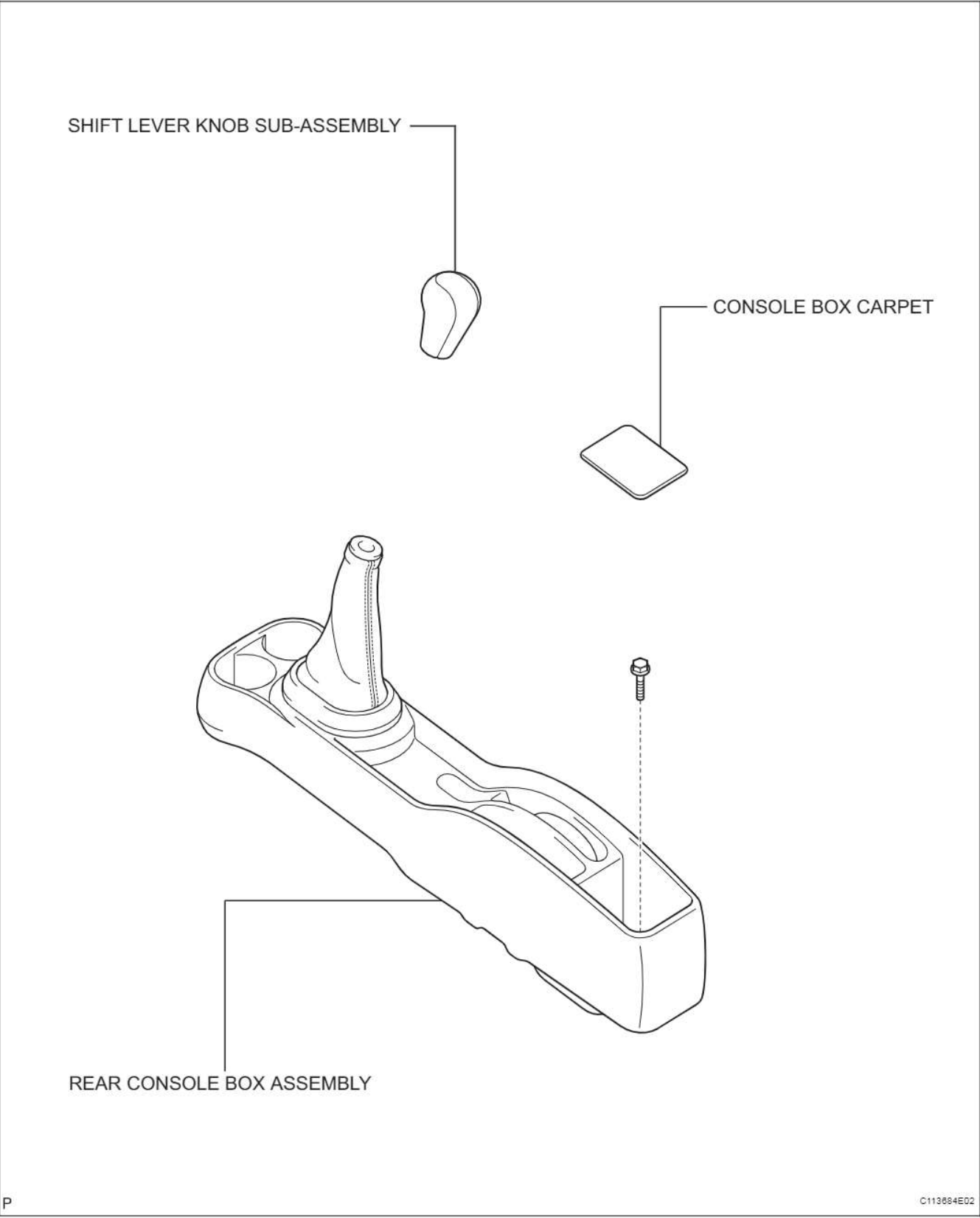


MX-10

C50 MANUAL TRANSAXLE – TRANSMISSION CONTROL CABLE

TRANSMISSION CONTROL CABLE

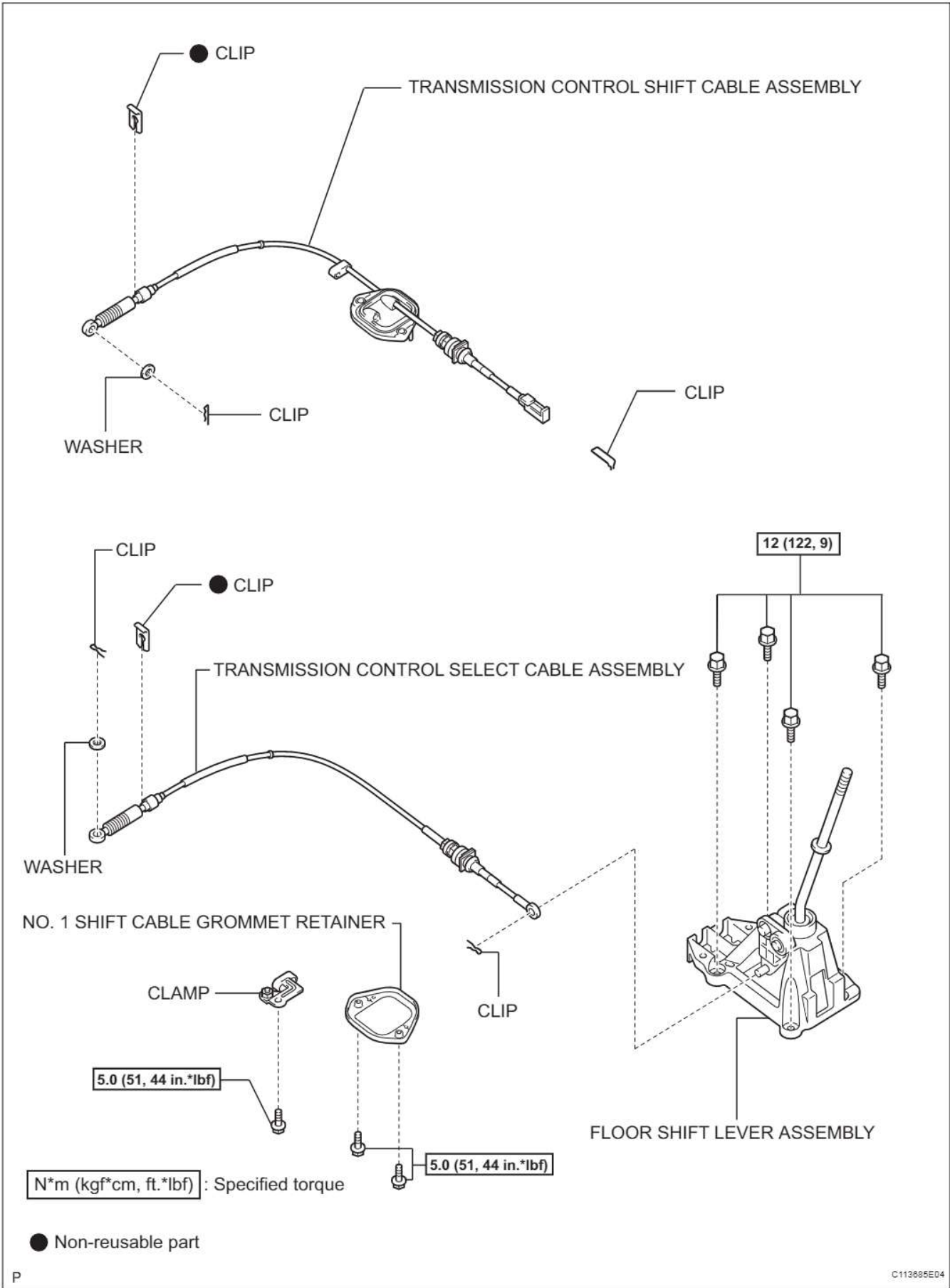
COMPONENTS



MX

C50 MANUAL TRANSAXLE – TRANSMISSION CONTROL CABLE

MX-11

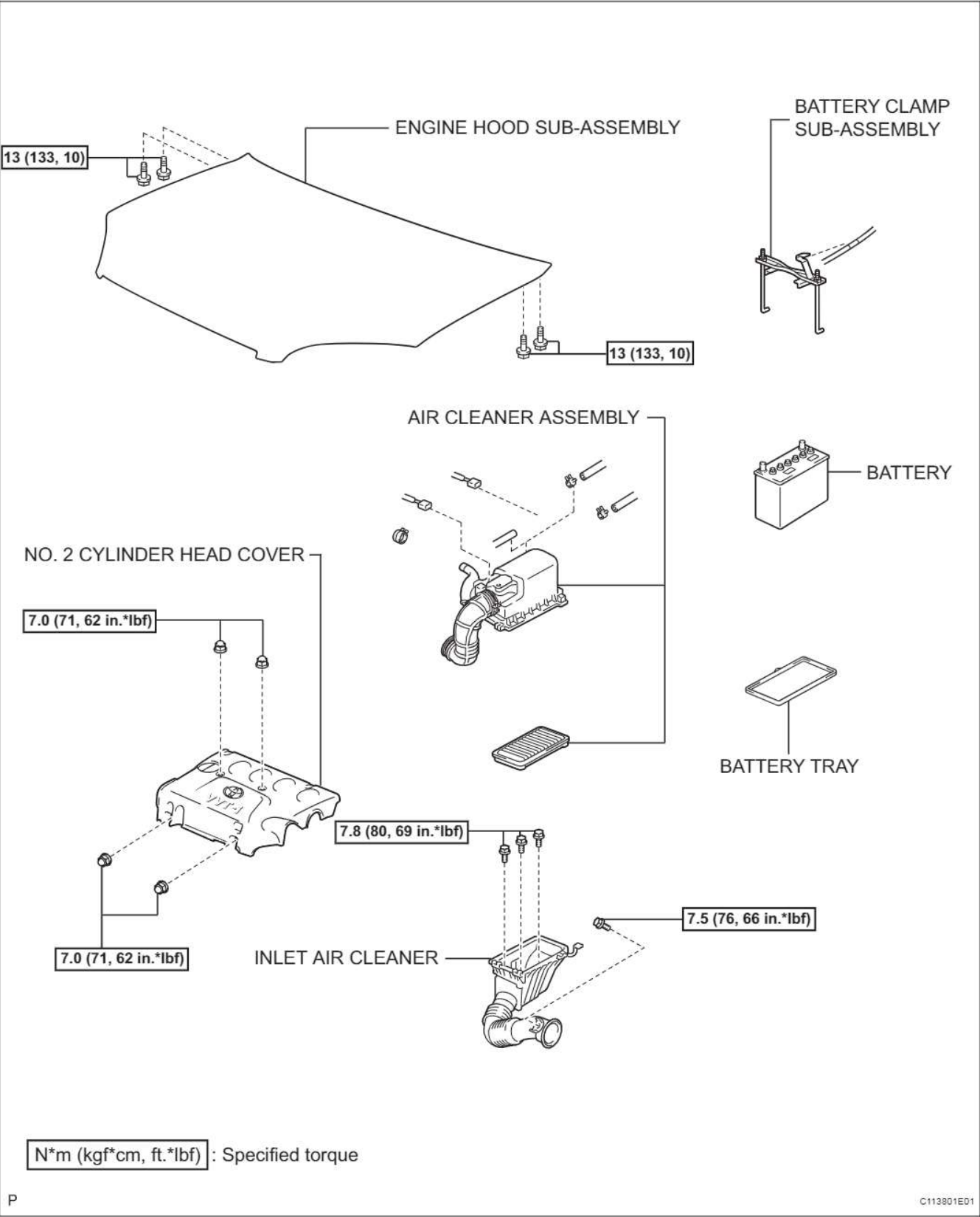


MX

MX-16

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY

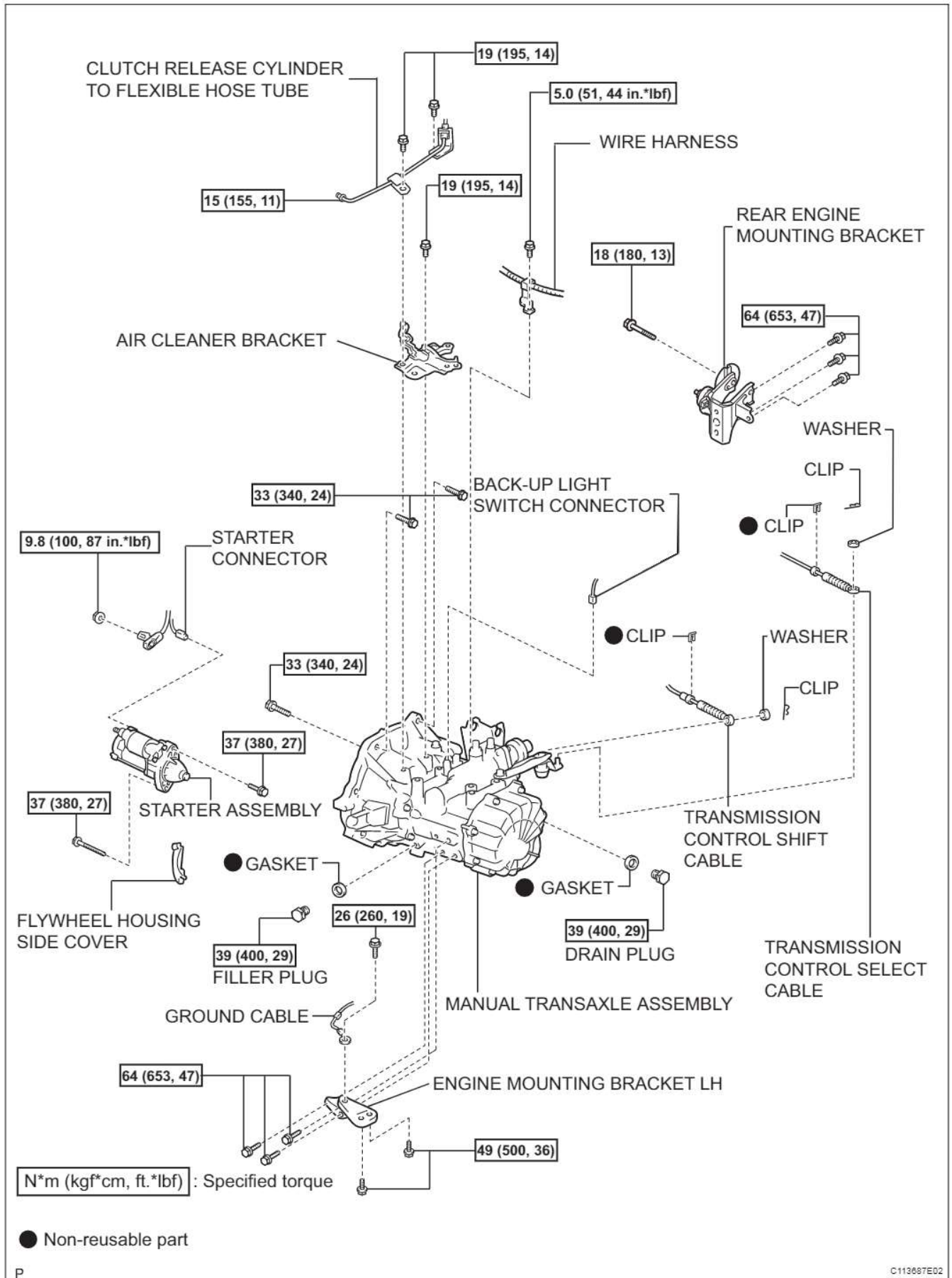
MANUAL TRANSAXLE ASSEMBLY
COMPONENTS



MX

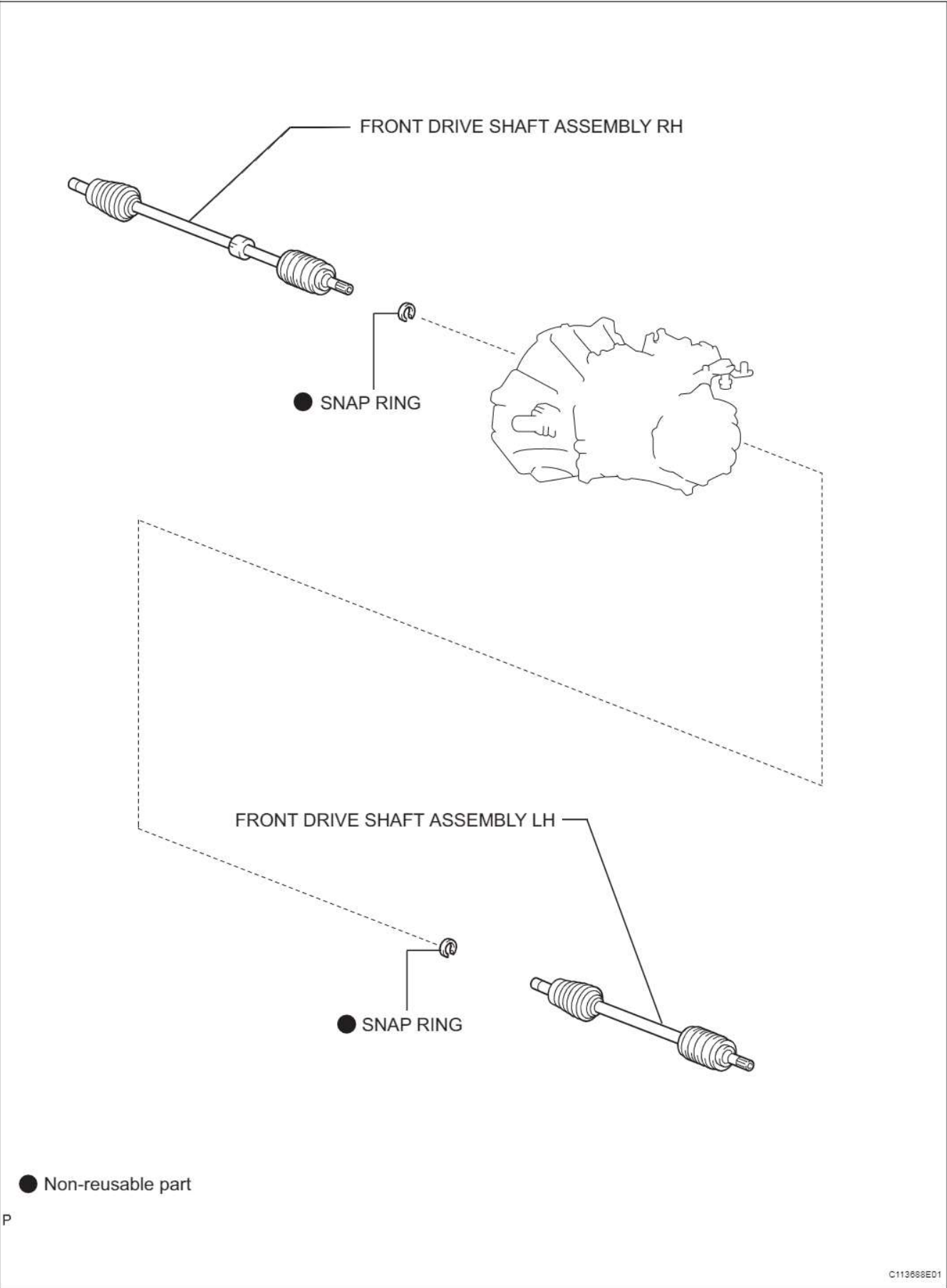
C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY

MX-17



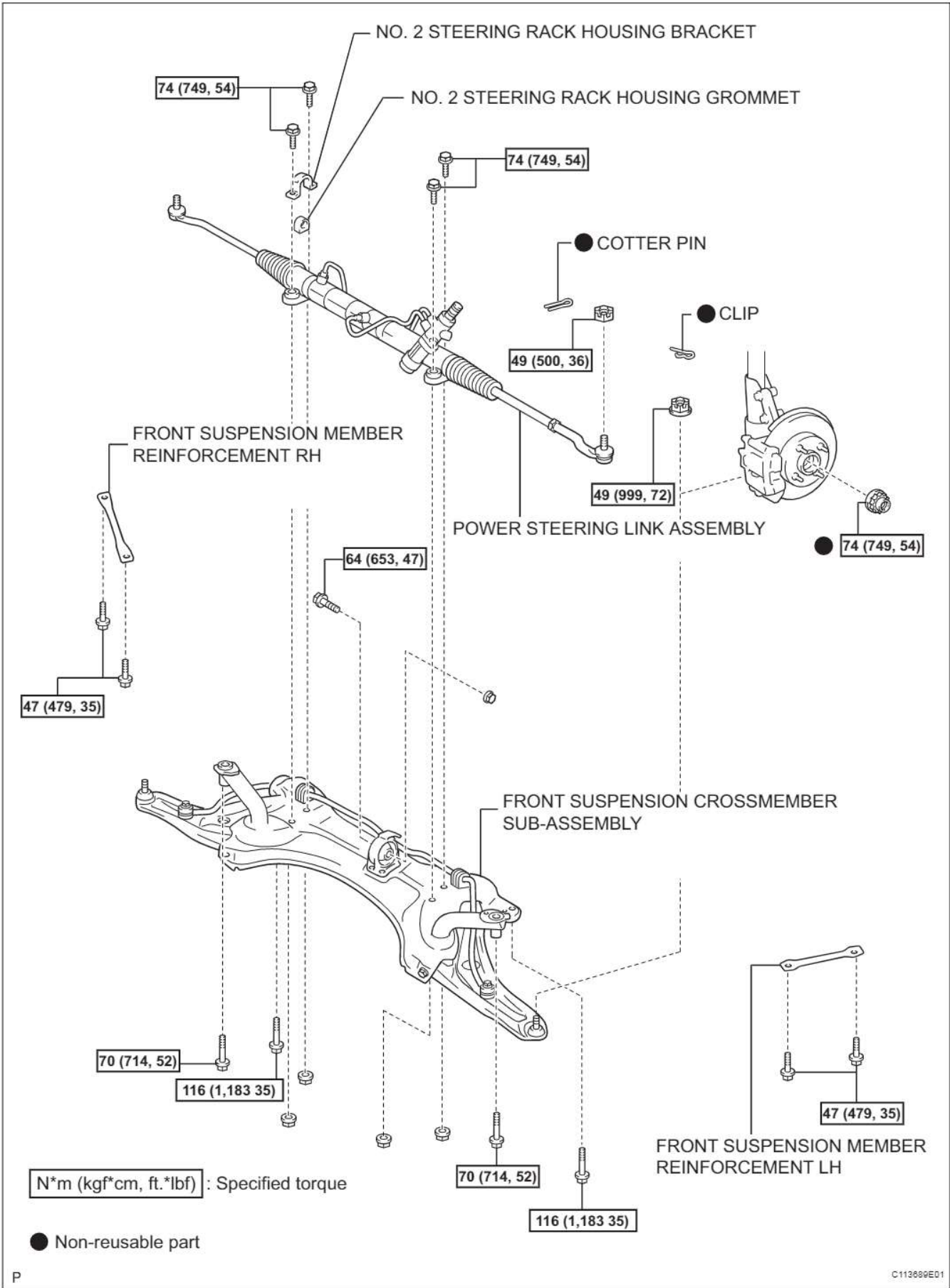
MX-18

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY



C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY

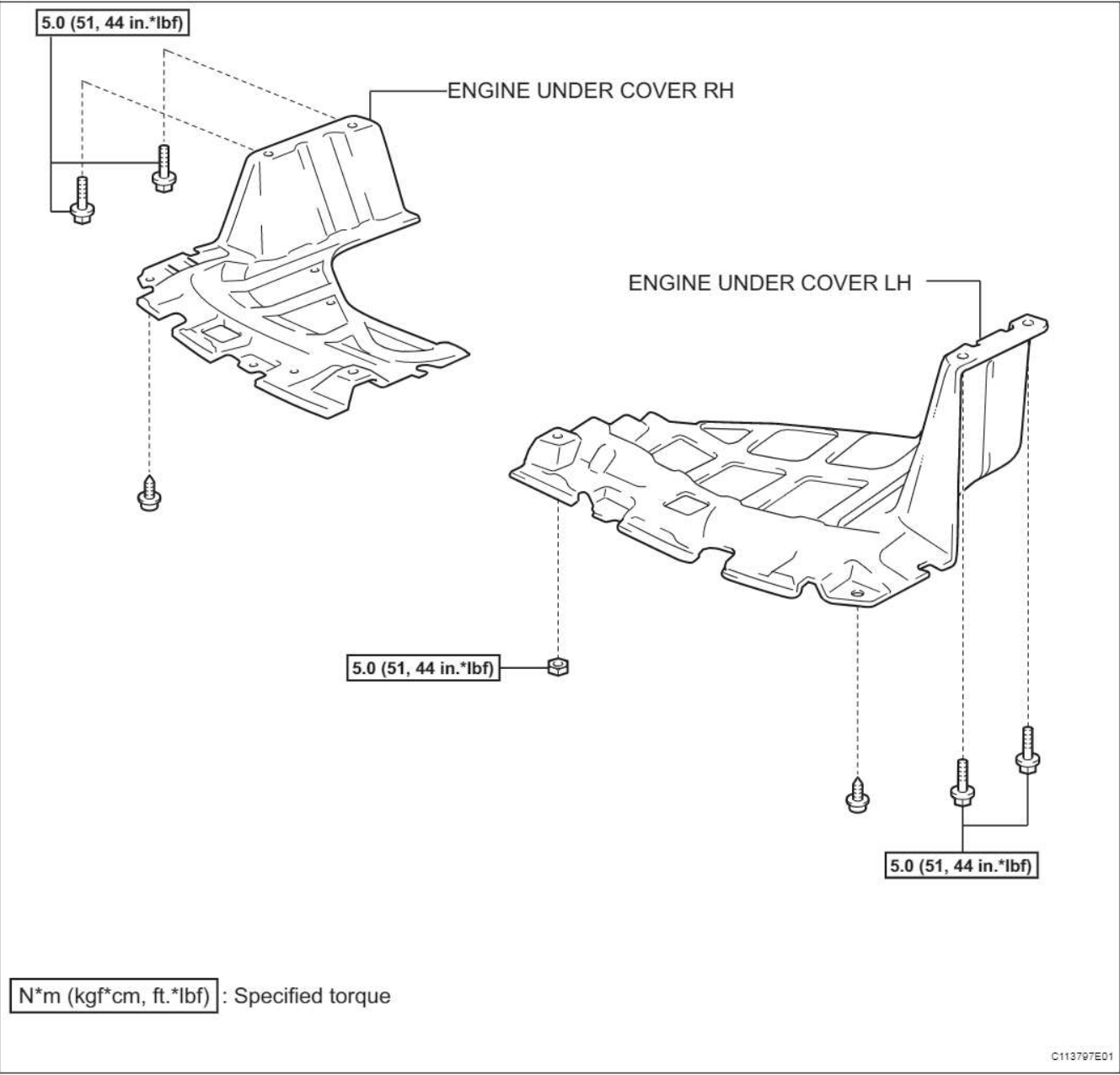
MX-19



MX

MX-20

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE ASSEMBLY

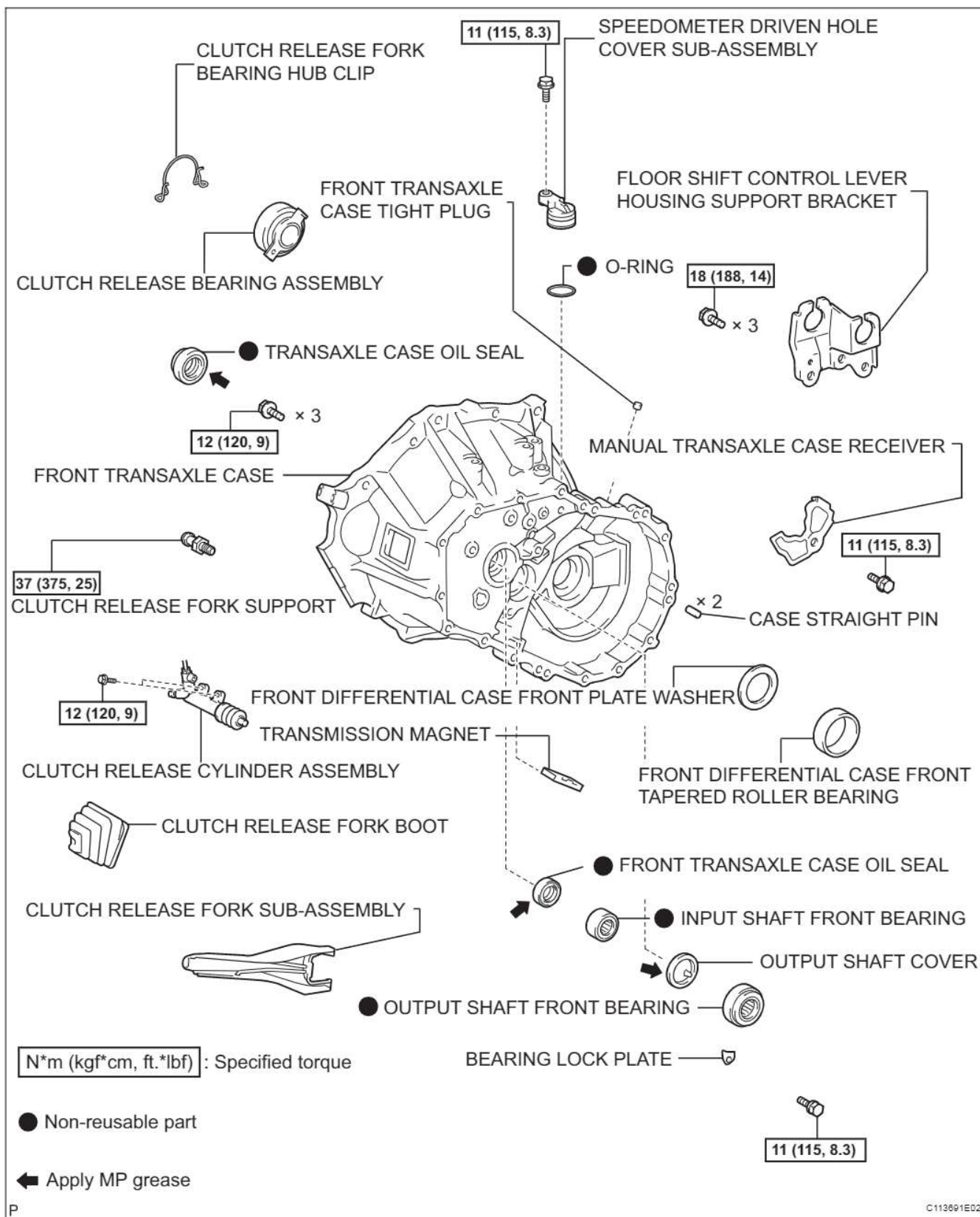


C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

MX-27

MANUAL TRANSAXLE UNIT

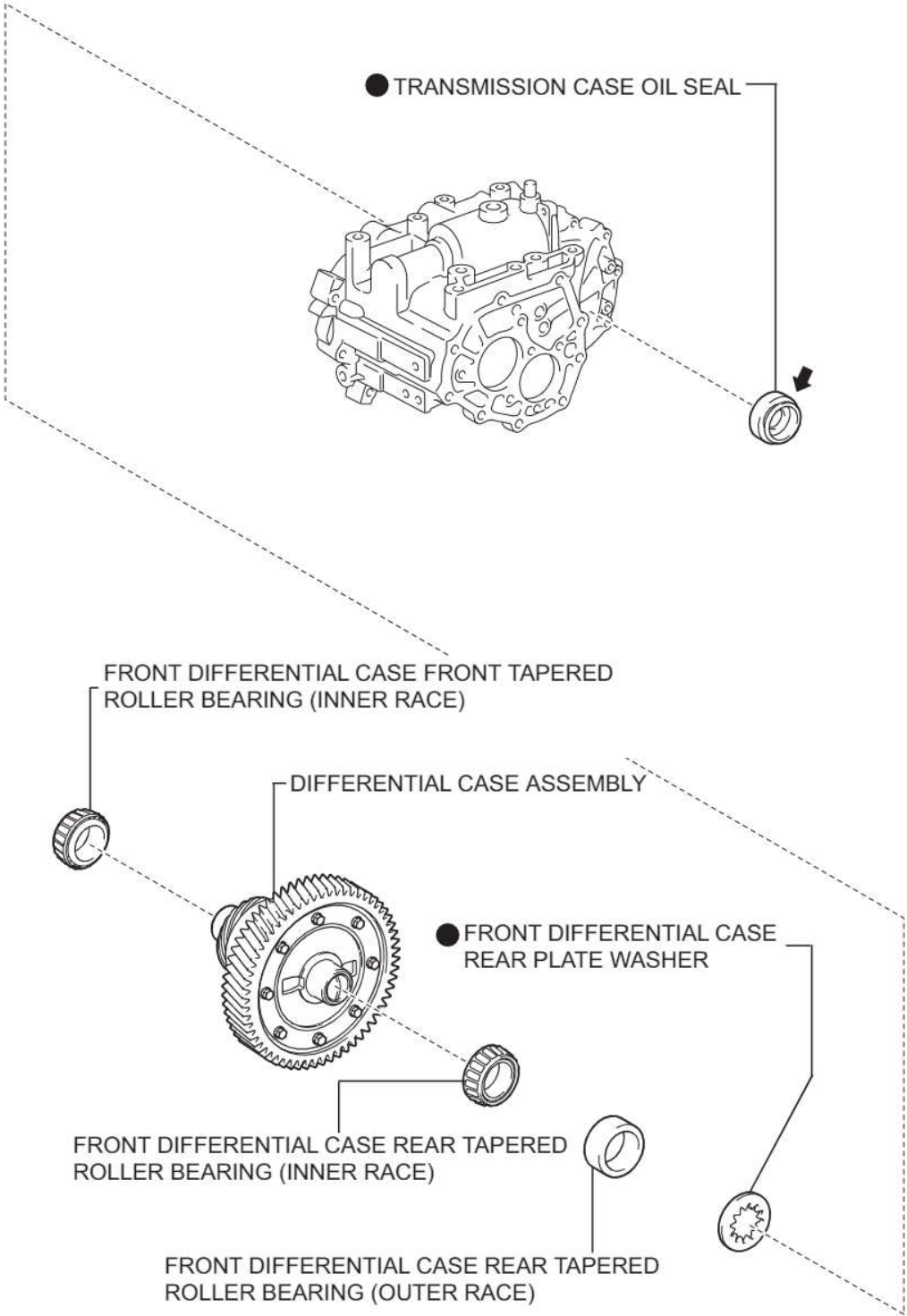
COMPONENTS



MX

MX-28

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT



● Non-reusable part

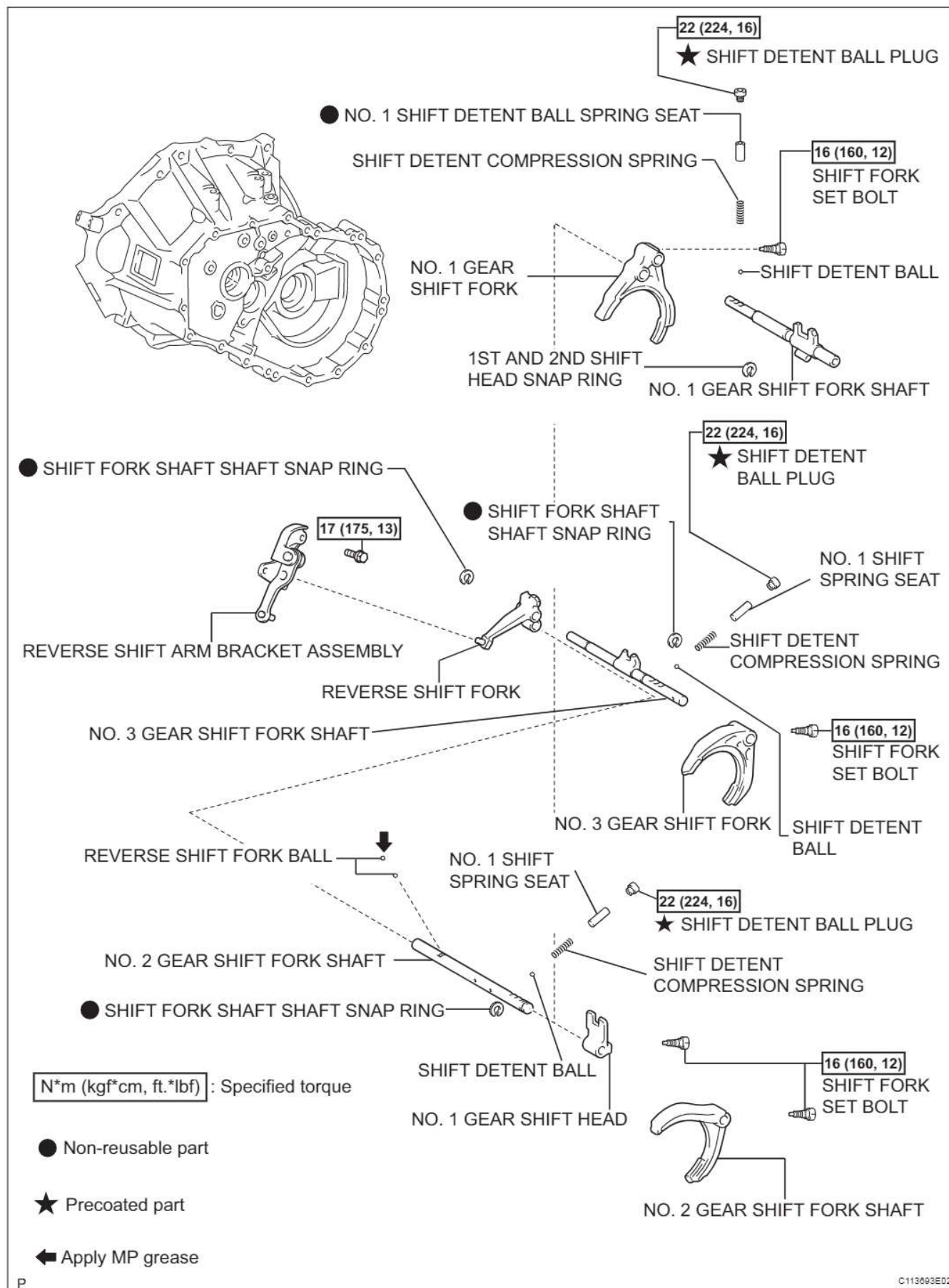
➡ Apply MP grease

P

C113892E02

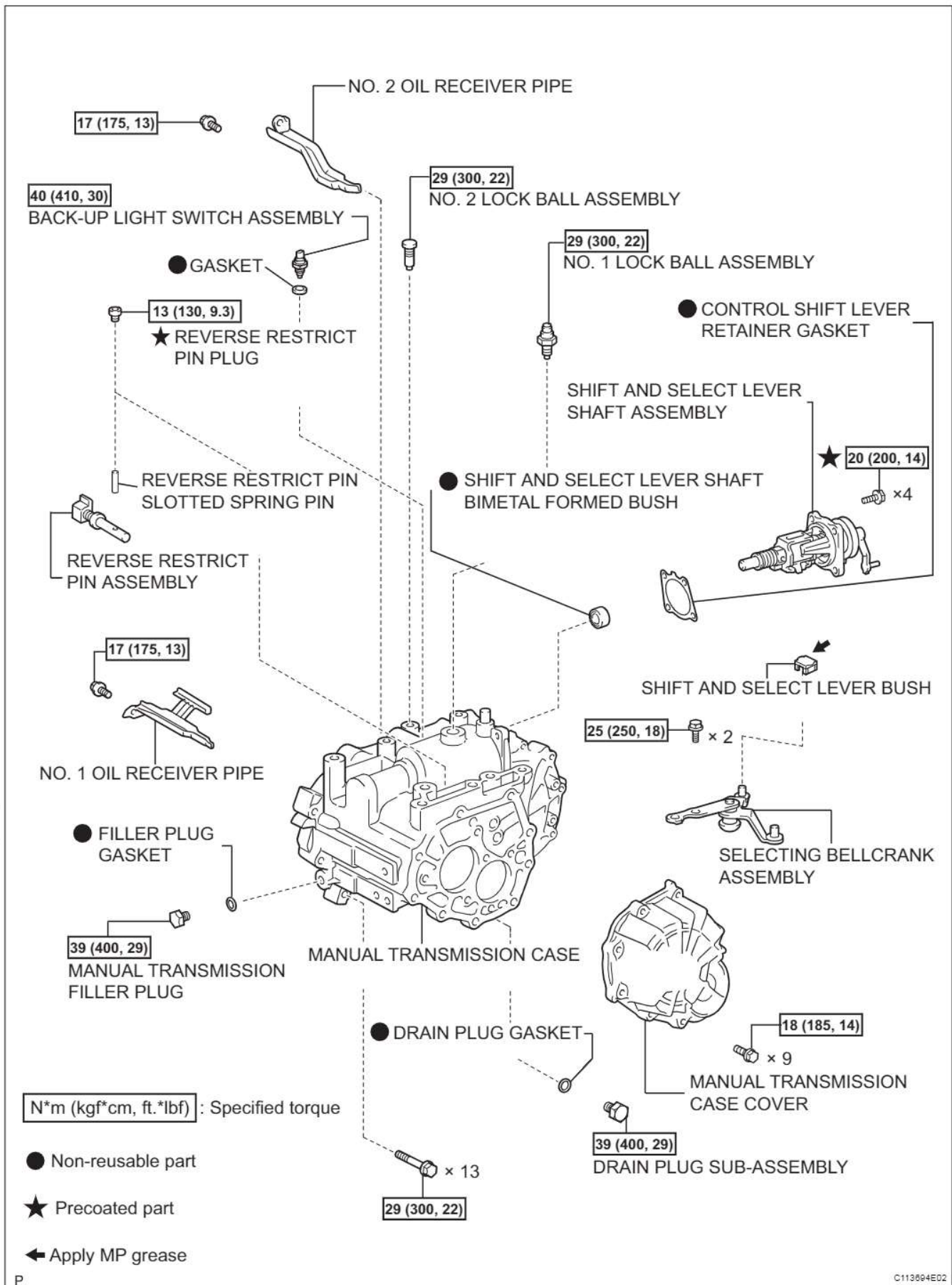
C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

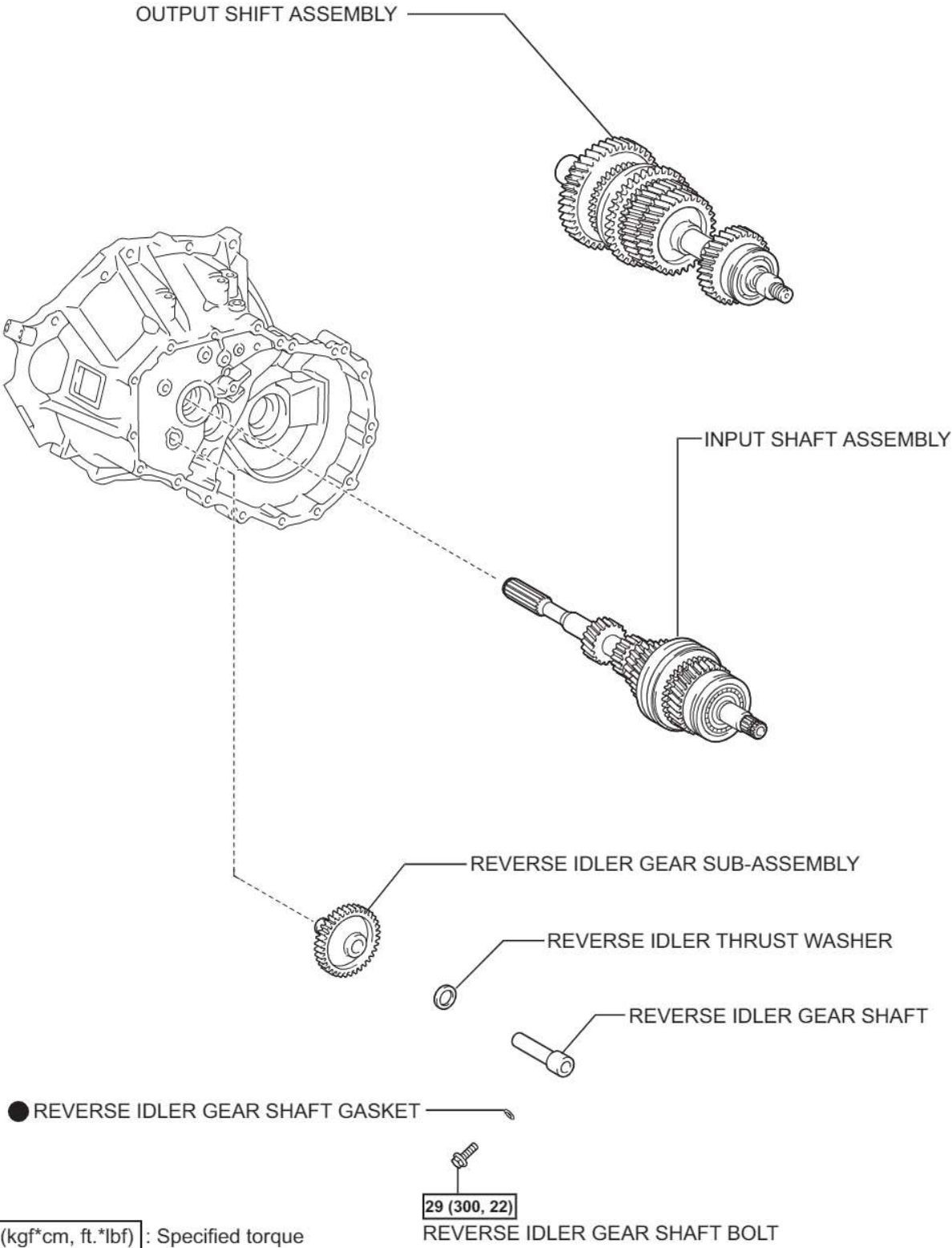
MX-29



MX-30

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

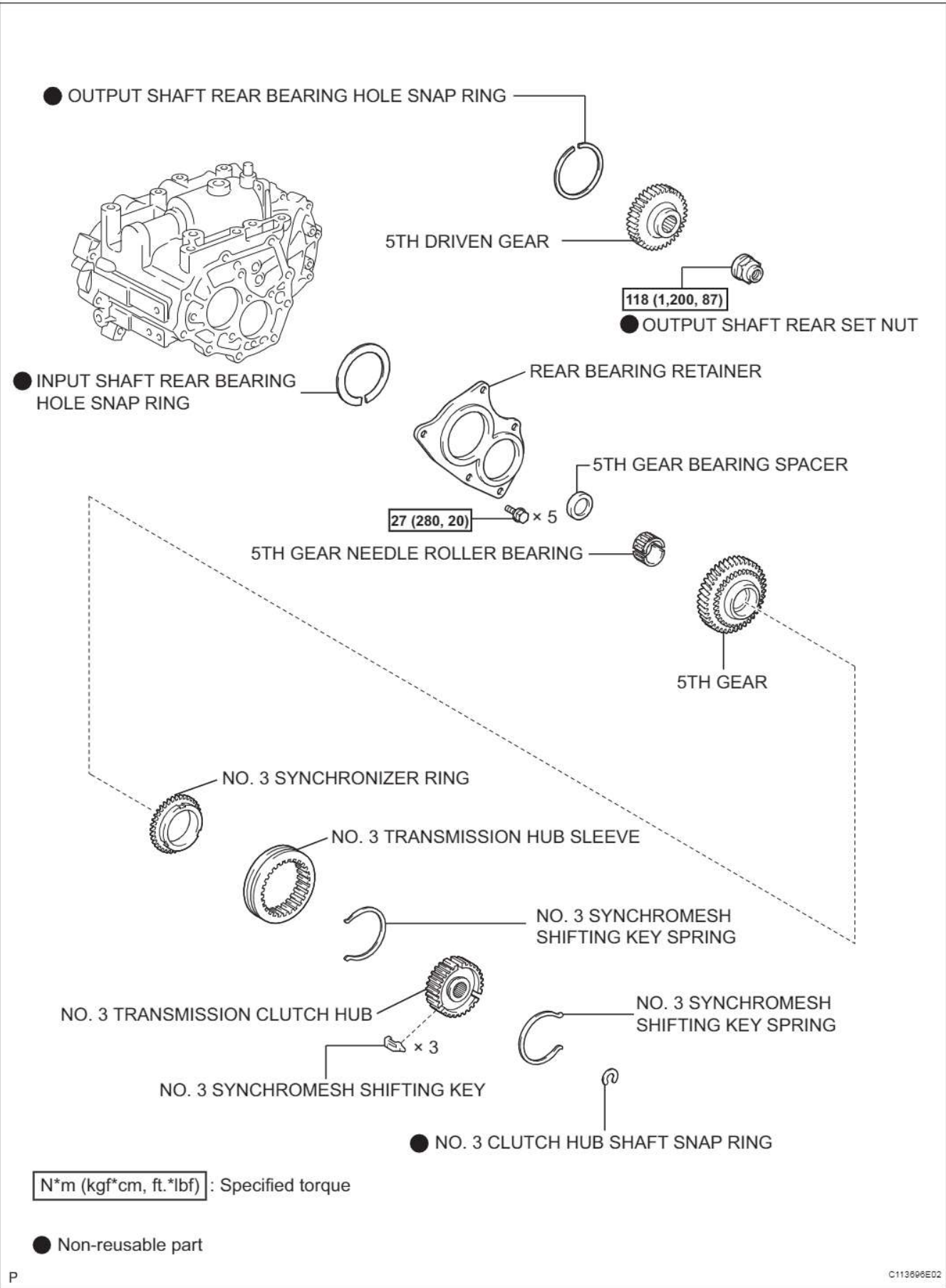




MX

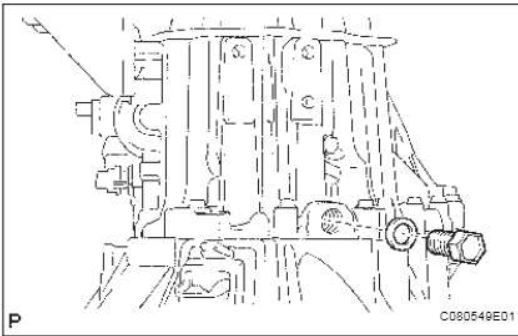
MX-32

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

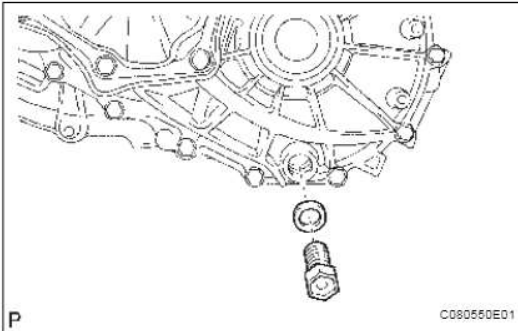


C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**MX-33****DISASSEMBLY****1. REMOVE MANUAL TRANSMISSION FILLER PLUG**

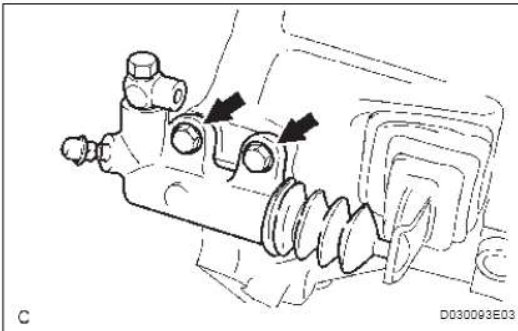
- (a) Remove the transmission filler plug and gasket from the transmission case.

**2. REMOVE DRAIN PLUG SUB-ASSEMBLY**

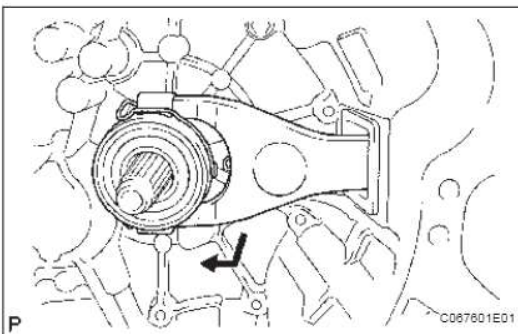
- (a) Remove the drain plug and gasket from the transmission case.

**3. REMOVE CLUTCH RELEASE CYLINDER ASSEMBLY**

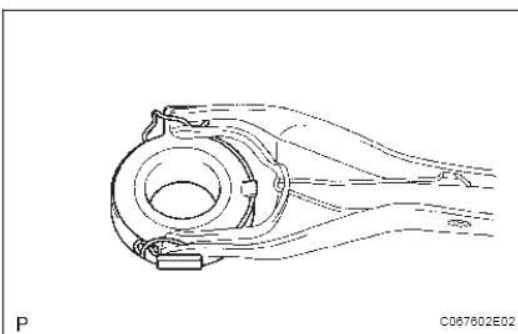
- (a) Remove the 2 bolts and clutch release cylinder.

**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.

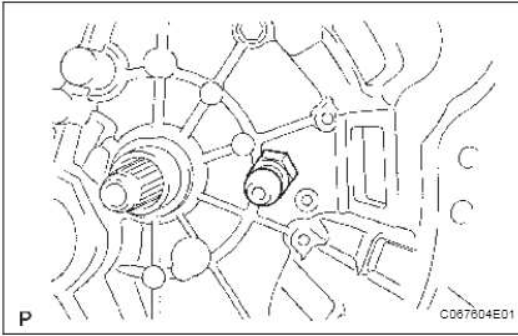
**5. REMOVE CLUTCH RELEASE FORK SUB-ASSEMBLY**

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

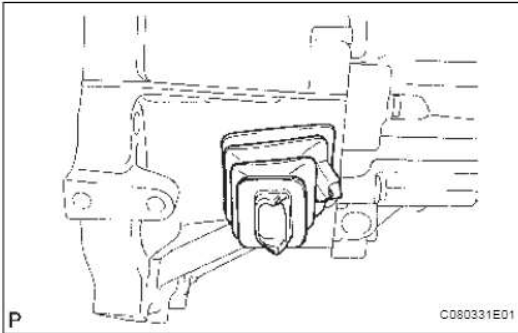
**6. REMOVE CLUTCH RELEASE BEARING ASSEMBLY**

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

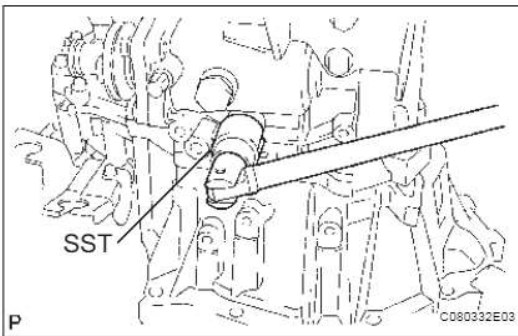
MX

MX-34**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****7. REMOVE RELEASE FORK SUPPORT**

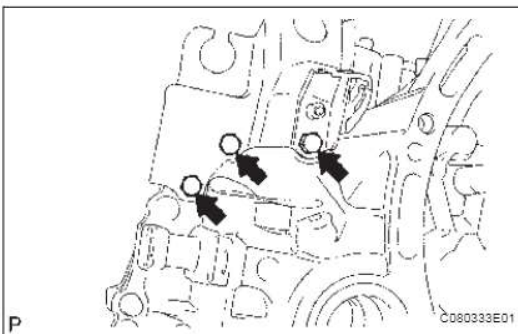
- (a) Remove the clutch release fork support from the front transaxle case.

**8. REMOVE CLUTCH RELEASE FORK BOOT**

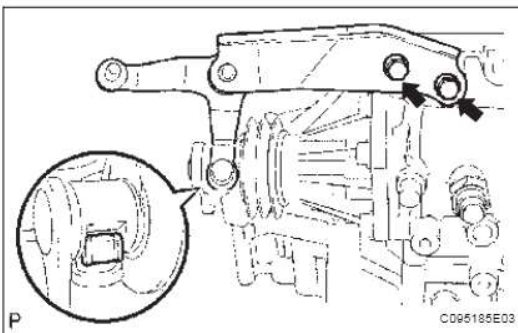
- (a) Remove the clutch release fork boot from the front transaxle case.

**9. REMOVE BACK-UP LIGHT SWITCH ASSEMBLY**

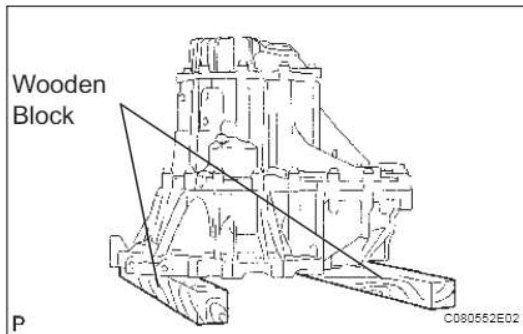
- (a) Using SST, remove the back-up light switch and gasket from the transmission case.
SST 09817-16011

**10. REMOVE FLOOR SHIFT CONTROL LEVER HOUSING SUPPORT BRACKET**

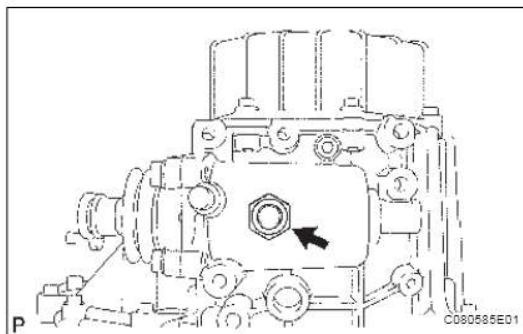
- (a) Remove the 3 bolts and floor shift control lever housing support bracket from the front transaxle case.

**11. REMOVE SELECTING BELLCRANK ASSEMBLY**

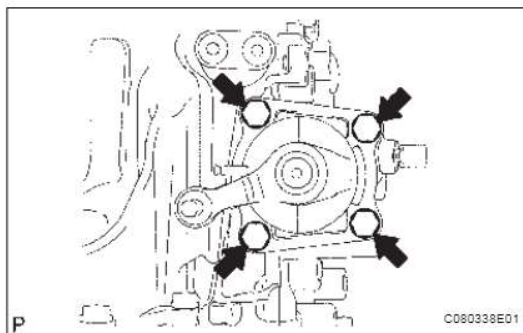
- (a) Remove the 2 bolts and selecting bellcrank from the transmission case.
(b) Remove the control shift lever bush.

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**MX-35****12. FIX MANUAL TRANSAXLE ASSEMBLY**

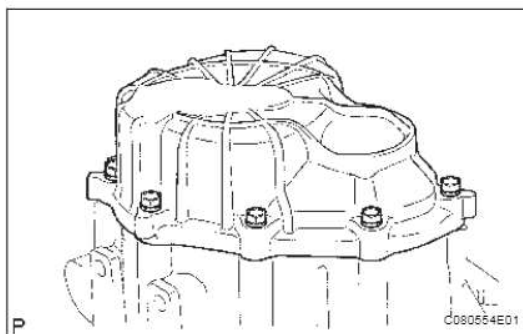
- (a) Place the transaxle on wooden blocks.

**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.

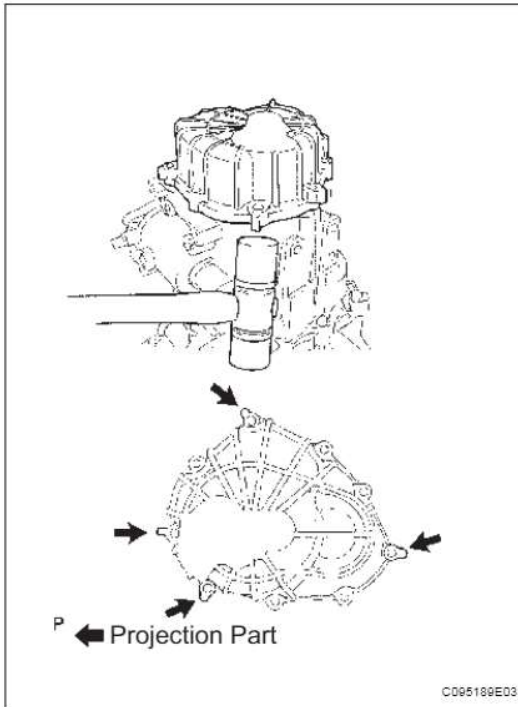
**15. REMOVE MANUAL TRANSMISSION CASE COVER SUB-ASSEMBLY**

- (a) Remove the 9 bolts.

MX

MX-36

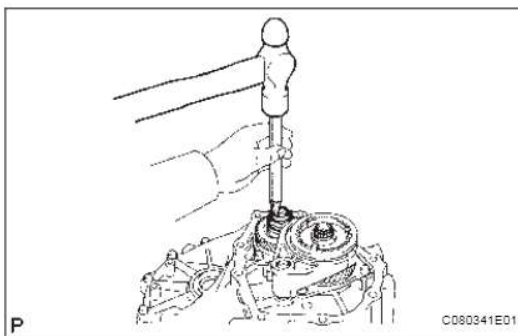
C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT



- (b) Using a plastic-faced hammer, carefully tap the projection of the manual transmission case cover to remove it from the transmission case.

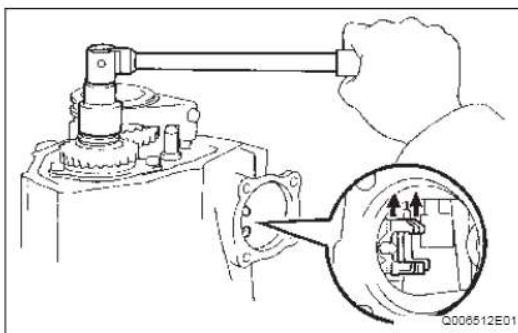
NOTICE:

Do not damage the transmission case.

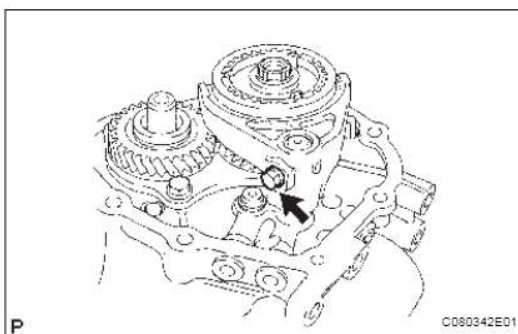


16. REMOVE MANUAL TRANSMISSION REAR OUTPUT SHAFT SET NUT

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

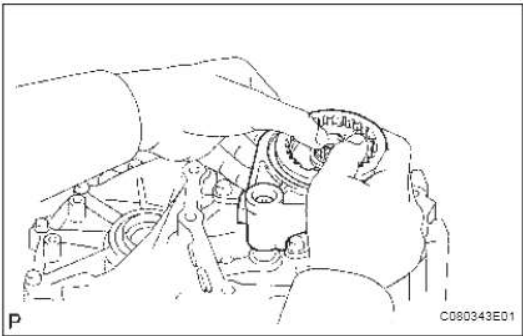


- (b) Engage the 2 gears simultaneously to lock the transmission.
 (c) Remove the transmission output shaft rear set nut.
 (d) Disengage the 2 gears.

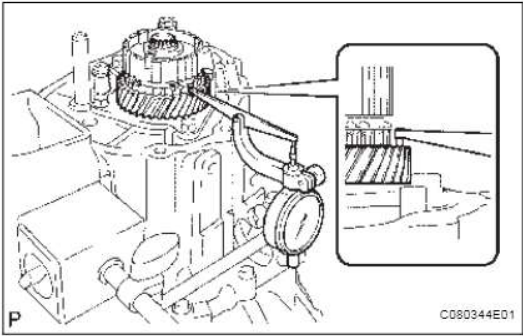


17. REMOVE NO. 3 GEAR SHIFT FORK

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

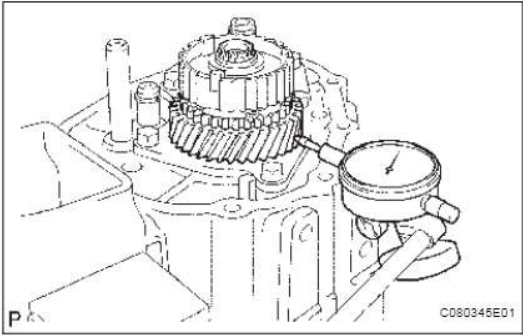


- (b) Remove the No. 3 transmission hub sleeve with No. 3 gear shift fork from the No. 3 transmission clutch hub.



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 0.02244 in.)
Maximum clearance:
0.57 mm (0.02244 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

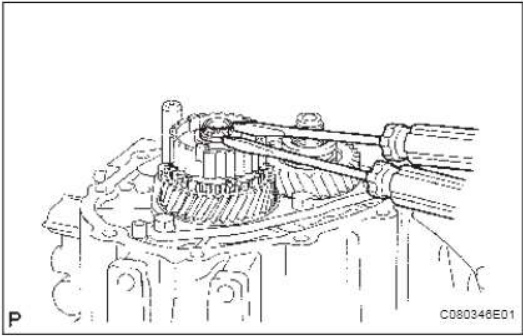
Item	Specified Condition
KOYO made	0.058 mm (0.0023 in.)
NSK made	0.056 mm (0.0022 in.)

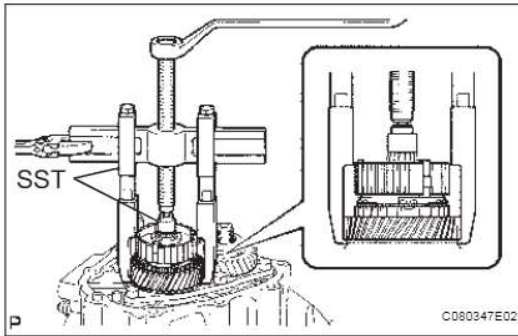
MX

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

20. REMOVE NO. 3 TRANSMISSION CLUTCH HUB

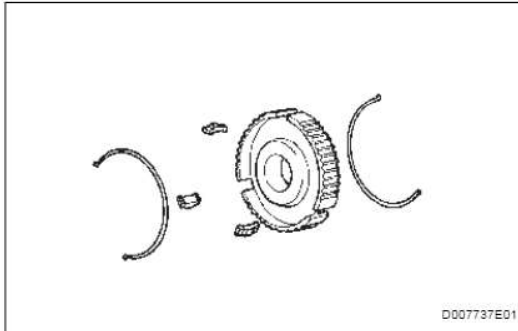
- (a) Using 2 screwdrivers and a hammer, tap out the snap ring.
NOTICE:
Use a cloth to keep the snap ring from springing away.



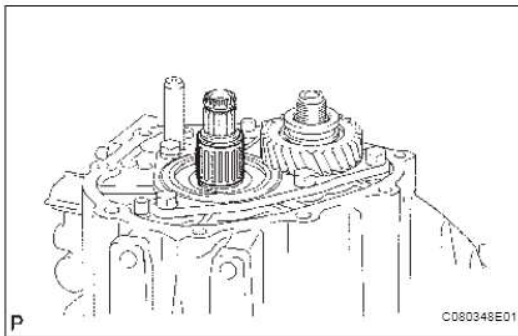
MX-38**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**

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

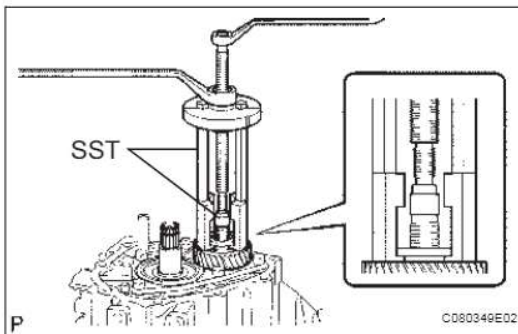
SST 09950-40011 (09951-04020, 09952-04010, 09953-04030, 09954-04010, 09955-04071, 09957-04010), 09950-60010 (09951-00200)



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

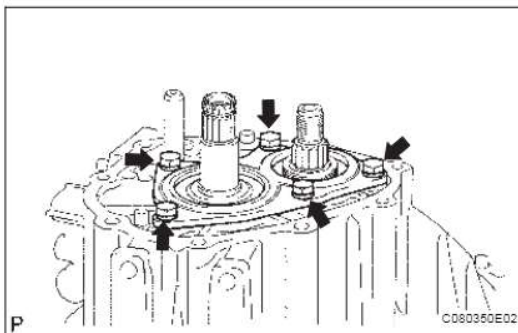
**21. REMOVE 5TH GEAR NEEDLE ROLLER BEARING**

- (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)

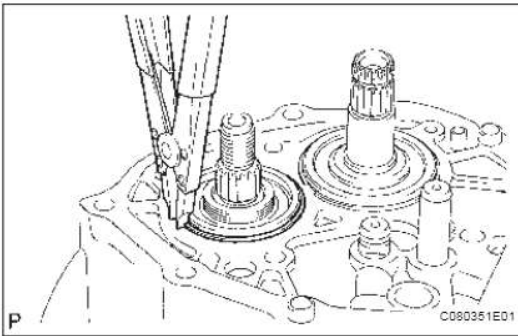
**23. REMOVE REAR BEARING RETAINER**

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

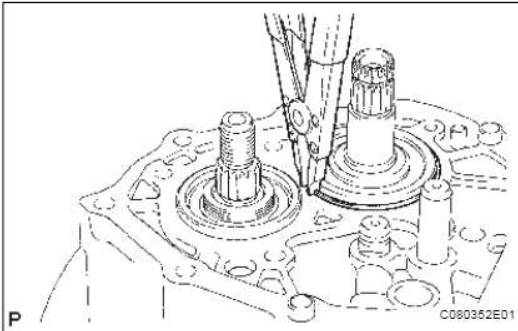
MX

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

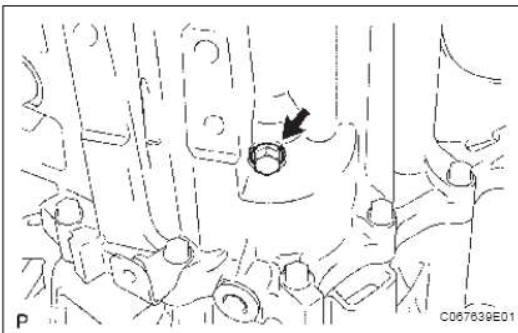
MX-39

**24. REMOVE OUTPUT SHAFT REAR BEARING HOLE SNAP RING**

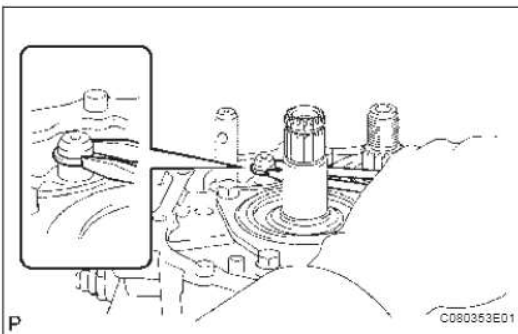
- (a) Using a snap ring expander, remove the hole snap ring from the output shaft.

**25. REMOVE INPUT SHAFT REAR BEARING SHAFT SNAP RING**

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

**26. REMOVE REVERSE IDLER GEAR SHAFT BOLT**

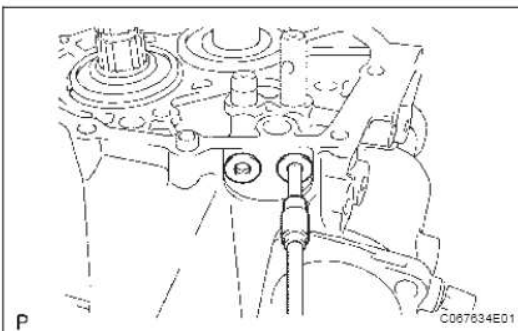
- (a) Remove the shaft bolt and gasket from the transmission case.

**27. REMOVE SHIFT FORK SHAFT SHAFT SNAP RING**

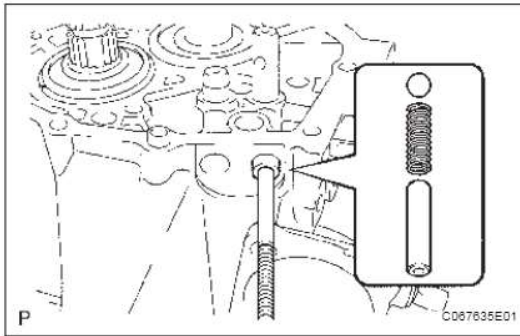
- (a) Using 2 screwdrivers and a hammer, tap out the snap ring from the No. 2 gear shift fork shaft.

NOTICE:

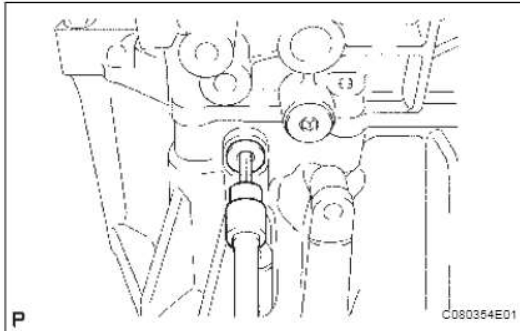
Use a cloth to keep the snap ring from springing away.

MX**28. REMOVE SHIFT DETENT BALL**

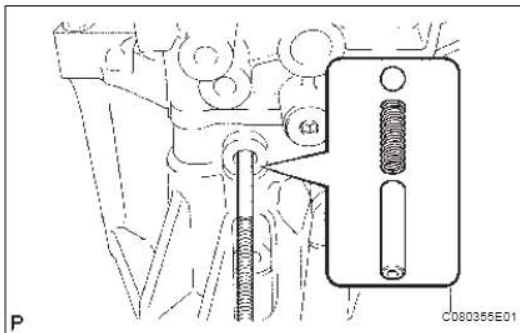
- (a) Using a hexagon wrench, remove the 2 shift detent ball plugs from the transmission case.

MX-40**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**

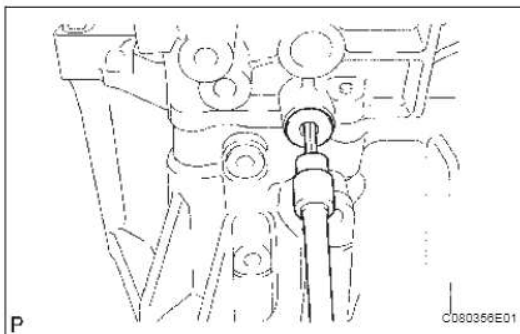
- (b) Using a magnetic finger, remove the 2 No. 1 shift detent ball spring seats, 2 shift detent ball springs and 2 shift detent balls from the transmission case.



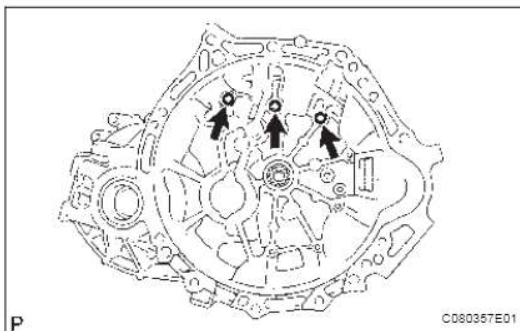
- (c) Using a hexagon wrench, remove the shift detent ball plug from the front transaxle case.



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

MX**29. REMOVE NO. 2 LOCK BALL ASSEMBLY**

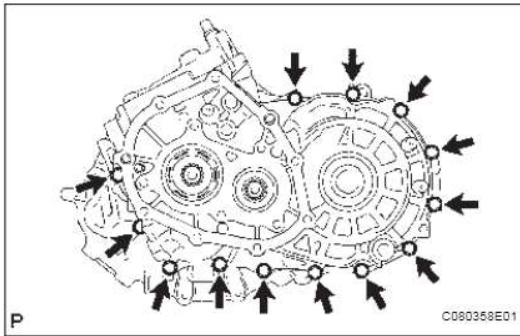
- (a) Using a hexagon wrench, remove the No. 2 lock ball from the transmission case.

**30. REMOVE MANUAL TRANSMISSION CASE**

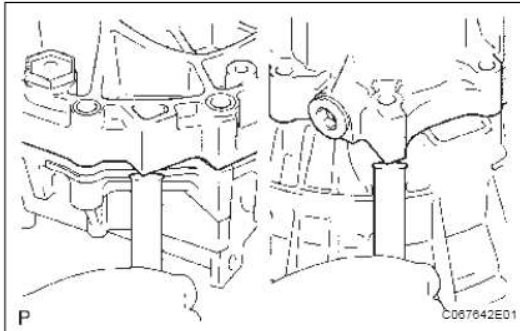
- (a) Remove the 3 bolts from the front transaxle case.

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

MX-41



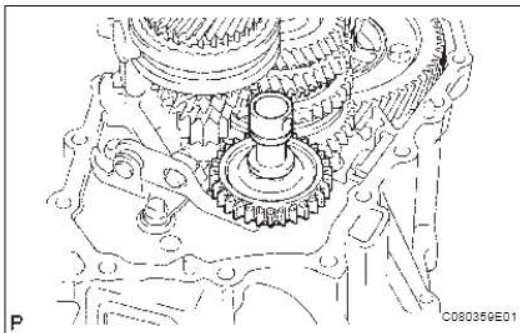
- (b) Remove the 13 bolts from the transmission case.



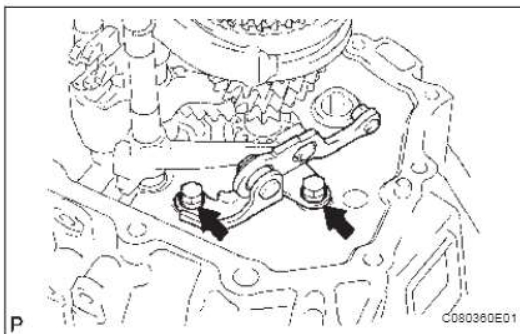
- (c) Using a brass bar and hammer, carefully tap the projection of the transmission case to remove it from the transaxle case.

NOTICE:

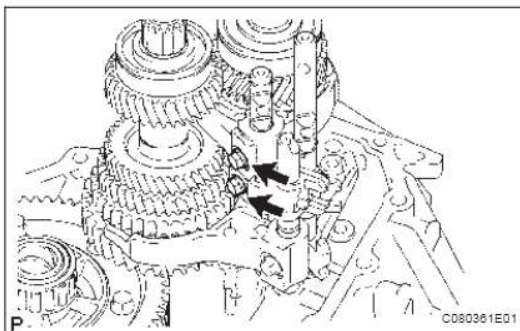
Do not damage the transmission case and transaxle case.

**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.

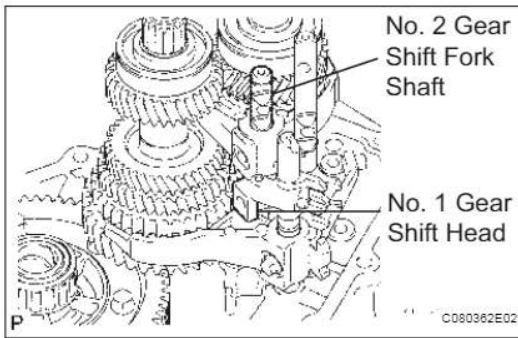
**33. REMOVE NO. 2 GEAR SHIFT FORK SHAFT**

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

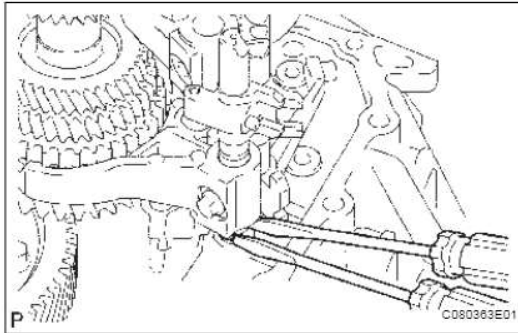
MX

MX-42

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT



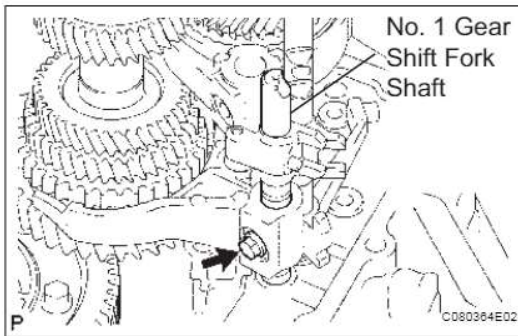
- (b) Remove the No. 2 gear shift fork shaft and No. 1 gear shift head from the front transaxle case.

**34. REMOVE NO. 1 GEAR SHIFT FORK SHAFT**

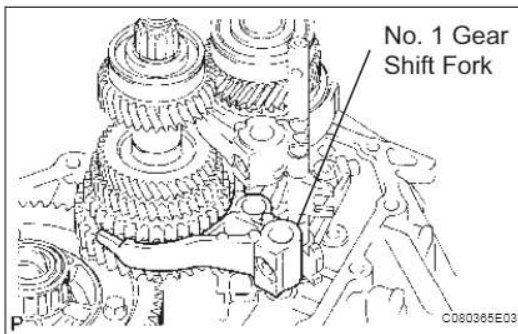
- (a) Using 2 screwdrivers and a hammer, tap out the snap ring.

NOTICE:

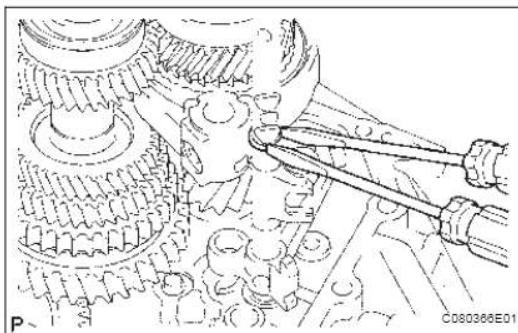
Use a cloth to keep the snap ring from springing away.



- (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.

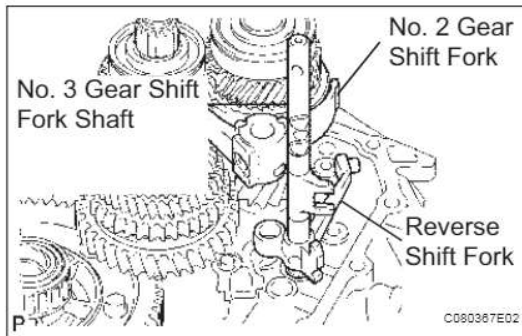
NOTICE:

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

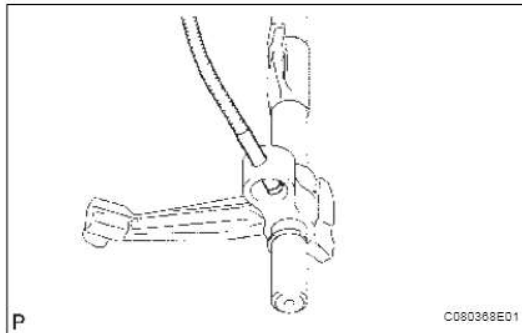
MX

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

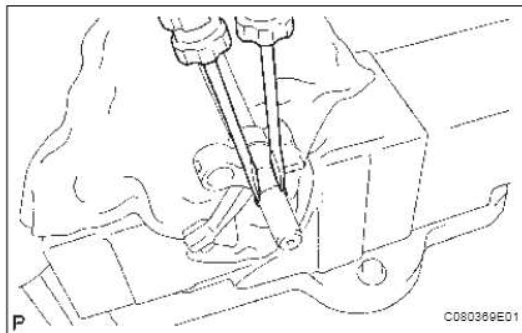
MX-43



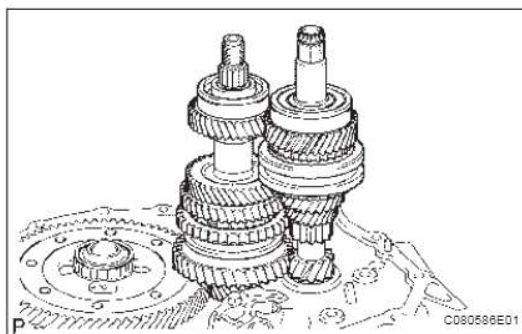
- (b) Remove the No. 3 gear shift fork shaft with reverse shift fork and No. 2 gear shift fork from the transaxle case.



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



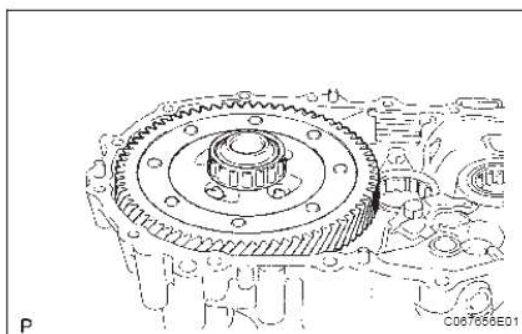
- (d) Using 2 screwdrivers and a hammer, tap out the snap ring from the No. 3 shift fork shaft.
NOTICE:
 Use a cloth to keep the snap ring from springing away.
 (e) Remove the reverse shift fork from the No. 3 gear shift fork shaft.



36. REMOVE INPUT SHAFT ASSEMBLY

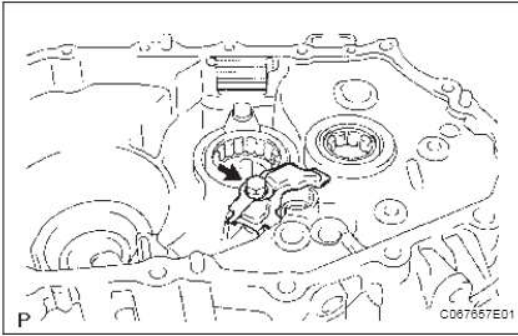
- (a) Remove the input shaft and output shaft from the front transaxle case.

MX

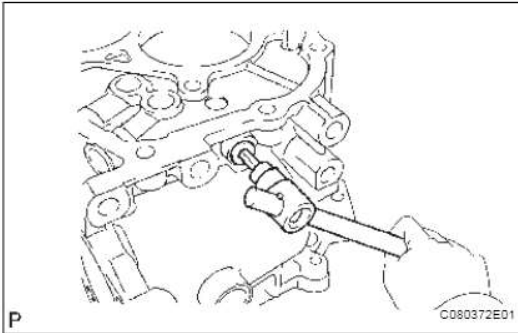


37. REMOVE DIFFERENTIAL CASE ASSEMBLY

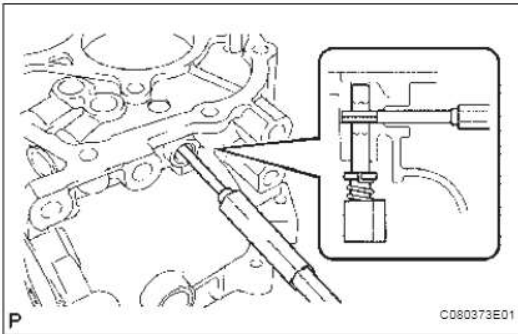
- (a) Remove the differential case from the front transaxle case.

MX-44**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****38. REMOVE MANUAL TRANSAXLE CASE RECEIVER**

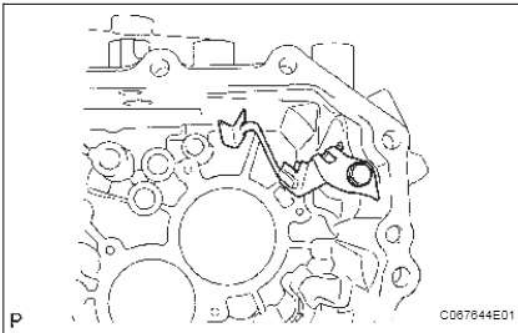
- (a) Remove the bolt and transaxle case receiver from the front transaxle case.

**39. REMOVE REVERSE RESTRICT PIN ASSEMBLY**

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



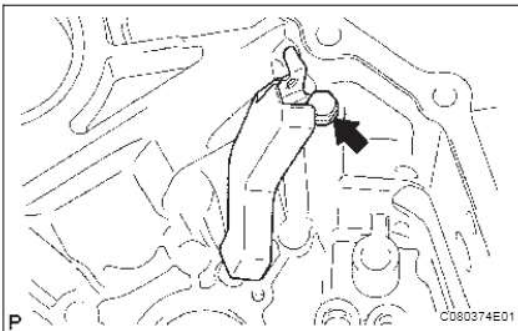
- (b) Using a 5 mm pin punch and hammer, tap out the slotted spring pin and remove the reverse restrict pin from the transmission case.

**40. REMOVE NO. 1 OIL RECEIVER PIPE**

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

NOTICE:

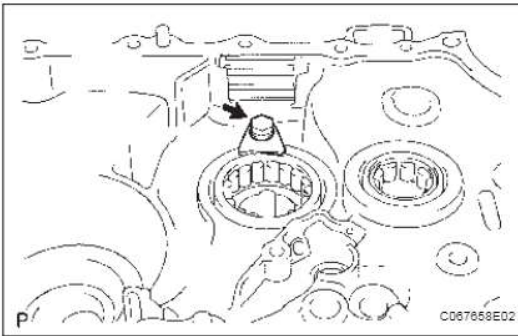
Be careful not to damage the No. 1 oil receiver pipe.

**41. REMOVE NO. 2 OIL RECEIVER PIPE**

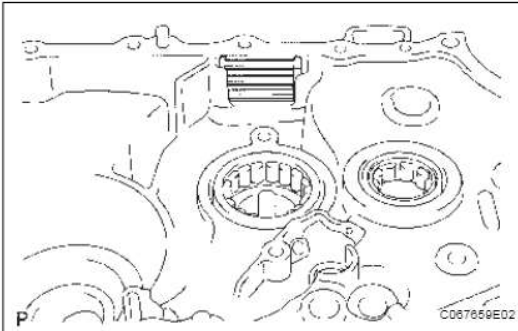
- (a) Remove the bolt and No. 2 oil receiver pipe from the transmission case.

NOTICE:

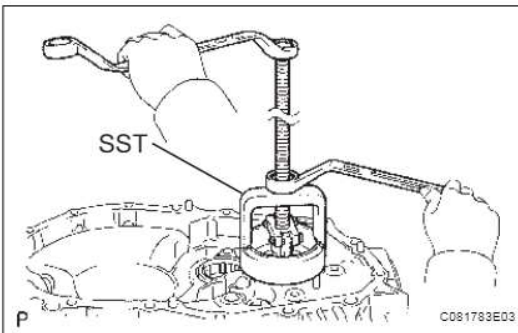
Be careful not to damage the No. 2 oil receiver pipe.

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**MX-45****42. REMOVE BEARING LOCK PLATE**

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

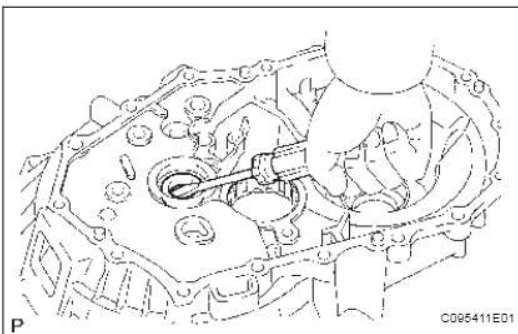
**43. REMOVE TRANSMISSION MAGNET**

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

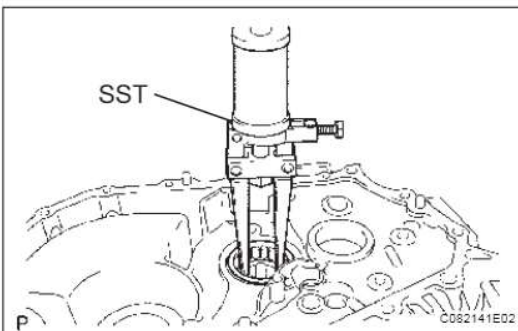
**44. REMOVE INPUT SHAFT FRONT BEARING**

- (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.

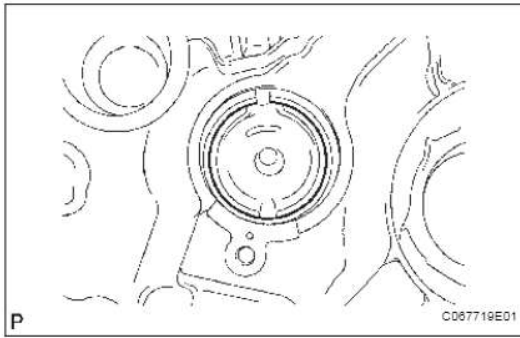
MX**46. REMOVE OUTPUT SHAFT FRONT BEARING**

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

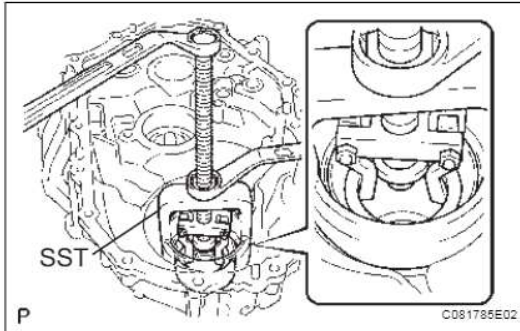
SST 09308-00010

NOTICE:

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

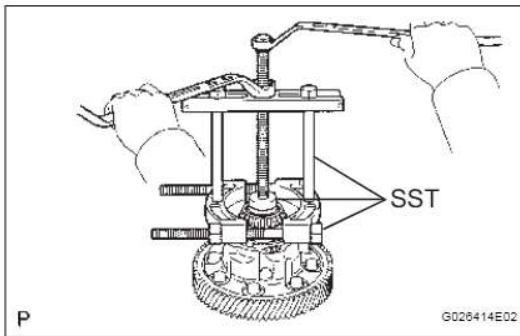
MX-46**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****47. REMOVE OUTPUT SHAFT COVER**

- (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)

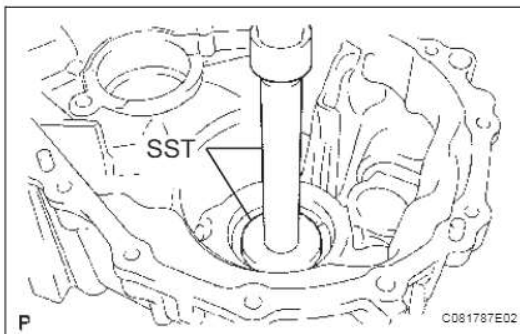


- (b) Using SST, remove the front differential case front tapered roller bearing (inner race) from the differential case assembly.

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

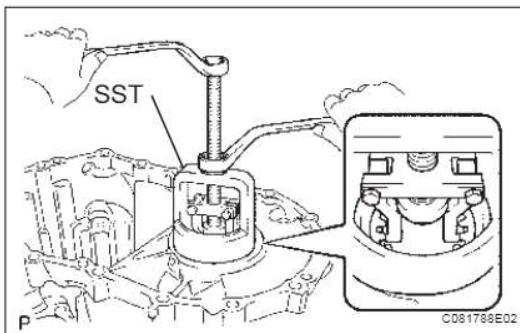
NOTICE:

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**

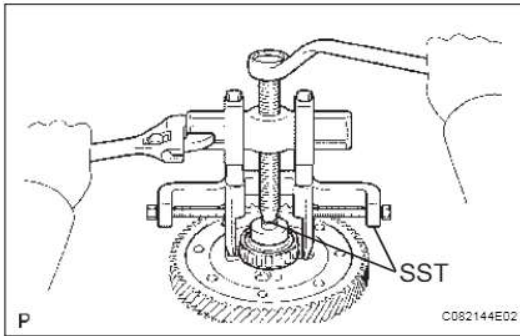
- (a) Using SST, remove the rear tapered roller bearing (outer race) and plate washer from the transmission case.

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

MX

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

MX-47

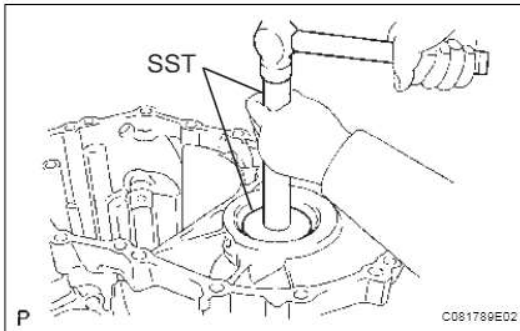


- (b) Using SST, remove the rear tapered roller bearing (inner race) from the front differential case.

SST 09950-40011 (09951-04010, 09952-04010, 09953-04020, 09954-04010, 09955-04061, 09957-04010, 09958-04011), 09950-60010 (09951-00360)

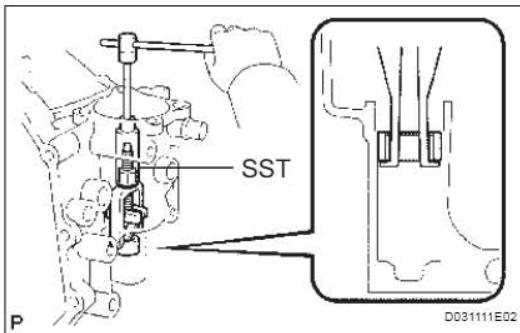
NOTICE:

Be careful not to damage the bearing.

**51. REMOVE TRANSMISSION CASE OIL SEAL**

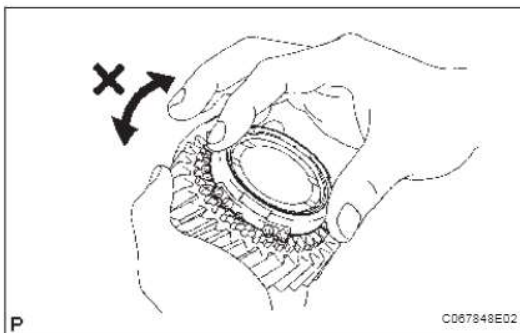
- (a) Using SST and a hammer, tap out the transmission case oil seal from the transmission case.

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

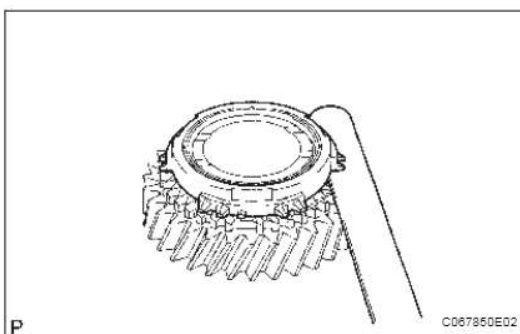
**52. REMOVE SHIFT AND SELECT LEVER SHAFT BIMETAL FORMED BUSH**

- (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:

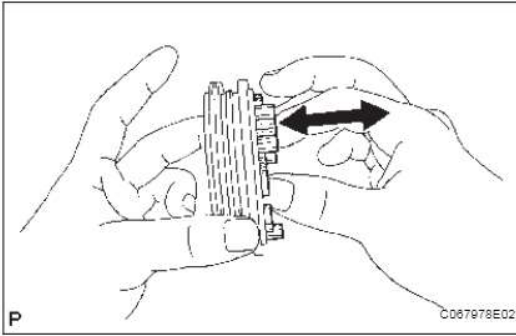
0.75 mm (0.0295 in.)

If the clearance is less than the minimum, replace the synchronizer ring and gear.

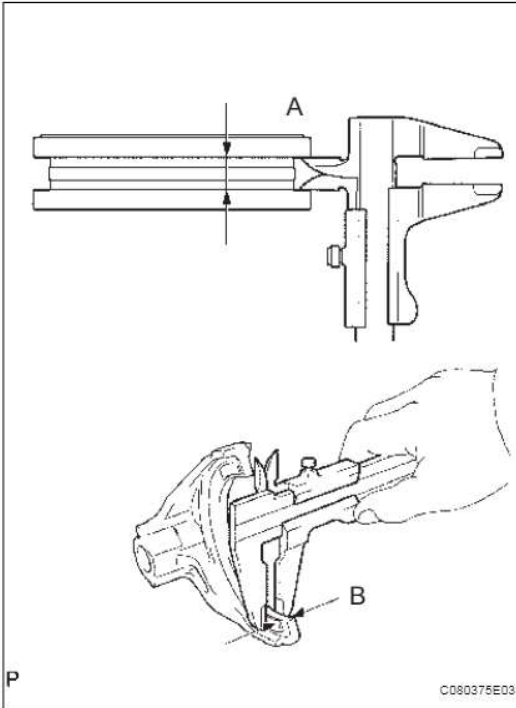
NOTICE:

Ensure the fine lapping compound is completely washed off after rubbing.

MX

MX-48**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****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.

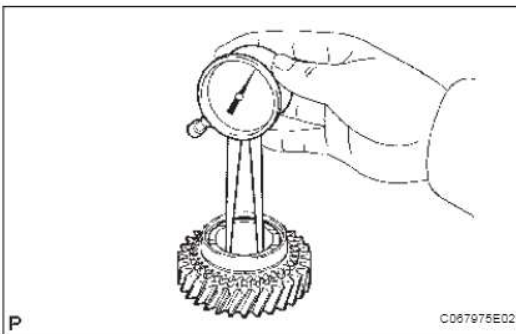


- (c) Using a vernier caliper, measure the width of the No. 3 transmission hub sleeve groove (A) and the thickness of the claw part on the No. 3 gear shift fork (B), and calculate the clearance.

Standard clearance:

$$A - B = 0.3 \text{ to } 0.5 \text{ mm (0.012 to 0.020 in.)}$$

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:

$$29.915 \text{ to } 29.931 \text{ mm (1.1778 to 1.1783 in.)}$$

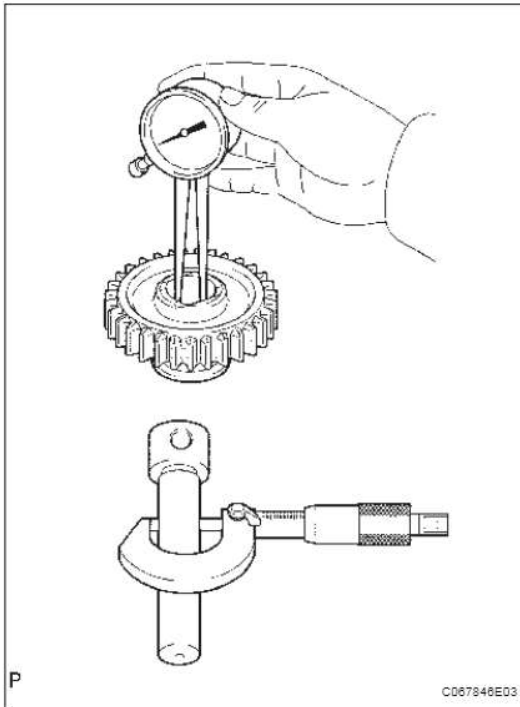
Maximum inside diameter:

$$29.931 \text{ mm (1.1783 in.)}$$

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

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

MX-49

**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.

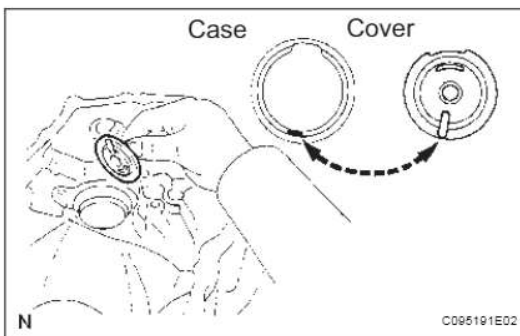
Standard diameter:

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.

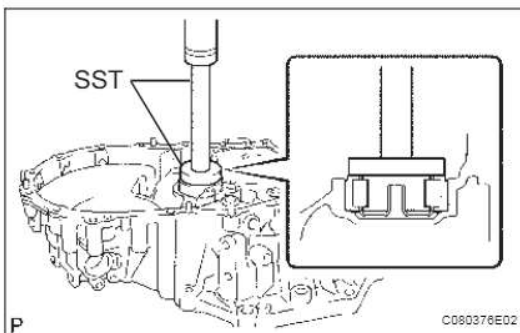
2. INSTALL OUTPUT SHAFT FRONT BEARING

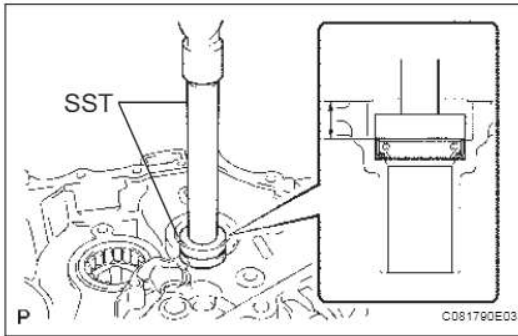
- (a) Coat a new front bearing with gear oil.
(b) Using SST and a press, press it into the front transaxle case.

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**

MX-50**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****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

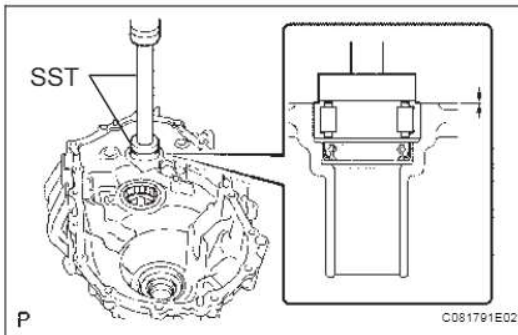
- (a) Coat a new input shaft front bearing with gear oil.

- (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 0.0118 in.)

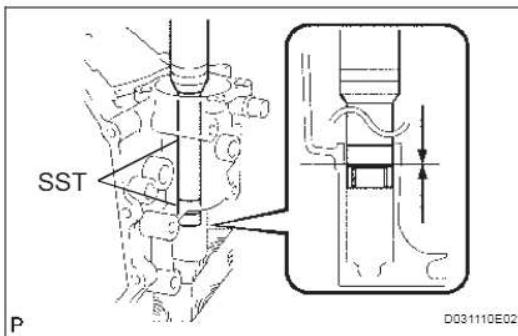
**5. INSTALL SHIFT AND SELECT LEVER SHAFT BIMETAL FORMED BUSH**

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

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

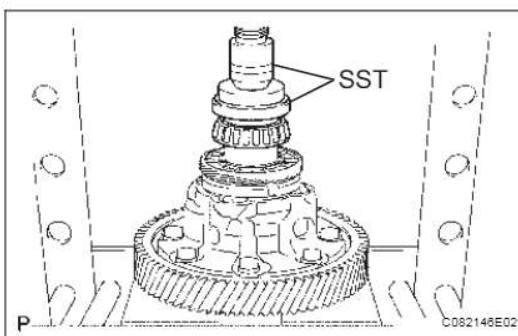
Standard depth:

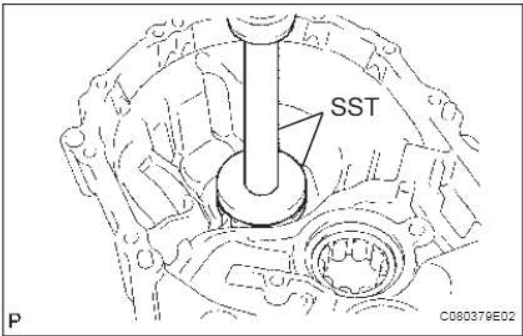
0 to 0.5 mm (0 to 0.020 in.)

**6. INSTALL FRONT DIFFERENTIAL CASE FRONT TAPERED ROLLER BEARING**

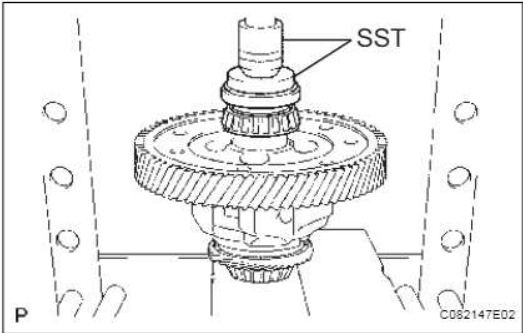
- (a) Using SST and a press, press in the front tapered roller bearing (inner race) to the front differential case.

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

**MX**

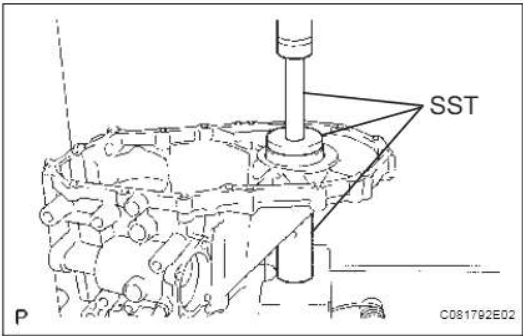


- (b) Using SST and a press, press in the front tapered roller bearing (outer race) with plate washer to the front transaxle case.
SST 09350-32014 (09351-32120), 09950-60010 (09951-00530)



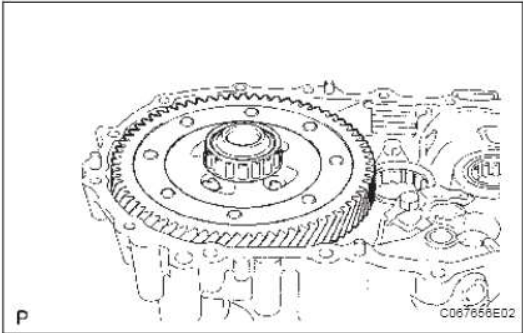
7. INSTALL FRONT DIFFERENTIAL CASE REAR TAPERED ROLLER BEARING

- (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)



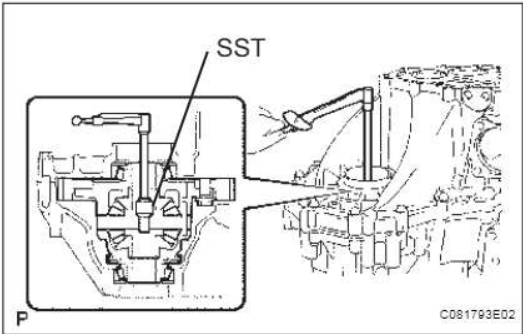
- (b) Using SST and a press, press in the rear tapered roller bearing (outer race) with plate washer to the transmission case.
SST 09309-36010, 09950-60020 (09951-00710), 09950-70010 (09951-07150)

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-52

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

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

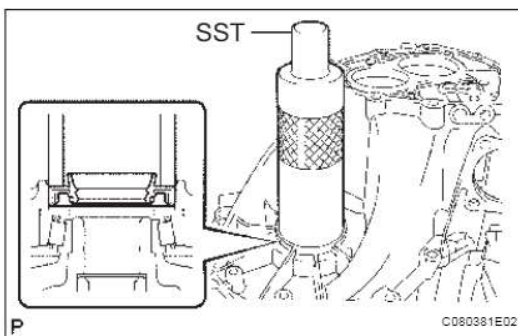
- (a) Using SST and a hammer, tap in a new transmission case oil seal to the transmission case.

SST 09316-60011 (09316-00011)

Standard drive depth:

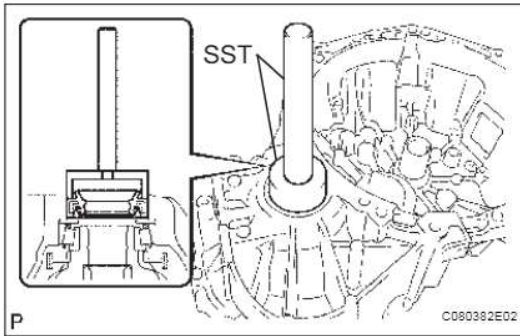
2.1 to 2.7 mm (0.082677 to 0.106299 in.)

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



C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

MX-53

**10. INSTALL TRANSAXLE CASE OIL SEAL**

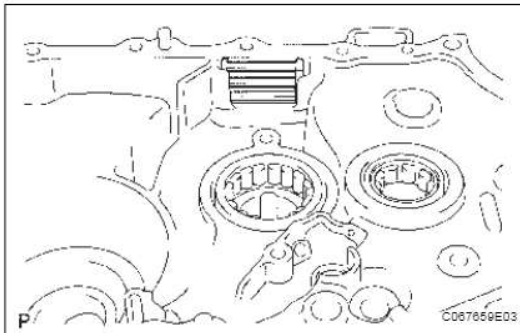
- (a) Using SST and a hammer, tap in a new oil seal to the front transaxle case.

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

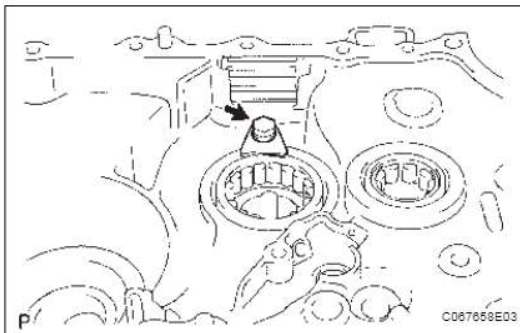
Standard depth:

1.6 to 2.2 mm (0.0629 to 0.0866 in.)

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

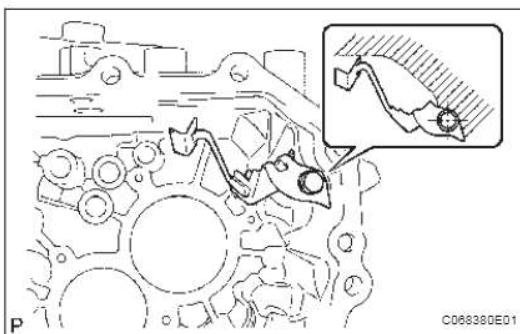
**11. INSTALL TRANSMISSION MAGNET**

- (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)

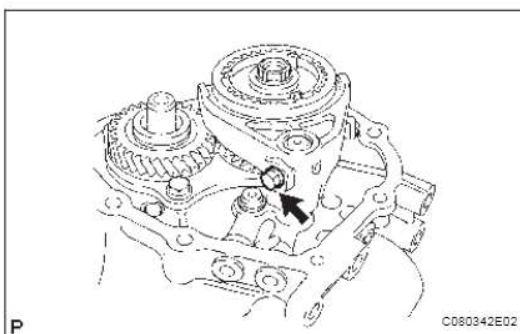
**13. INSTALL NO. 1 OIL RECEIVER PIPE**

- (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)

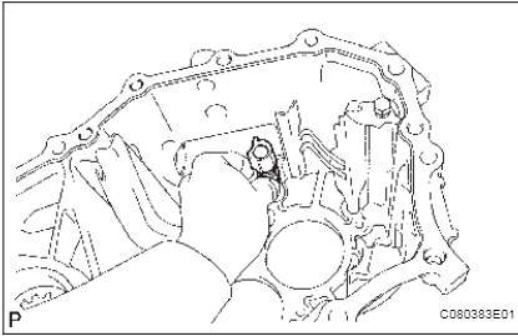
NOTICE:

- 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.

MX

MX-54

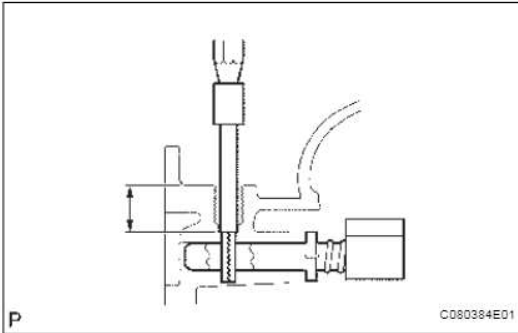
C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

**15. INSTALL REVERSE RESTRICT PIN ASSEMBLY**

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

NOTICE:

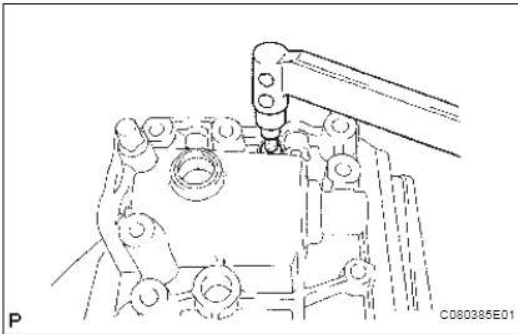
Be sure to set the reverse restrict pin in the correct orientation.



- (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.

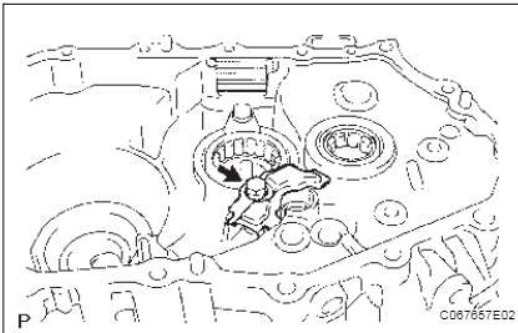
Sealant:

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.

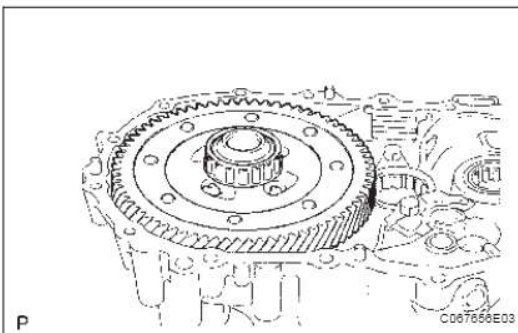
Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf)

MX

**16. INSTALL MANUAL TRANSAXLE CASE RECEIVER**

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

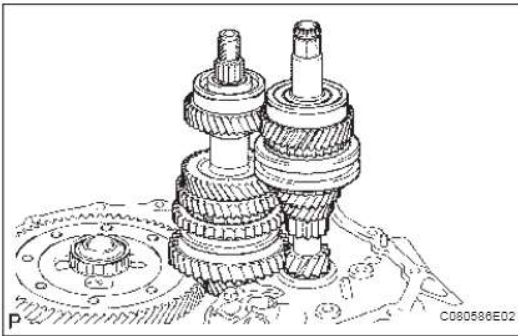
Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)

**17. INSTALL DIFFERENTIAL CASE ASSEMBLY**

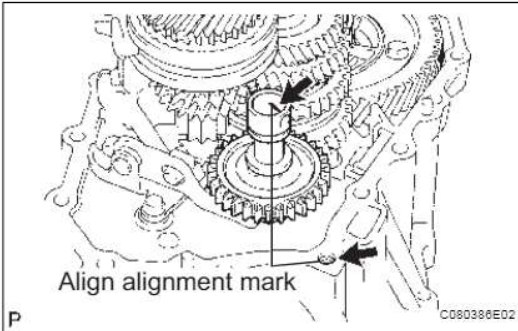
- (a) Coat the differential case tapered roller bearing with gear oil, and install the differential case to the front transaxle case.

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

MX-55

**18. INSTALL INPUT SHAFT ASSEMBLY**

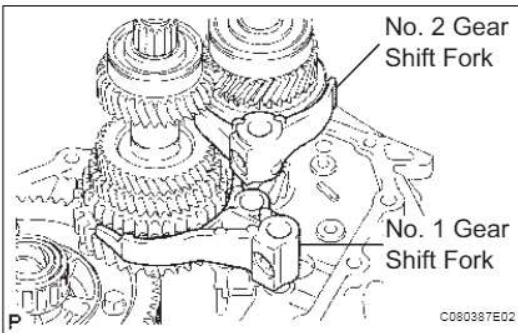
- (a) Coat the sliding and rotating surface of the input and output shafts with gear oil, and install them to the transaxle case.

**19. INSTALL REVERSE IDLER GEAR SUB-ASSEMBLY**

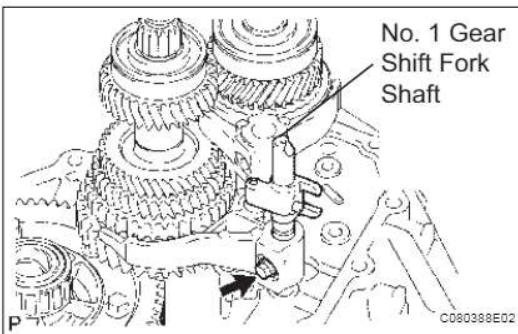
- (a) Coat the reverse idler gear, thrust washer and reverse idler gear shaft with gear oil, and install them as shown in the illustration.

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.

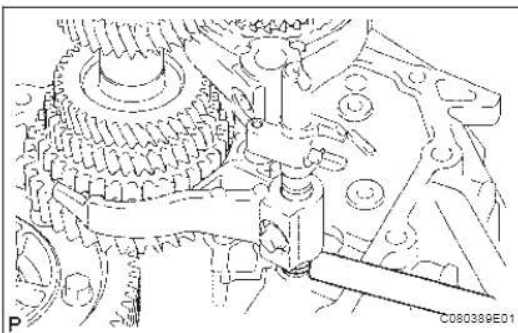
- (c) Apply sealant to the shift fork set bolt.

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)

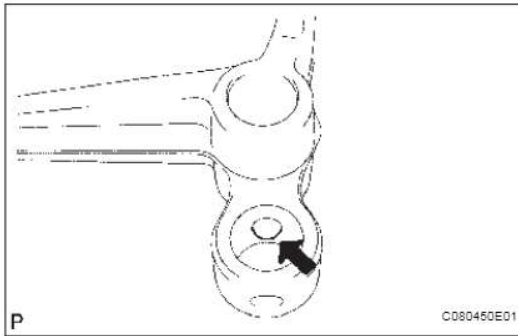


- (e) Using a brass bar and hammer, tap in a new shaft snap ring to the No. 1 gear shift fork shaft.

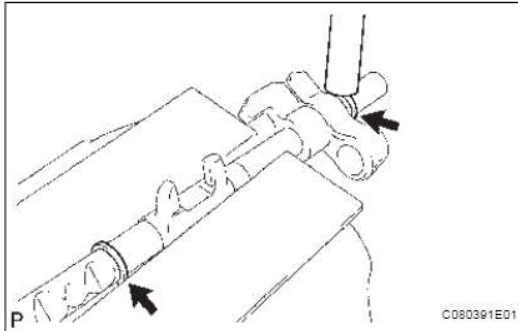
MX

MX-56

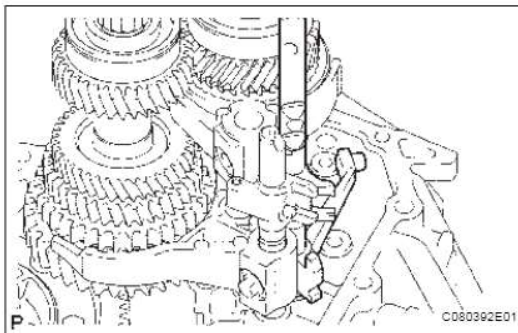
C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT

**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.

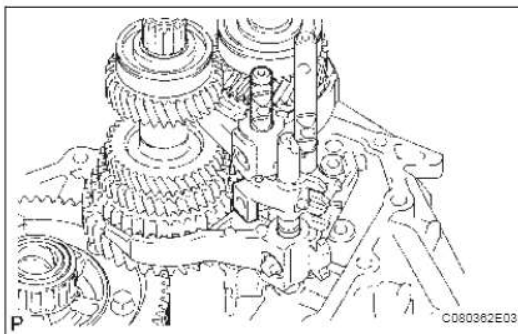


- (c) Using a brass bar and hammer, tap in 2 new shift fork shaft snap rings to the No. 3 shift fork shaft.



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

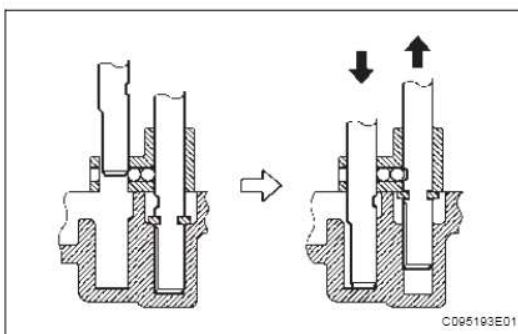
MX

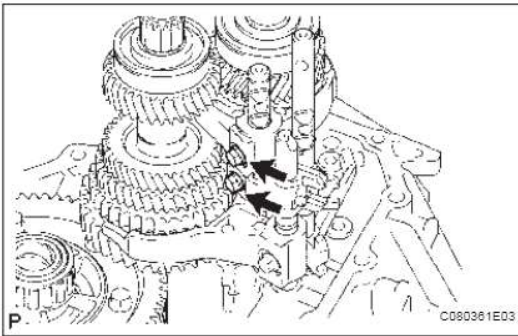
**22. INSTALL NO. 2 GEAR SHIFT FORK SHAFT**

- (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.



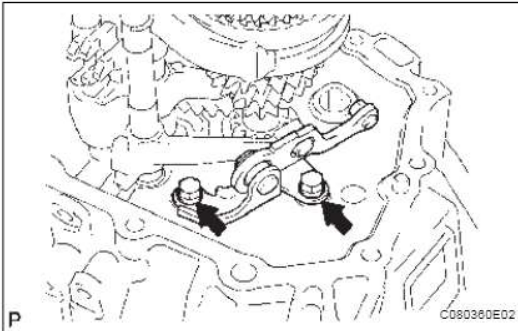
C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**MX-57**

- (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:

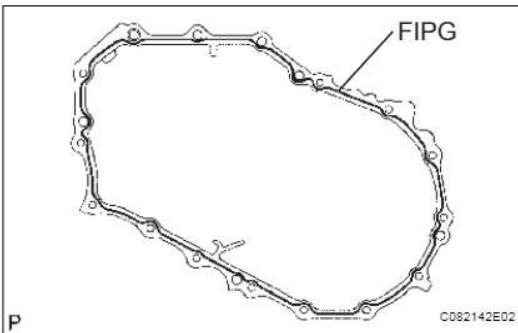
**Part No. 08833-00080, THREE BOND 1344,
LOCTITE 242 or equivalent**

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**

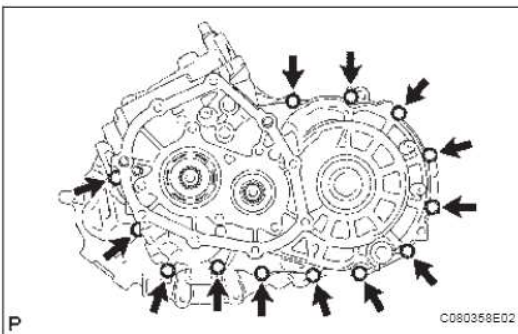
- (a) Apply FIPG to the transmission case, as shown in the illustration.

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.**

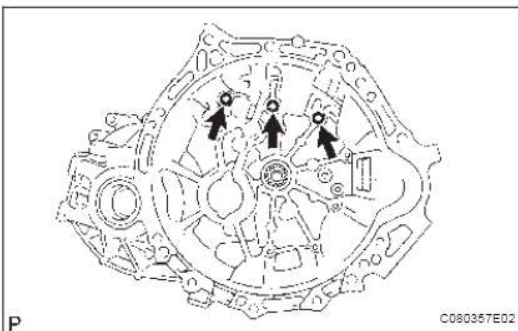


- (b) Coat the 13 bolts with sealant, and install them to the transmission case.

Sealant:

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

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



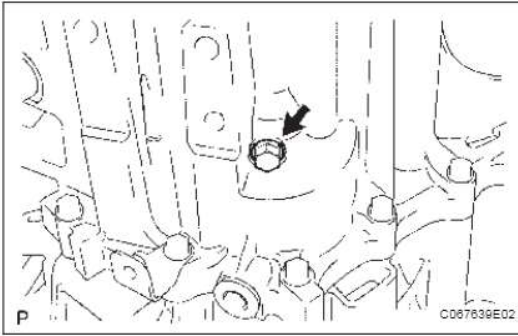
- (c) Coat the 3 bolts with sealant, and install them to the front transaxle case.

Sealant:

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

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

MX

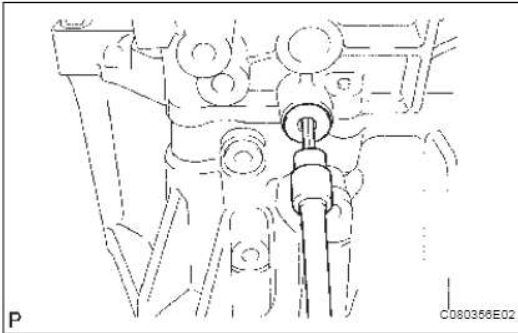
MX-58**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****25. INSTALL REVERSE IDLER GEAR SHAFT BOLT**

- (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)

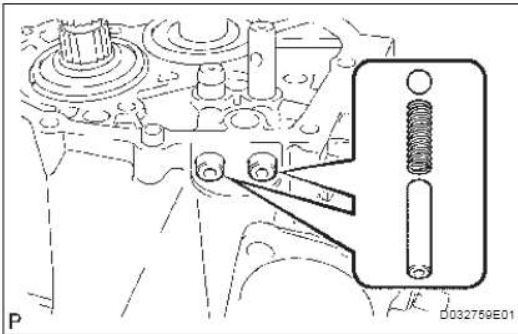
**26. INSTALL NO. 2 LOCK BALL ASSEMBLY**

- (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**

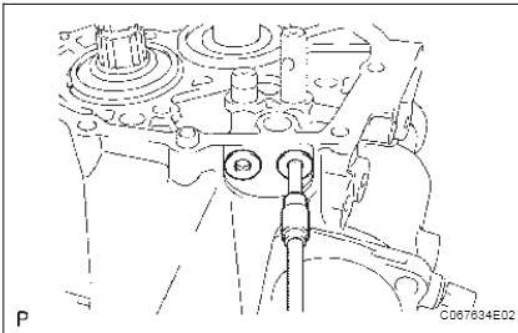
- (a) Install the 2 shift detent balls, 2 shift detent ball springs with 2 No. 1 shift detent ball spring seats to the manual transmission case.

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

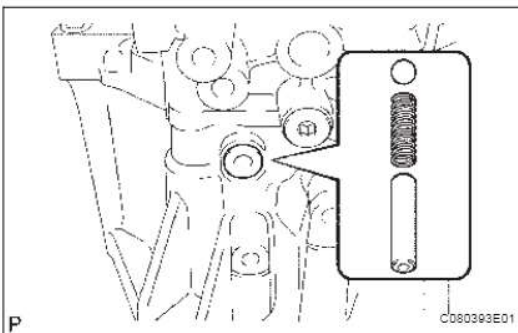
Sealant:

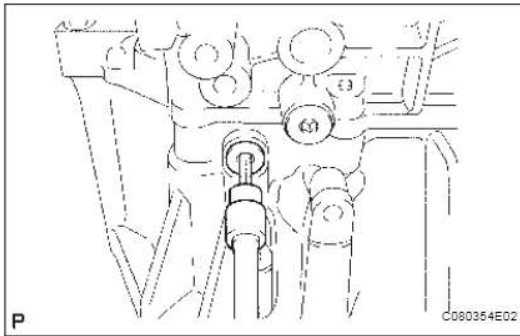
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

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.



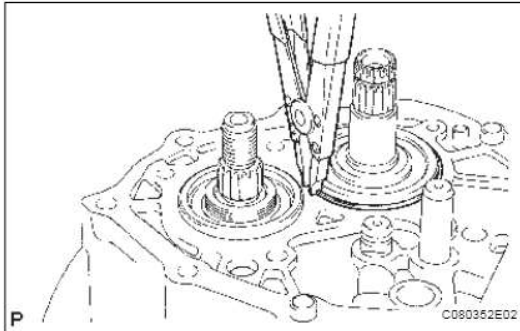
C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**MX-59**

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

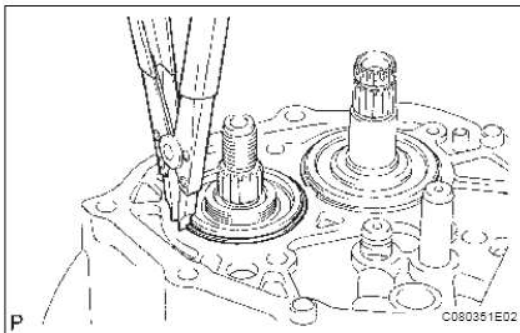
Sealant:

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

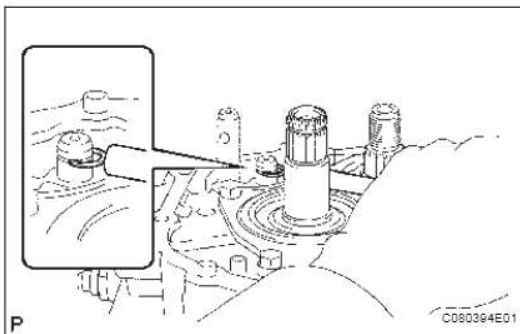
Torque: 22 N*m (224 kgf*cm, 16 ft.*lbf)

**28. INSTALL INPUT SHAFT REAR BEARING HOLE SNAP RING**

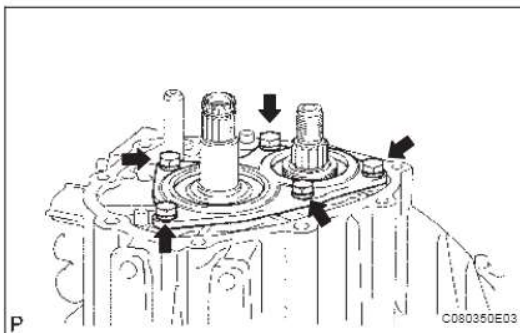
- (a) Using a snap ring expander, install the hole snap ring to the input shaft.

**29. INSTALL OUTPUT SHAFT REAR BEARING HOLE SNAP RING**

- (a) Using a snap ring expander, install the 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.

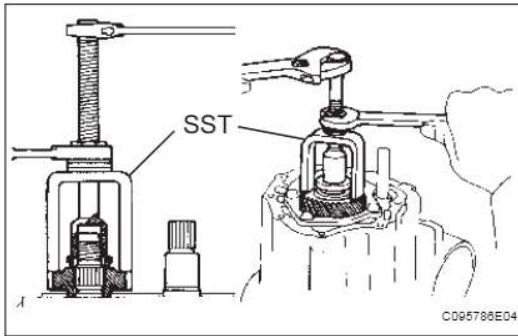
MX**31. INSTALL REAR BEARING RETAINER**

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

Sealant:

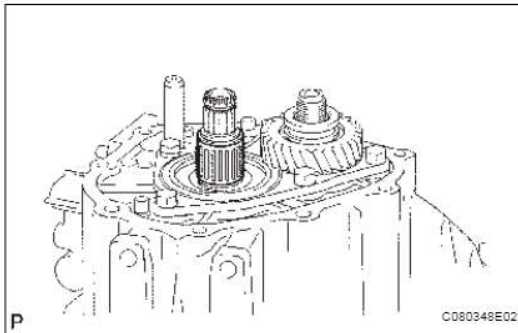
**Part No. 08833-00080, THREE BOND 1344,
LOCTITE 242 or equivalent**

Torque: 27 N*m (280 kgf*cm, 20 ft.*lbf)

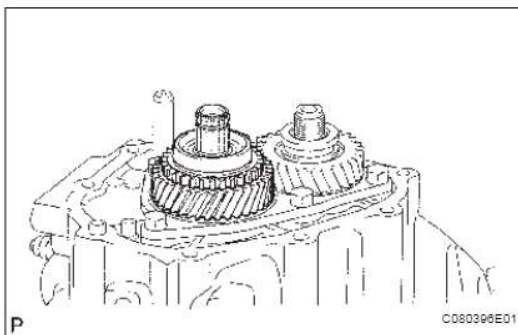
MX-60**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****32. INSTALL 5TH DRIVEN GEAR**

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

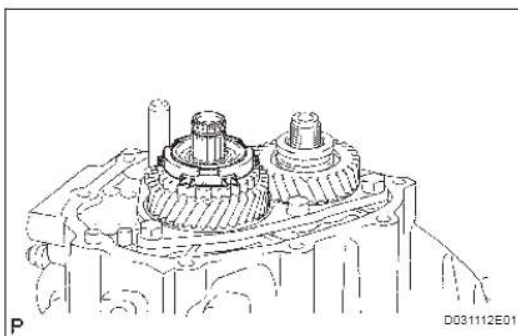
SST 09309-12020

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

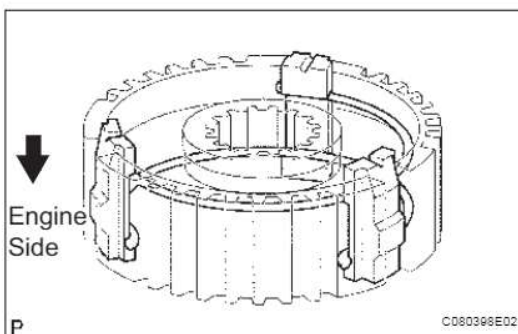
- (a) Coat the 5th gear needle roller bearing and 5th gear bearing spacer with gear oil, and install them to the input shaft.

**34. INSTALL 5TH GEAR**

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

**35. REMOVE NO. 3 SYNCHRONIZER RING**

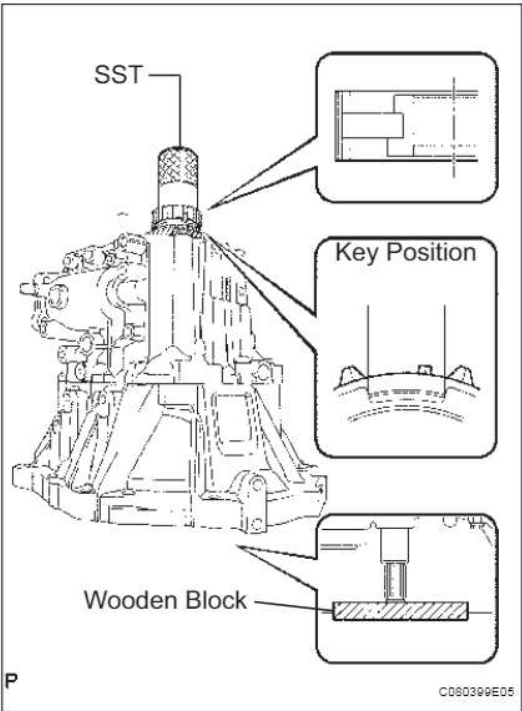
- (a) Coat the No. 3 synchronizer ring with gear oil, and install it to the 5th gear.

**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.

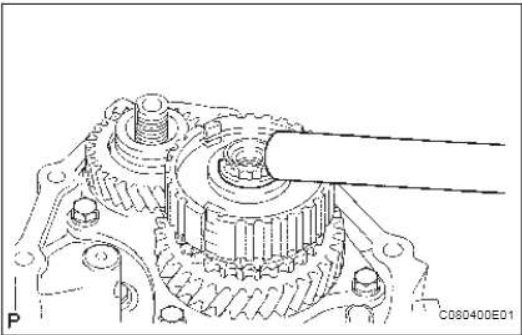
(c) Select a No. 3 clutch hub shaft snap ring that will allow minimum axial play.

Standard clearance:

0.1 mm (0.004 in.) or less

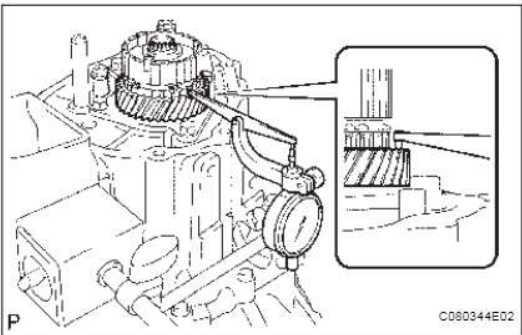
Standard snap ring thickness

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.

MX



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 0.02244 in.)

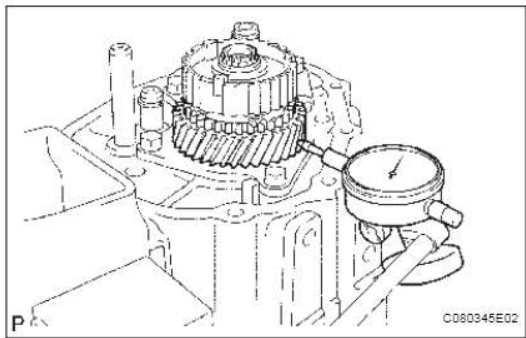
Maximum clearance:

0.57 mm (0.02244 in.)

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

MX-62

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT



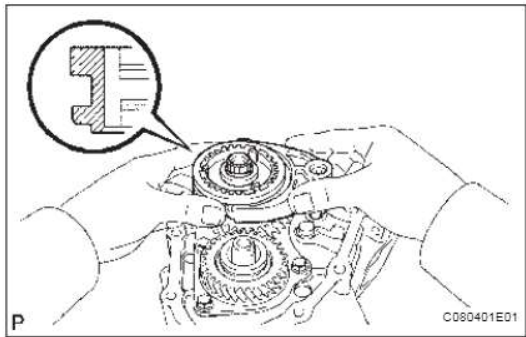
- 38. INSPECT 5TH GEAR RADIAL CLEARANCE**
(a) Using a dial indicator, measure the radial clearance.
Standard clearance

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.)

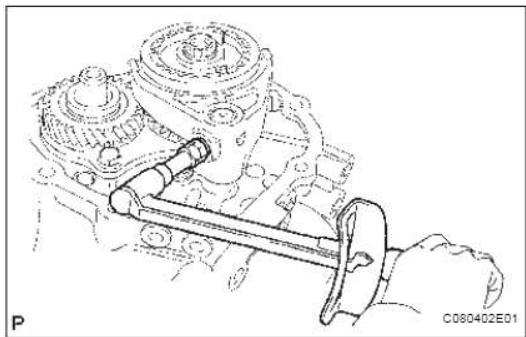
Maximum clearance

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

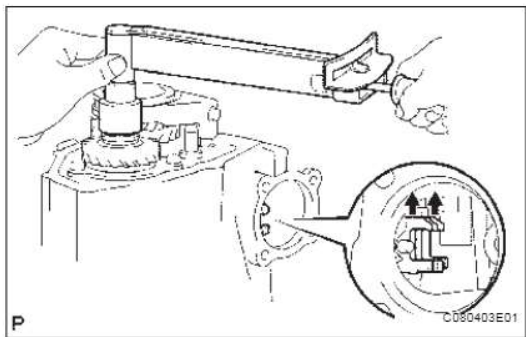
If the clearance is greater than the maximum, replace the gear, needle roller bearing or shaft.



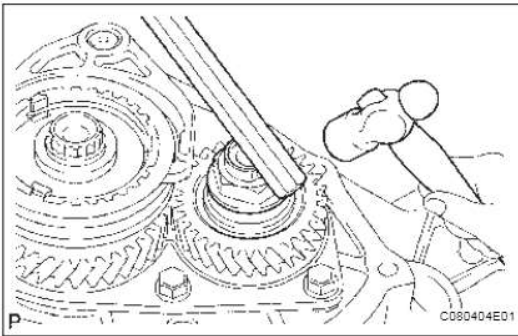
- 39. INSTALL NO. 3 GEAR SHIFT FORK**
(a) Coat the No. 3 transmission clutch hub sleeve with gear oil, and install it and the No. 3 gear shift fork to the No. 3 transmission clutch hub.
HINT:
Be sure to set the No. 3 transmission clutch hub in the correct orientation.



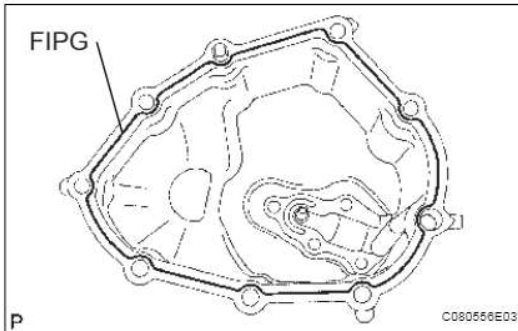
- (b) Coat the gear shift fork lock bolt with sealant, and install it to the No. 3 gear shift fork.
Sealant:
Part No. 08833-00080, **THREE BOND 1344**,
LOCTITE 242 or equivalent
Torque: 16 N*m (160 kgf*cm, 12 ft.*lbf)



- 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)

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**MX-63**

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

**41. INSTALL MANUAL TRANSMISSION CASE COVER SUB-ASSEMBLY**

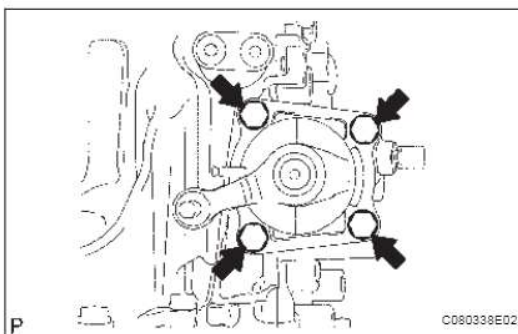
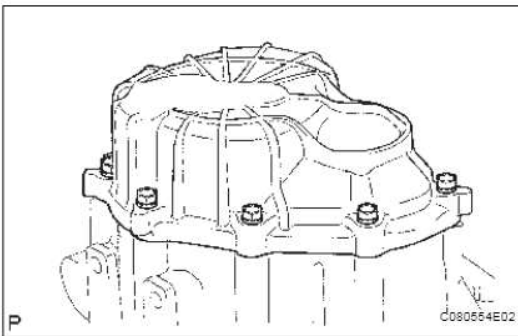
- (a) Apply FIPG to the transaxle case cover as shown in the illustration.

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.

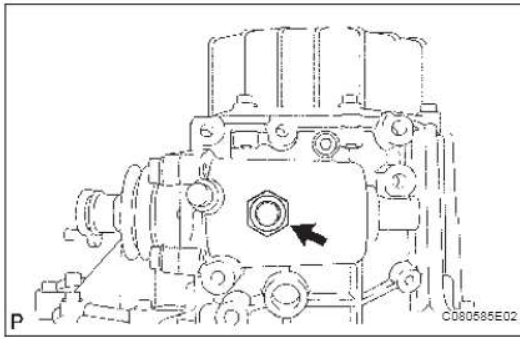
Sealant:**Part No. 08833-00080, THREE BOND 1344,****LOCTITE 242 or equivalent**

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

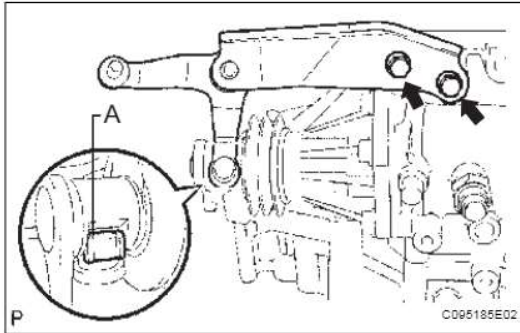
MX-64**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****43. INSTALL NO. 1 LOCK BALL ASSEMBLY**

- (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)

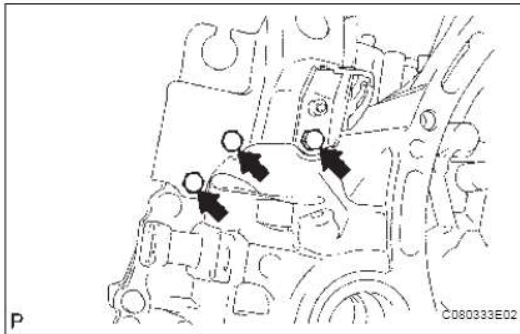
**44. INSTALL SELECTING BELLCRANK ASSEMBLY**

- (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)

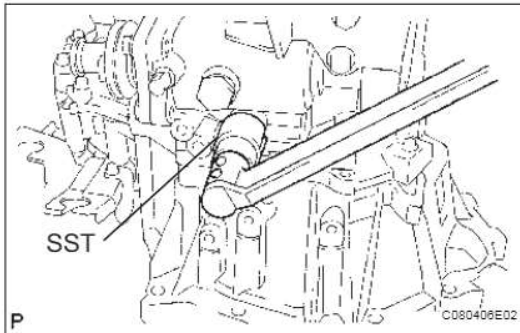
NOTICE:

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.

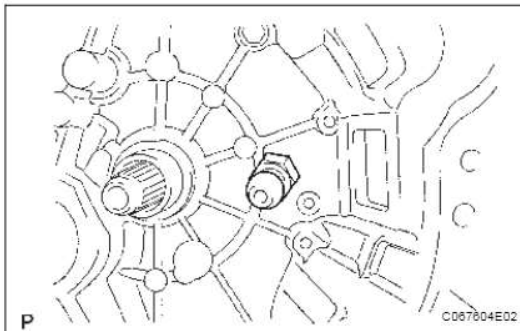
Torque: 18 N*m (188 kgf*cm, 14 ft.*lbf)

**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

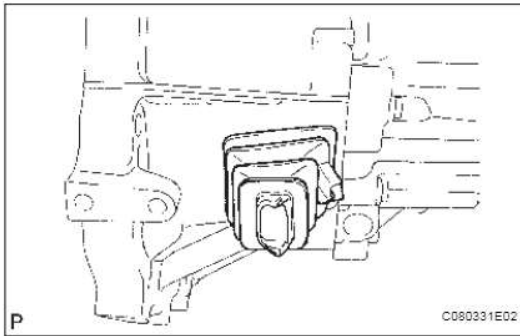
Torque: 40 N*m (410 kgf*cm, 30 ft.*lbf)

**47. INSTALL RELEASE FORK SUPPORT**

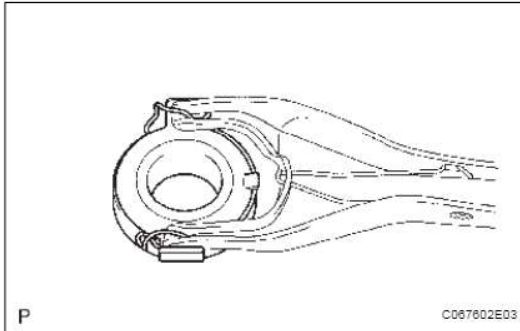
- (a) Install the release fork support to the front transaxle case.

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

MX

C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT**MX-65****48. INSTALL CLUTCH RELEASE FORK BOOT**

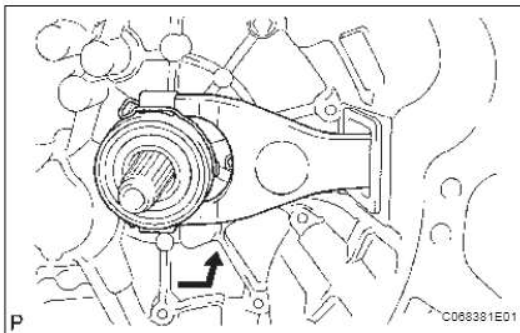
- (a) Install the clutch release fork boot to the front transaxle case.

**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.

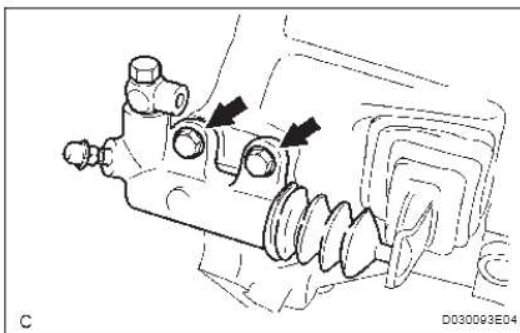
Clutch spline grease:

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.

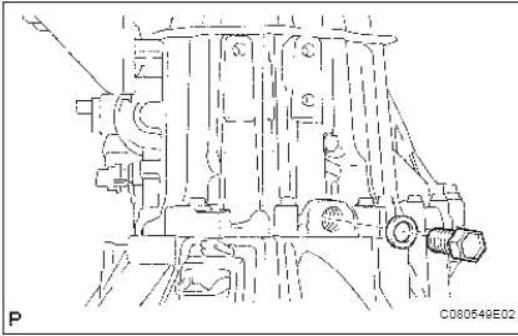
Torque: 11 N*m (115 kgf*cm, 8 ft.*lbf)

**52. INSTALL CLUTCH RELEASE CYLINDER ASSEMBLY**

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

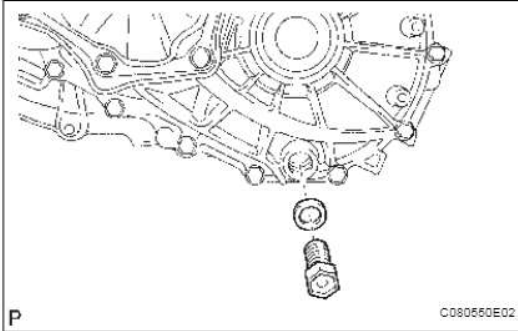
Torque: 12 N*m (120 kgf*cm, 9 ft.*lbf)

MX

MX-66**C50 MANUAL TRANSAXLE – MANUAL TRANSAXLE UNIT****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.

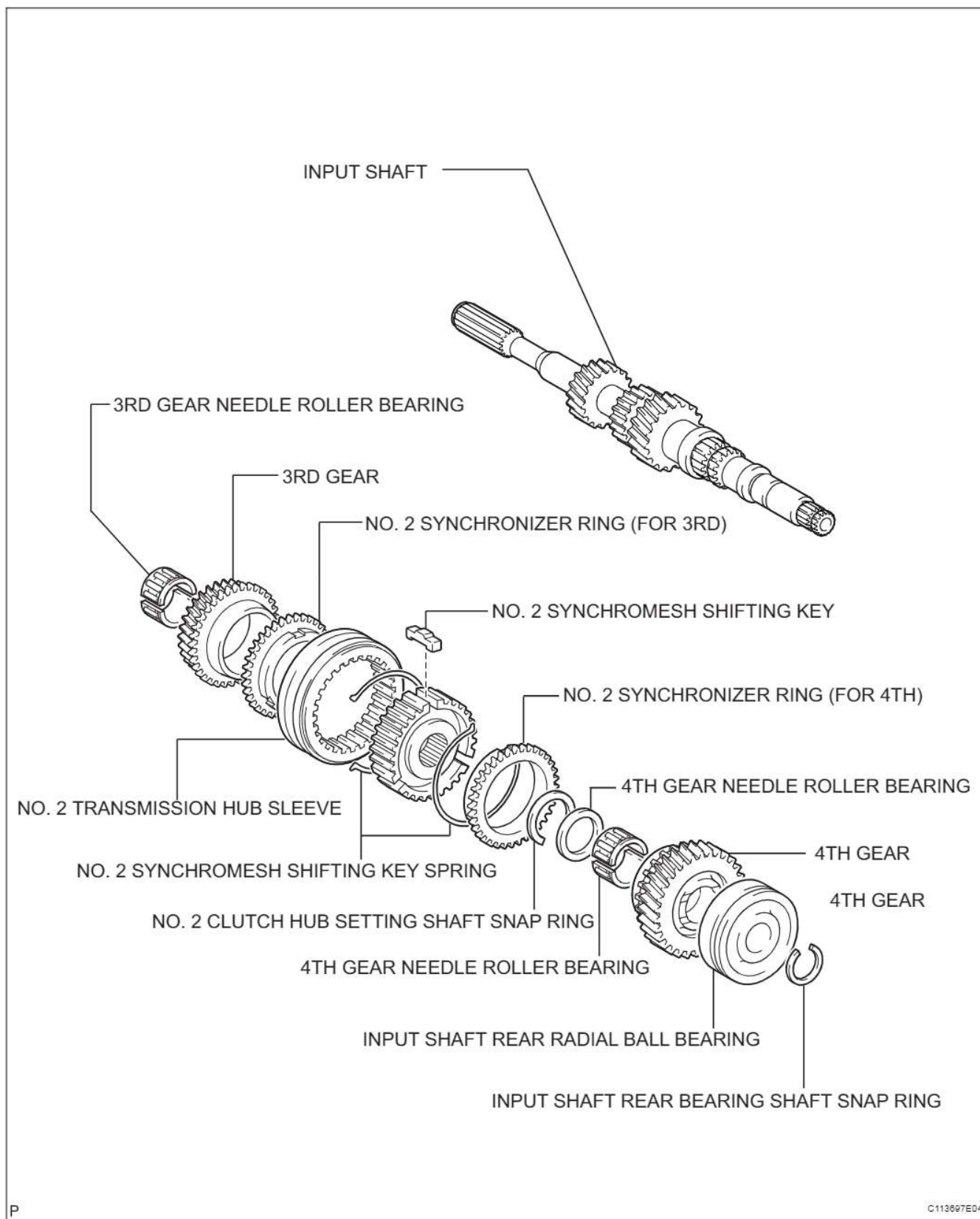
Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)

C50 MANUAL TRANSAXLE – INPUT SHAFT

MX-67

INPUT SHAFT

COMPONENTS



MX

MX-68

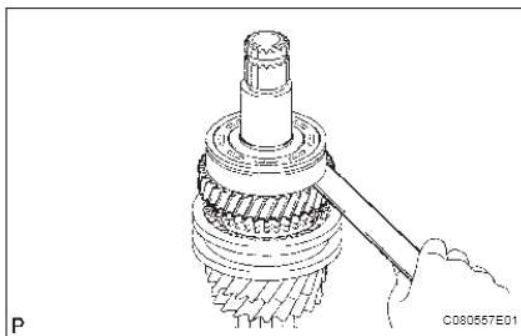
C50 MANUAL TRANSAXLE – INPUT SHAFT

DISASSEMBLY**1. INSPECT 4TH GEAR THRUST CLEARANCE**

- (a) Using a feeler gauge, measure the thrust clearance.

Standard clearance:**0.1 to 0.55 mm (0.0039 to 0.0217 in.)****Maximum clearance:****0.55 mm (0.0217 in.)**

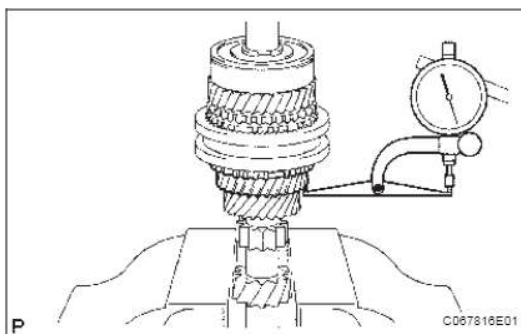
If the clearance is greater than the maximum, replace the No. 2 transmission clutch hub, 4th gear or input shaft rear radial ball bearing.

**2. INSPECT 3RD GEAR THRUST CLEARANCE**

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

Standard clearance:**0.1 to 0.35 mm (0.0039 to 0.0138 in.)****Maximum clearance:****0.35 mm (0.0138 in.)**

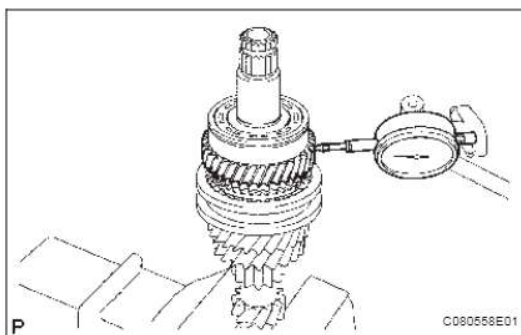
If the clearance is greater than the maximum, replace the No. 2 transmission clutch hub, 3rd gear or input shaft.

**3. INSPECT 4TH GEAR RADIAL CLEARANCE**

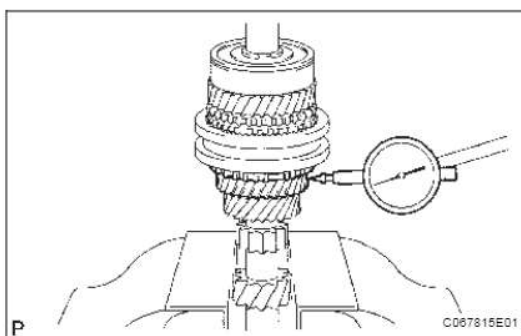
- (a) Using a dial indicator, measure the radial clearance between the gear and shaft.

Standard clearance:**0.009 to 0.050 mm (0.0004 to 0.0020 in.)****Maximum clearance:****0.050 mm (0.0020 in.)**

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

**4. INSPECT 3RD GEAR RADIAL CLEARANCE**

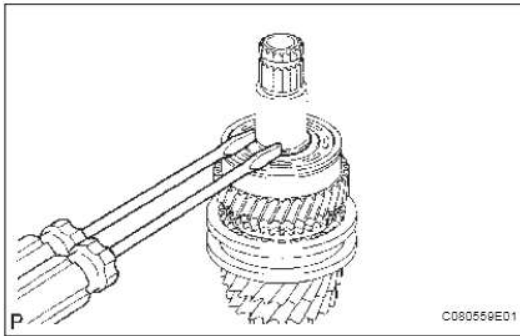
- (a) Using a dial indicator, measure the radial clearance between the gear and shaft.

Standard clearance

Bearing	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.)

If the clearance is not within the specification, replace the gear, needle roller bearing or shaft.

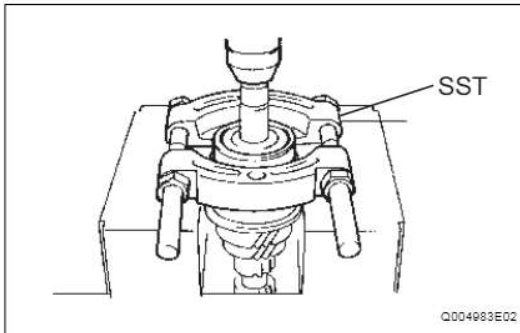
MX

C50 MANUAL TRANSAXLE – INPUT SHAFT**MX-69****5. REMOVE 4TH GEAR**

- (a) Using 2 screwdrivers and a hammer, tap out the input shaft rear bearing shaft snap ring from the input shaft.

HINT:

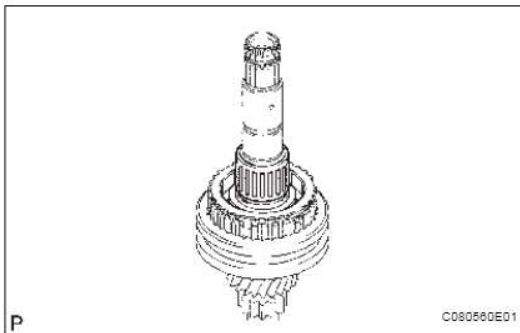
Use a cloth to prevent the snap ring from springing away.



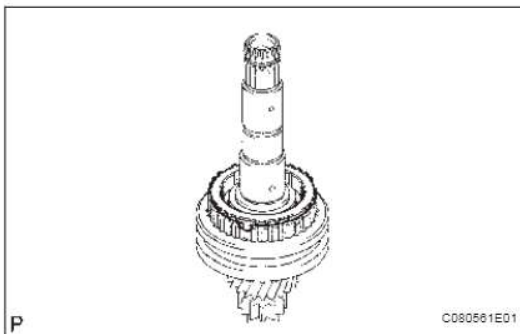
- (b) Using SST and a press, press out the input shaft rear radial ball bearing and 4th gear from the input shaft.

SST 09950-00020**NOTICE:**

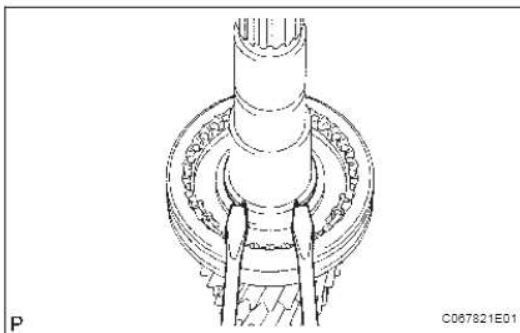
- Do not tighten SST excessively.
- Support the input shaft assembly by hand so that it will not drop.

**6. REMOVE 4TH GEAR NEEDLE ROLLER BEARING**

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

**7. REMOVE NO. 2 SYNCHRONIZER RING (for 4th Gear)**

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

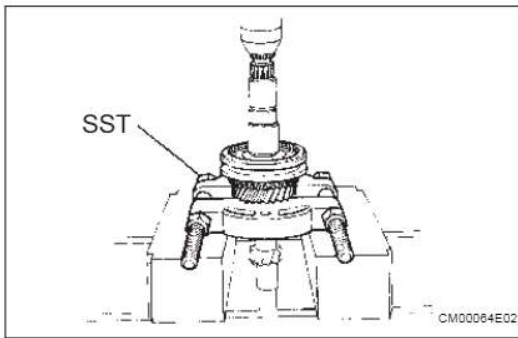
**8. REMOVE 3RD GEAR**

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

HINT:

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

MX

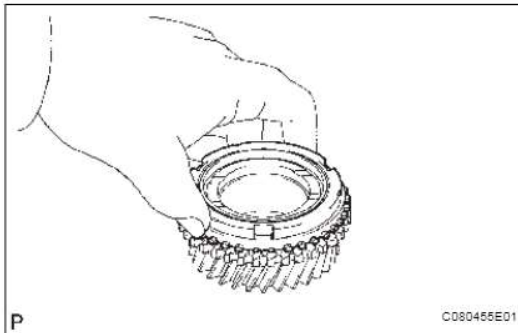
MX-70**C50 MANUAL TRANSAXLE – INPUT SHAFT**

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

SST 09950-00020

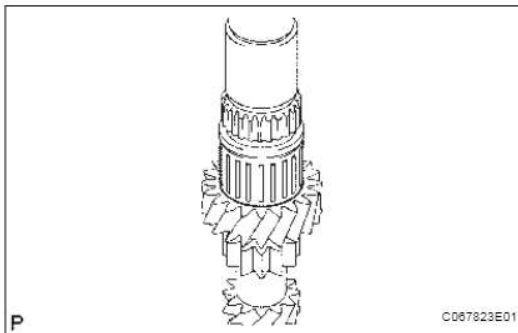
NOTICE:

- Do not tighten SST excessively.
- Support the input shaft by hand so that it will not drop.



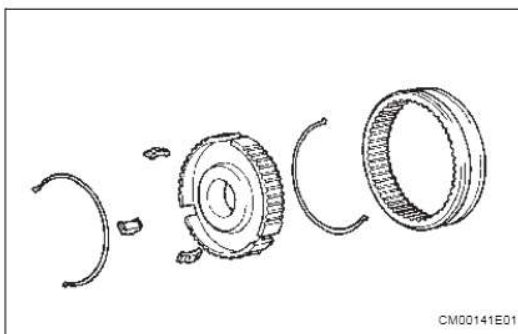
9. REMOVE NO. 2 SYNCHRONIZER RING (for 3rd Gear)

- (a) Remove the No. 2 synchronizer ring from the 3rd gear.



10. REMOVE 3RD GEAR NEEDLE ROLLER BEARING

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



11. REMOVE NO. 2 TRANSMISSION HUB SLEEVE

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

NOTICE:

Use a cloth to keep the shifting key and shifting key from spring springing away.

INSPECTION

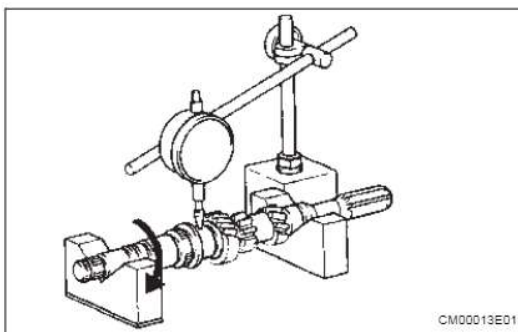
1. INSPECT INPUT SHAFT

- (a) Using a dial indicator, measure the input shaft runout.

Maximum runout:

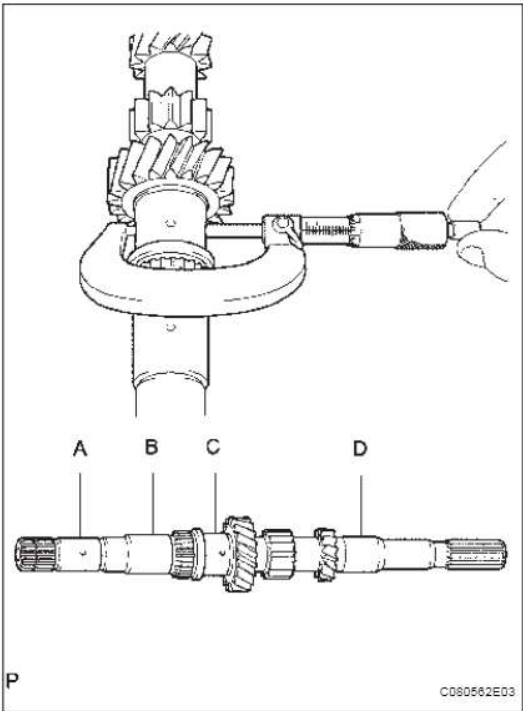
0.015 mm (0.00059 in.)

If the runout is greater than the maximum, replace the input shaft.



C50 MANUAL TRANSAXLE – INPUT SHAFT

MX-71



- (b) Using a micrometer, measure the diameter of the input shaft journal surface.
- Standard diameter**

Journal Position	Specified Condition
A	24.885 to 24.900 mm (0.9797 to 0.9803 in.)
B	28.991 to 29.006 mm (1.1414 to 1.1420 in.)
C	30.985 to 31.000 mm (1.2198 to 1.2204 in.)
D	24.985 to 25.000 mm (0.9836 to 0.9842 in.)

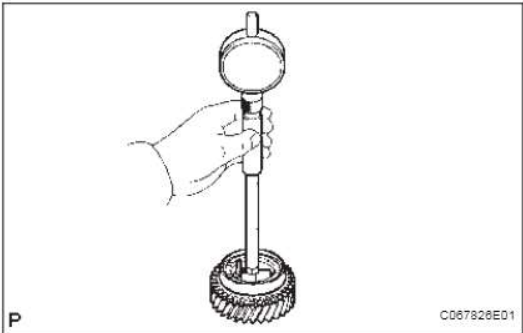
Minimum diameter

Journal Position	Specified Condition
A	24.885 mm (0.9797 in.)
B	28.991 mm (1.1414 in.)
C	30.985 mm (1.2198 in.)
D	24.985 mm (0.9836 in.)

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

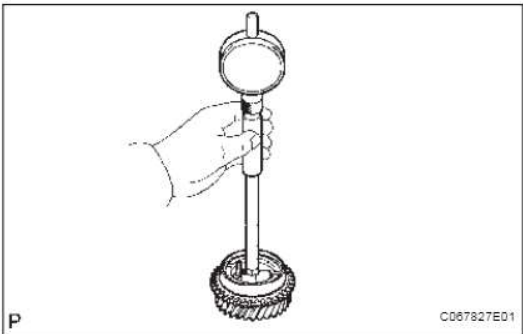
2. INSPECT 4TH GEAR

- (a) Using a cylinder gauge, measure the inside diameter.
- Standard inside diameter:**
34.015 to 34.031 mm (1.3391 to 1.3398 in.)
- Maximum inside diameter:**
34.031 mm (1.3398 in.)
- If the inside diameter is greater than the maximum, replace the 4th gear.



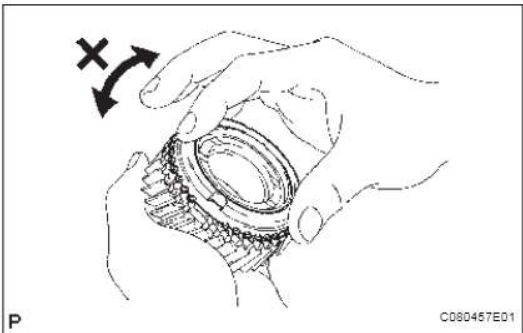
3. INSPECT 3RD GEAR

- (a) Using a cylinder gauge, measure the inside diameter.
- Standard inside diameter:**
36.015 to 36.031 mm (1.4179 to 1.4185 in.)
- Maximum inside diameter:**
36.031 mm (1.4185 in.)
- If the inside diameter is greater than the maximum, replace the 3rd gear.



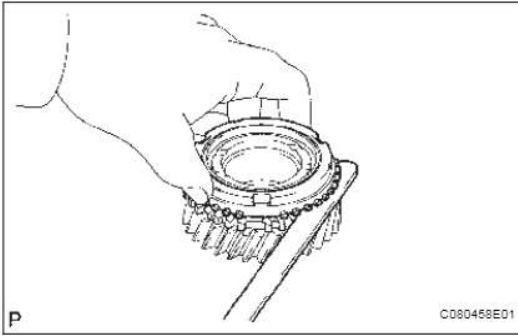
4. INSPECT NO. 2 SYNCHRONIZER RING (for 4th Gear)

- (a) Check for wear or damage.
- (b) Coat the 4th gear cone with gear oil. Turn the synchronizer ring in one direction while pushing it against the 4th gear cone. Check that the ring locks. If the synchronizer outer ring does not lock, replace the ring or 4th gear.



MX-72

C50 MANUAL TRANSAXLE – INPUT SHAFT



- (c) Using a feeler gauge, measure the clearance between the No. 2 synchronizer ring and 4th gear with the No. 2 synchronizer ring contacting the cone of the 4th gear.

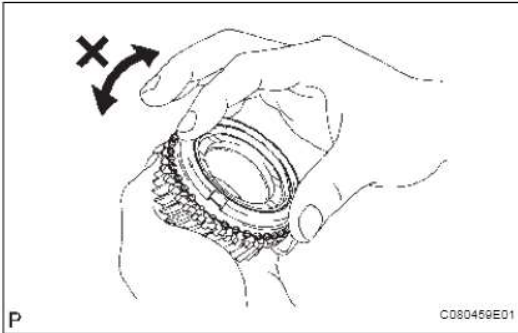
Standard clearance:

0.75 to 1.65 mm (0.0295 to 0.0649 in.)

Minimum clearance:

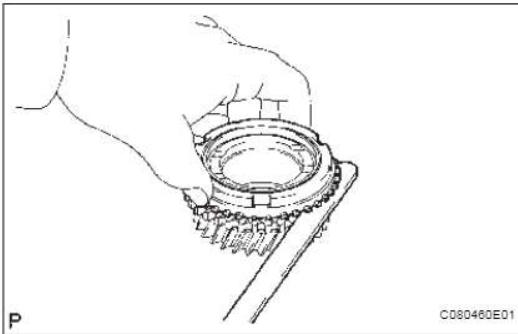
0.75 mm (0.0295 in)

If the clearance is less than the minimum, replace the synchronizer ring.



5. INSPECT NO. 2 SYNCHRONIZER RING (for 3rd Gear)

- (a) Check for wear or damage.
- (b) Coat the 3rd gear cone with gear oil. Turn the synchronizer ring in one direction while pushing it against the 3rd gear cone. Check that the ring locks. If the synchronizer outer ring does not lock, replace the ring or 3rd gear.



- (c) Using a feeler gauge, check the clearance between the No. 2 synchronizer ring and 3rd gear with the No. 2 synchronizer ring contacting the cone of the 3rd gear.

Standard clearance:

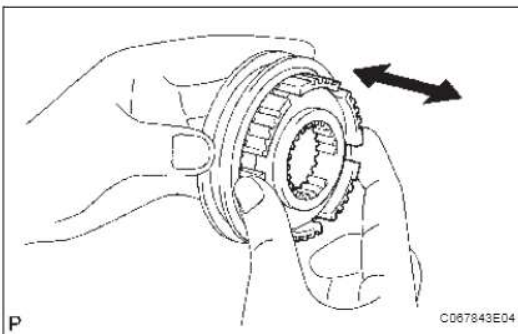
0.75 to 1.65 mm (0.0295 to 0.0650 in.)

Minimum clearance:

0.75 mm (0.0295 in)

If the clearance is less than the minimum, replace the synchronizer ring.

MX

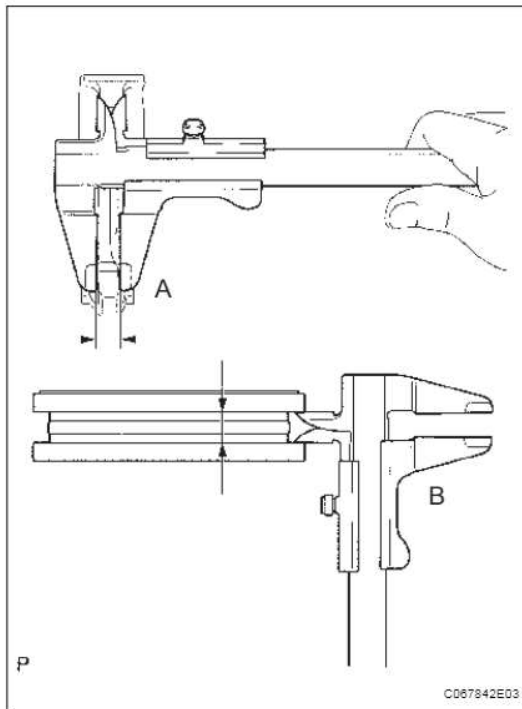


6. INSPECT NO. 2 TRANSMISSION HUB SLEEVE

- (a) Check the sliding condition between the No. 2 transmission hub sleeve and No. 2 transmission clutch hub.
- (b) Check that the spline gear edges of the No. 2 transmission hub sleeve are not worn down.

C50 MANUAL TRANSAXLE – INPUT SHAFT

MX-73

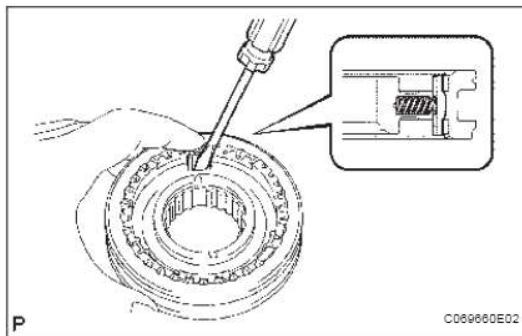


- (c) Using a vernier caliper, measure the width of the No. 2 transmission hub sleeve groove (B) and the thickness of the claw part on the No. 2 gear shift fork (A), and calculate the clearance.

Standard clearance:

$$B - A = 0.15 \text{ to } 0.35 \text{ mm (0.0059 to 0.0137 in.)}$$

If the clearance is not within the specification, replace the No. 2 transmission hub sleeve and No. 2 gear shift fork.

**REASSEMBLY****1. INSTALL NO. 2 TRANSMISSION HUB SLEEVE**

- (a) Coat the No. 2 transmission hub sleeve with gear oil, and install it to the No. 2 transmission clutch hub.

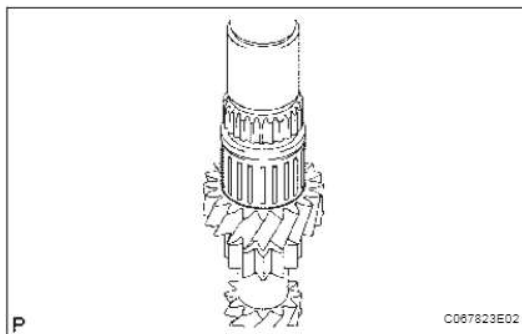
NOTICE:

Be sure to set the No. 2 transmission hub sleeve and No. 2 transmission clutch hub in the correct orientation.

- (b) Using a screwdriver, install the 3 synchromesh key springs with 3 No. 2 synchromesh shifting keys to the No. 2 transmission clutch hub.

2. INSTALL 3RD GEAR NEEDLE ROLLER BEARING

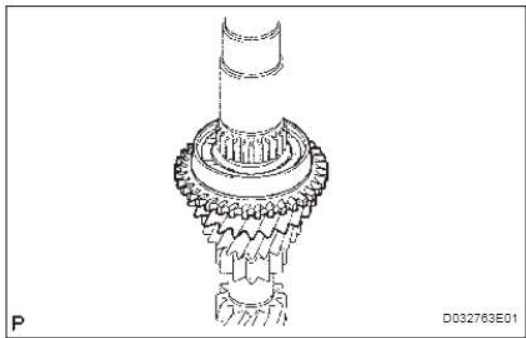
- (a) Coat the 3rd gear needle roller bearing with gear oil, and install it to the input shaft.



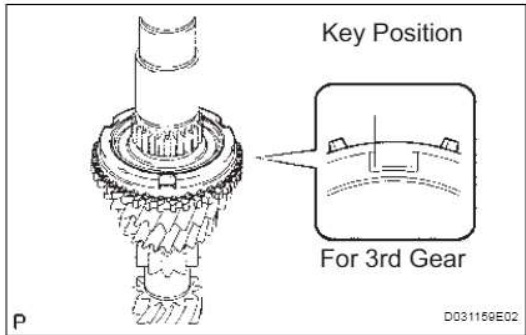
MX

MX-74

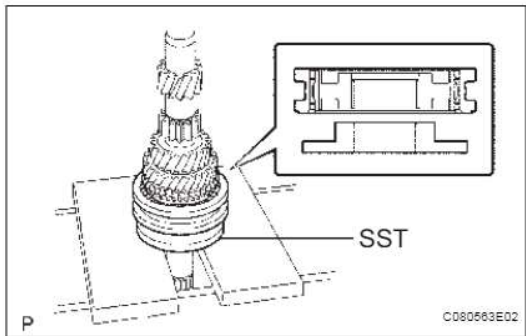
C50 MANUAL TRANSAXLE – INPUT SHAFT



3. **INSTALL 3RD GEAR**
- (a) Coat the 3rd gear with gear oil, and install it to the input shaft.



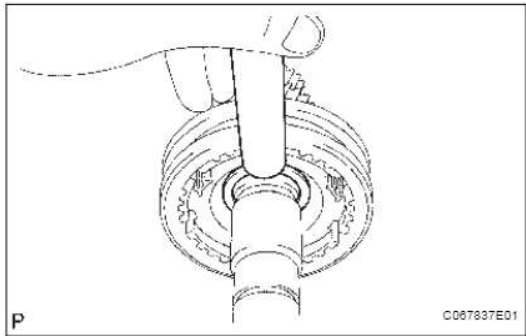
4. **INSTALL NO. 2 SYNCHRONIZER RING (for 3rd Gear)**
- (a) Coat the No. 2 synchronizer ring with gear oil, and install it to the 3rd gear.

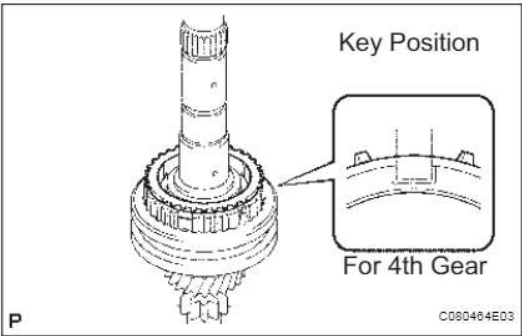


5. **INSTALL NO. 2 TRANSMISSION CLUTCH HUB**
- (a) Using SST and a press, press in the No. 2 transmission clutch hub to the input shaft.
SST 09316-60011 (09316-00021)
NOTICE:
Fit the synchromesh shifting key into the groove of the synchronizer ring correctly.
- (b) Select a snap ring that will allow minimum axial play.
Standard clearance:
0.1 mm (0.004 in.) or less
Standard snap ring thickness

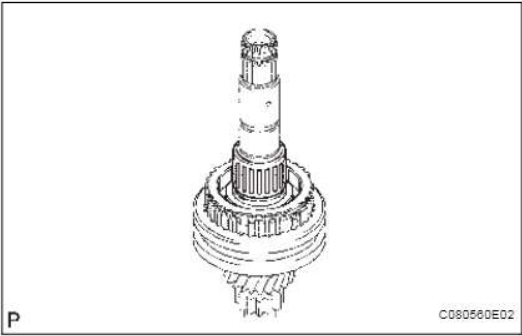
Mark	Thickness mm (in)
0	2.30 (0.0906)
1	2.36 (0.0929)
2	2.42 (0.0953)
3	2.48 (0.0976)
4	2.54 (0.1000)
5	2.60 (0.1024)

- (c) Using a brass bar and hammer, and tap in the snap ring to the input shaft.

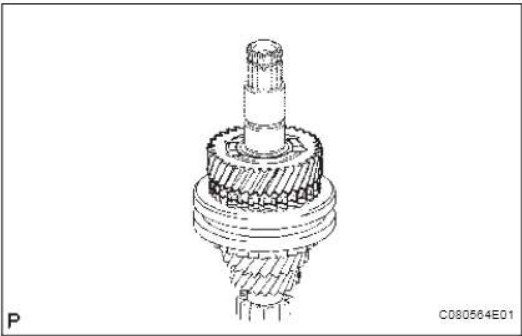




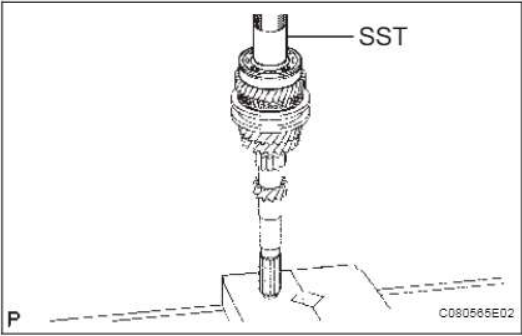
6. **INSTALL NO. 2 SYNCHRONIZER RING (for 4th Gear)**
(a) Coat the No. 2 synchronizer ring with gear oil, and install it to the No. 2 transmission clutch hub.



7. **INSTALL 4TH GEAR NEEDLE ROLLER BEARING**
(a) Coat the 4th gear needle roller bearing and 4th gear bearing spacer with gear oil, and install them to the No. 2 transmission clutch hub.



8. **INSTALL 4TH GEAR**
(a) Coat the 4th gear with gear oil, and install it to the input shaft.

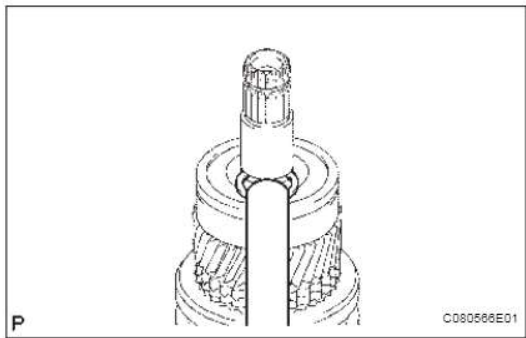


9. **INSTALL REAR INPUT SHAFT BEARING SHAFT SNAP RING**
(a) Using SST and a press, press in the radial ball bearing to the input shaft.
SST 09608-04031
(b) Select a snap ring that will allow minimum axial play.
Standard clearance:
0.1 mm (0.004 in.) or less
Standard snap ring thickness

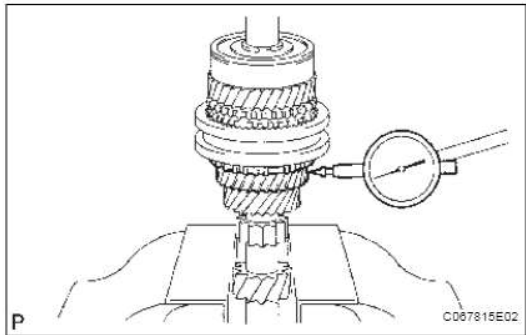
Mark	Thickness mm (in)
A	2.29 (0.0901)
B	2.35 (0.0925)
C	2.41 (0.0948)
D	2.47 (0.0972)
E	2.53 (0.0996)
F	2.59 (0.1019)

MX-76

C50 MANUAL TRANSAXLE – INPUT SHAFT



- (c) Using a brass bar and hammer, and tap in the snap ring to the input shaft.
- NOTICE:**
Take care not to damage the journal surface of the snap ring.

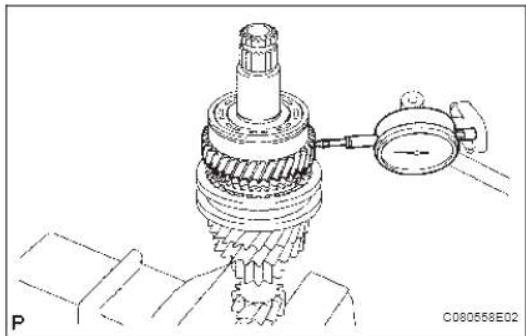


10. INSPECT 3RD GEAR RADIAL CLEARANCE

- (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.)

If the clearance is not within the specification, replace the gear, needle roller bearing or shaft.



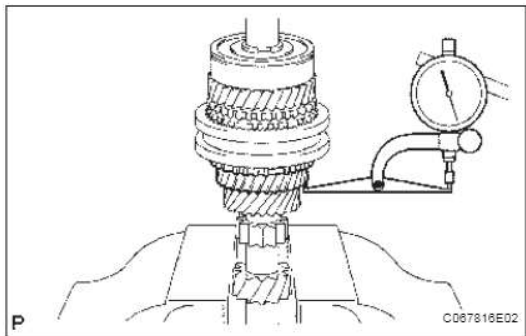
11. INSPECT 4TH GEAR RADIAL CLEARANCE

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

Item	Specified Condition
KOYO made	0.009 to 0.050 mm (0.0004 to 0.0020 in.)
NSK made	0.009 to 0.050 mm (0.0004 to 0.0020 in.)

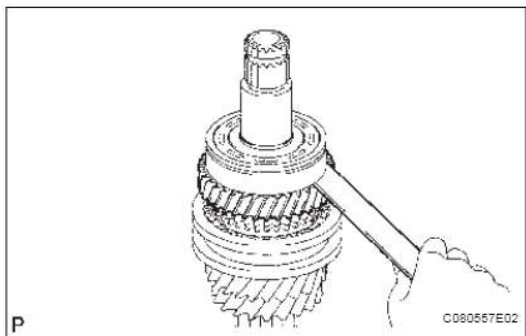
If the clearance is not within the specification, replace the gear, needle roller bearing or shaft.

MX



12. INSPECT 3RD GEAR THRUST CLEARANCE

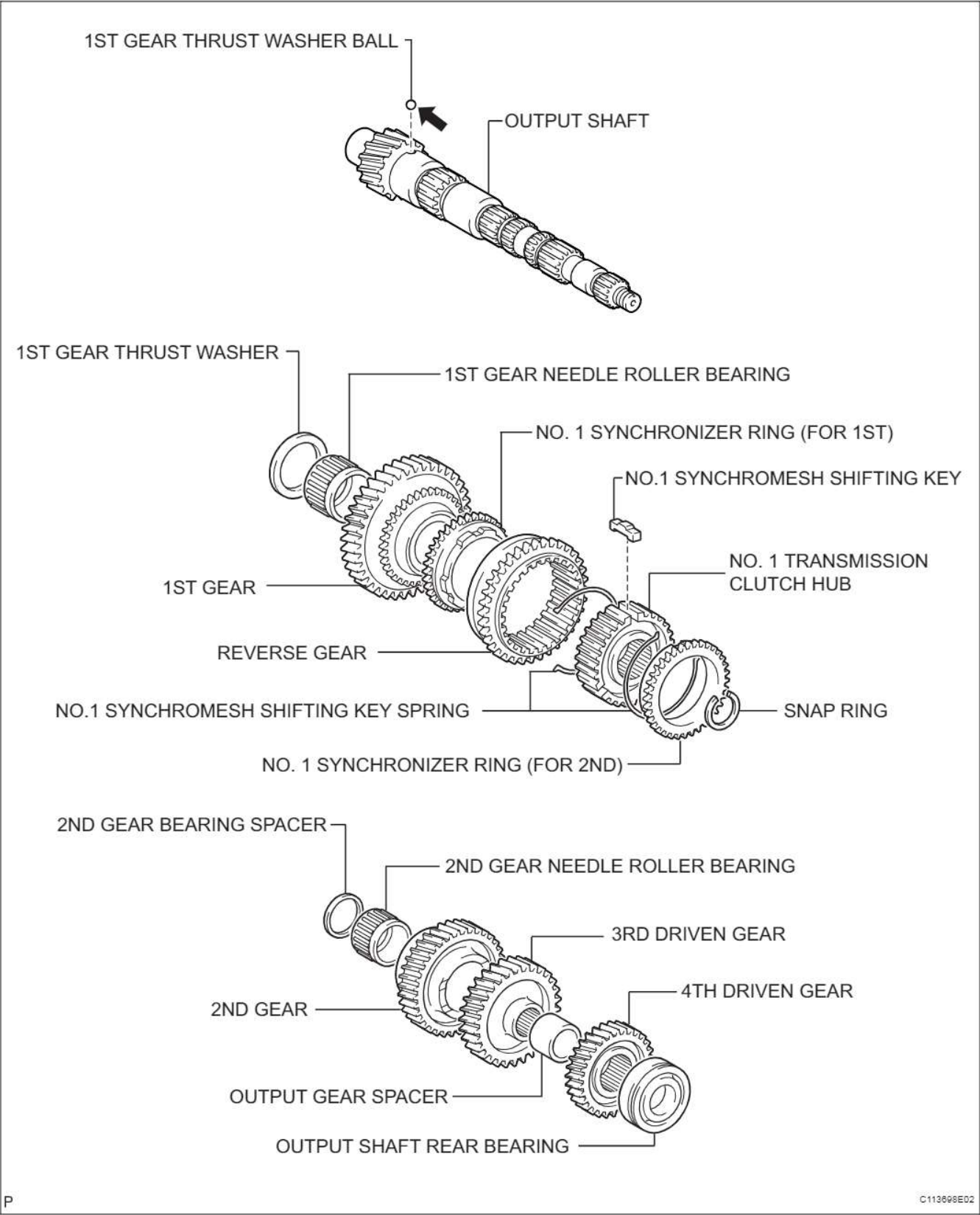
- (a) Using a dial indicator, measure the thrust clearance.
- Standard clearance:**
0.1 to 0.35 mm (0.0039 to 0.0138 in.)
- If the clearance is not within the specification, replace the gear, No. 2 synchronizer ring or No. 2 transmission clutch hub.

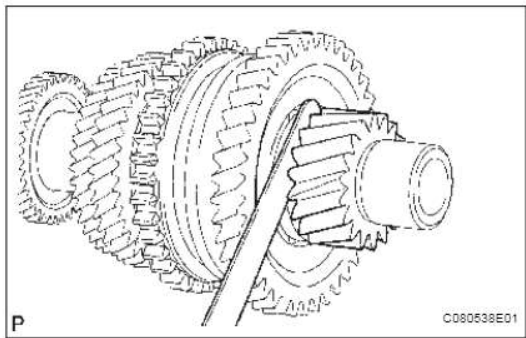


13. INSPECT 4TH GEAR THRUST CLEARANCE

- (a) Using a feeler gauge, measure the thrust clearance.
- Standard clearance:**
0.1 to 0.55 mm (0.0039 to 0.0217 in.)
- If the clearance is not within the specification, replace the gear or input shaft rear radial ball bearing.

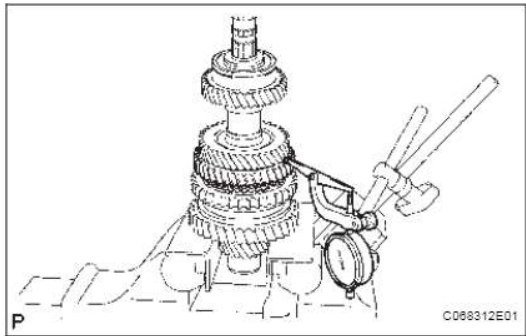
OUTPUT SHAFT
COMPONENTS



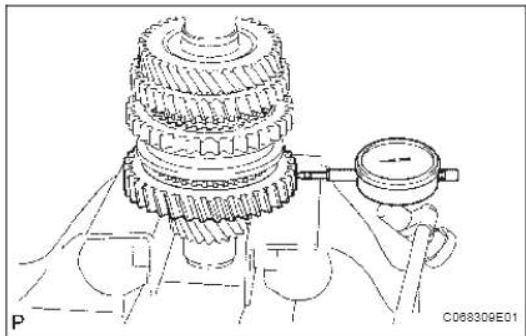


DISASSEMBLY

1. INSPECT 1ST GEAR THRUST CLEARANCE
- (a) Using a feeler gauge, measure the thrust clearance.
- Standard clearance:**
0.10 to 0.40 mm (0.0039 to 0.0157 in.)
- Maximum clearance:**
0.40 mm (0.0157 in.)
- If the clearance is greater than the maximum, replace the 1st gear or No. 1 transmission clutch hub.



2. INSPECT 2ND GEAR THRUST CLEARANCE
- (a) Using a dial indicator, measure the thrust clearance.
- Standard clearance:**
0.10 to 0.45 mm (0.0039 to 0.0177 in.)
- Maximum clearance:**
0.45 mm (0.0177 in.)
- If the clearance is greater than the maximum, replace the No. 1 transmission clutch hub, 2nd gear or 3rd driven gear.



3. INSPECT 1ST GEAR RADIAL CLEARANCE
- (a) Using a dial indicator, measure the radial clearance between the gear and shaft.
- 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.

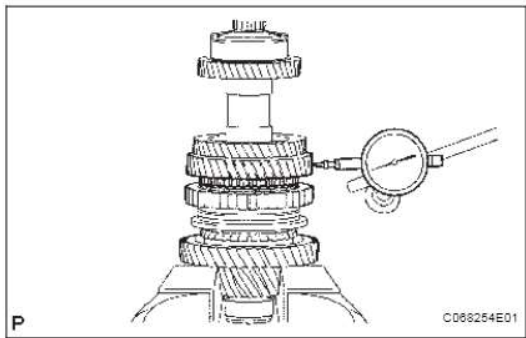
4. INSPECT 2ND GEAR RADIAL CLEARANCE
- (a) Using a dial indicator, measure the radial clearance.
- Standard clearance**

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.)

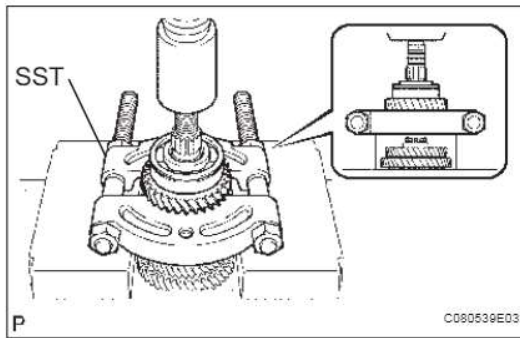
Maximum clearance

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

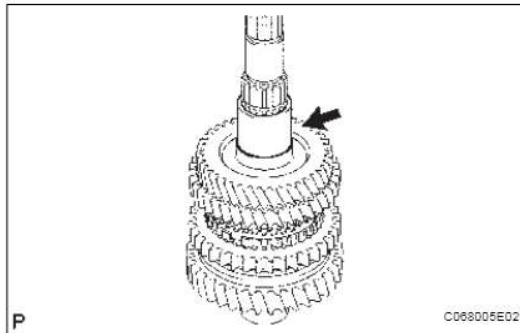
If the clearance is greater than the maximum, replace the 2nd gear needle roller bearing.



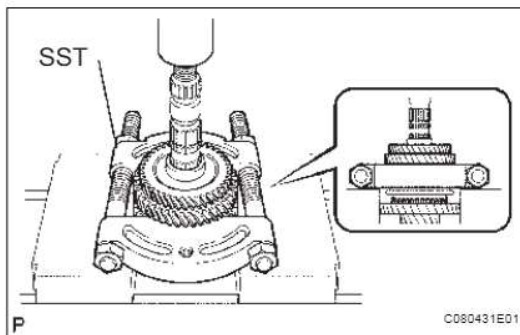
MX

C50 MANUAL TRANSAXLE – OUTPUT SHAFT**MX-79****5. REMOVE 4TH DRIVEN GEAR**

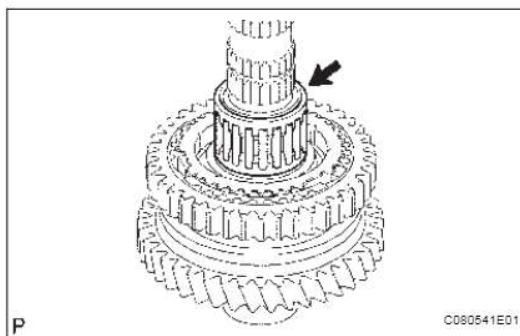
- (a) Using SST and a press, press out the output shaft rear bearing and 4th driven gear from the output shaft.

SST 09950-00020**6. REMOVE OUTPUT GEAR SPACER**

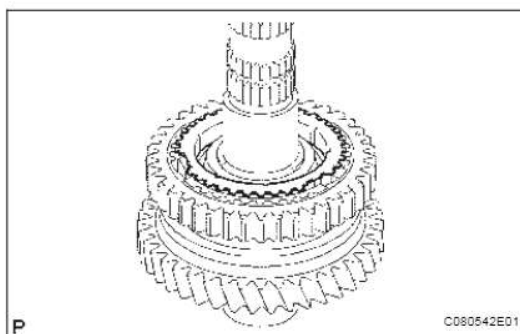
- (a) Remove the output gear spacer from the output shaft.

**7. REMOVE 2ND GEAR**

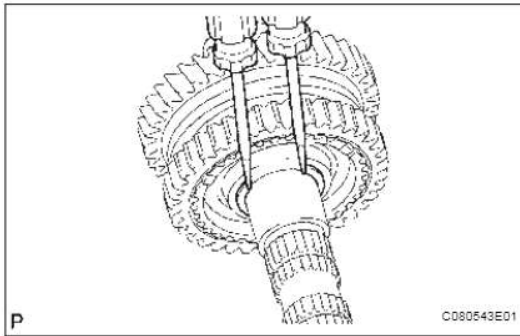
- (a) Using SST and a press, press out the 3rd driven gear with 2nd gear from the output shaft.

SST 09950-00020**8. REMOVE 2ND GEAR NEEDLE ROLLER BEARING**

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

MX**9. REMOVE NO. 1 SYNCHRONIZER RING (for 2nd Gear)**

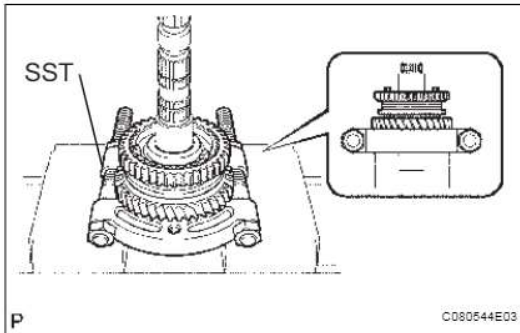
- (a) Remove the No. 1 synchronizer ring from the output shaft.

MX-80**C50 MANUAL TRANSAXLE – OUTPUT SHAFT****10. REMOVE 1ST GEAR**

- (a) Using 2 screwdrivers and a hammer, remove the snap ring from the output shaft.

NOTICE:

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

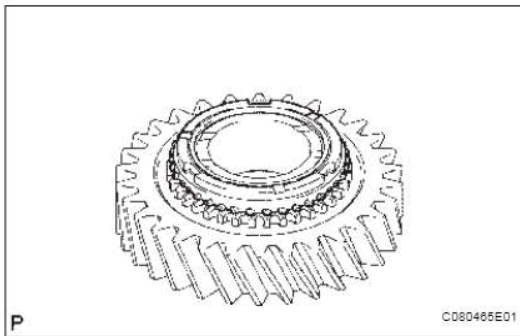


- (b) Using SST and a press, press out the No. 1 clutch hub and 1st gear from the output shaft.

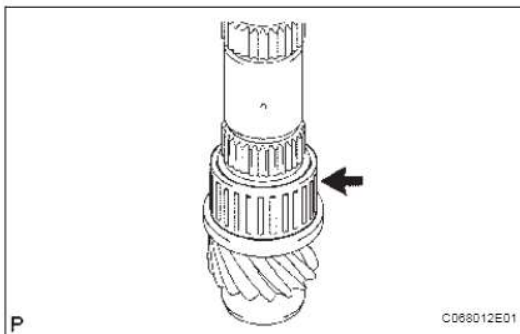
SST 09950-00020

NOTICE:

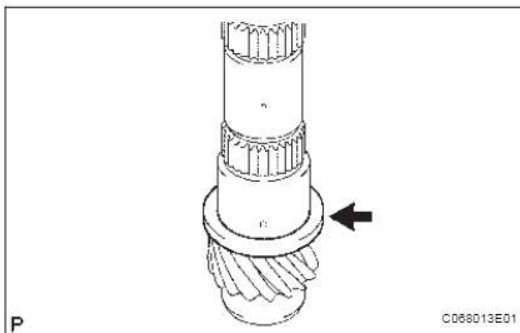
- Do not tighten SST excessively.
- Support the input shaft by hand so that it will not drop.

**11. REMOVE NO. 1 SYNCHRONIZER RING (for 1st Gear)**

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

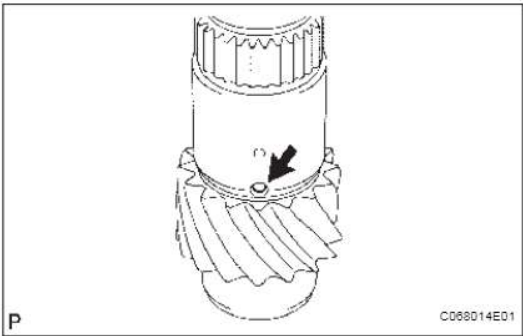
**12. REMOVE 1ST GEAR NEEDLE ROLLER BEARING**

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

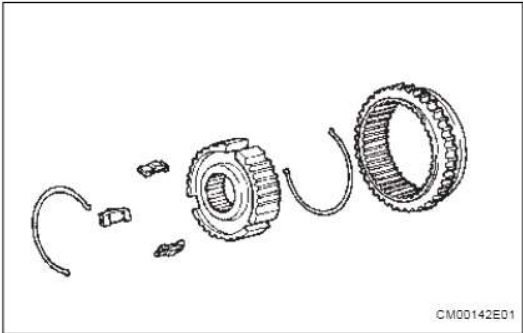
**13. REMOVE 1ST GEAR THRUST WASHER**

- (a) Remove the 1st gear thrust washer from the output shaft.

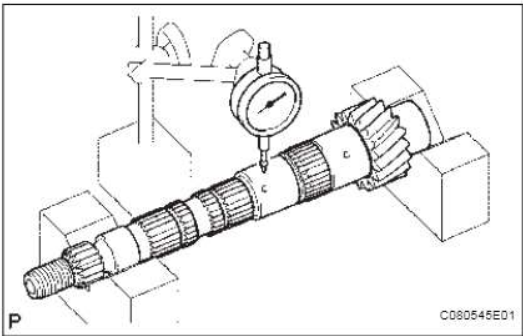
MX



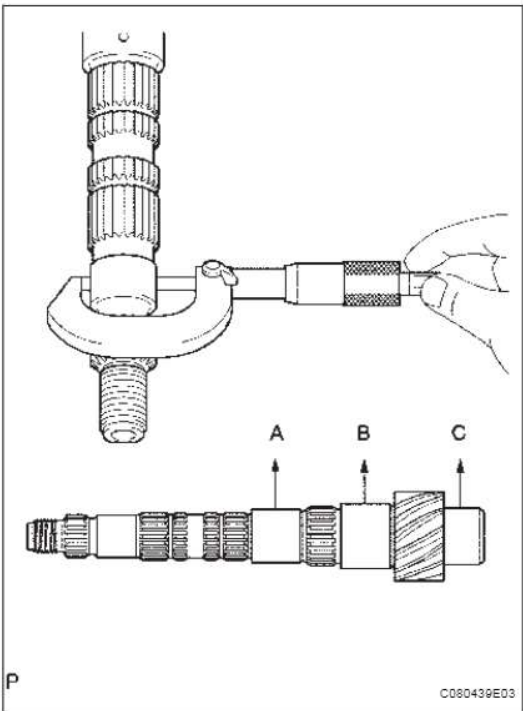
- 14. REMOVE 1ST GEAR THRUST WASHER BALL**
- (a) Remove the 1st gear thrust washer ball from the output shaft.



- 15. REMOVE REVERSE GEAR**
- (a) Remove the reverse gear, 3 No. 1 synchromesh shifting keys and 2 No. 1 synchromesh shifting key springs from the No. 1 transmission clutch hub.
- NOTICE:**
Use a cloth to keep the shifting key and shifting key spring from springing away.



- INSPECTION**
- 1. INSPECT OUTPUT SHAFT**
- (a) Using a dial indicator and 2 V-blocks, measure the output shaft runout.
- Maximum runout:**
0.015 mm (0.0006 in.)
- If the runout is greater than the maximum, replace the output shaft.



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

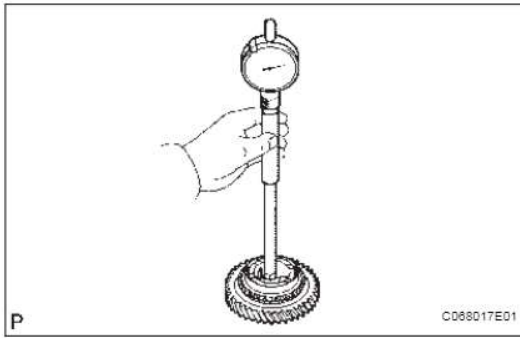
Journal Position	Specified Condition
A	31.985 to 32.000 mm (1.2592 to 1.2598 in.)
B	37.985 to 38.000 mm (1.4955 to 1.4961 in.)
C	32.985 to 33.000 mm (1.2986 to 1.2992 in.)

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

MX

MX-82

C50 MANUAL TRANSAXLE – OUTPUT SHAFT

**2. INSPECT 2ND GEAR**

- (a) Using a cylinder gauge, measure the inside diameter.

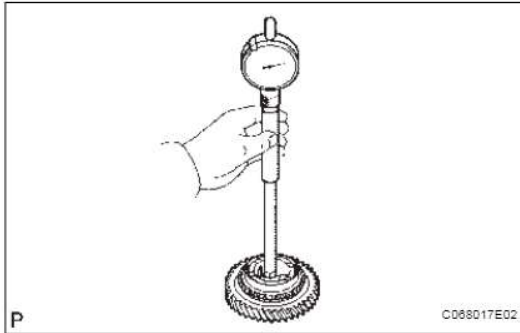
Standard inside diameter:

38.015 to 38.031 mm (1.4967 to 1.4972 in.)

Maximum inside diameter:

38.031 mm (1.4972 in.)

If the inside diameter is greater than the maximum, replace the 2nd gear.

**3. INSPECT 1ST GEAR**

- (a) Using a cylinder gauge, measure the inside diameter.

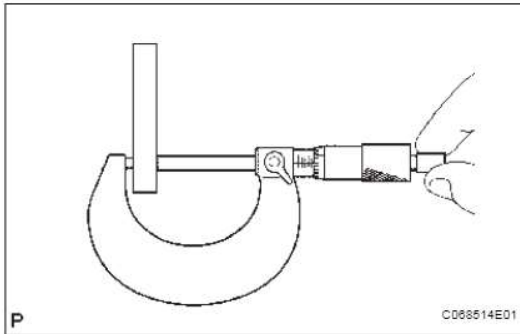
Standard inside diameter:

44.015 to 44.031 mm (1.7328 to 1.7335 in.)

Maximum inside diameter:

44.031 mm (1.7335 in.)

If the inside diameter is greater than the maximum, replace the 1st gear.

**4. INSPECT 1ST GEAR THRUST WASHER**

- (a) Using a micrometer, measure the thickness.

Standard thickness:

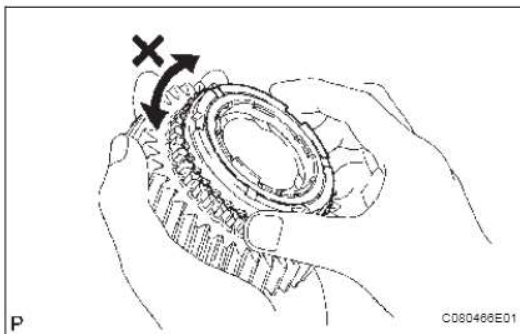
5.975 to 6.025 mm (0.2352 to 0.2372 in.)

Minimum thickness:

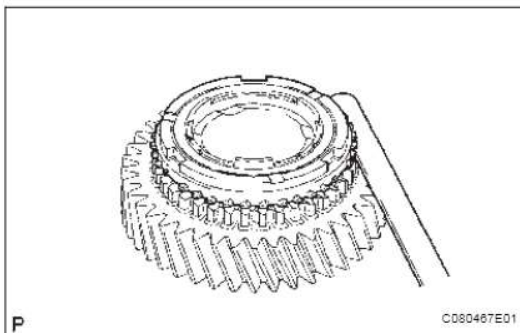
5.975 mm (0.2352 in.)

If the thickness is less than the minimum, replace the 1st gear thrust washer.

MX

**5. INSPECT NO. 1 SYNCHRONIZER RING (for 2nd Gear)**

- (a) Coat the 2nd gear cone with gear oil. Turn the synchronizer ring in one direction while pushing it against 2nd gear cone. Check that the ring locks. If the synchronizer ring does not lock, replace the ring or 2nd gear.



- (b) Using a feeler gauge, measure the clearance between the synchronizer ring back and gear spline end.

Standard clearance:

0.75 to 1.65 mm (0.0295 to 0.0650 in.)

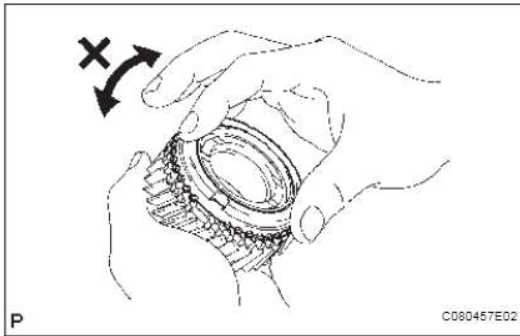
Minimum clearance:

0.75 mm (0.0295 in.)

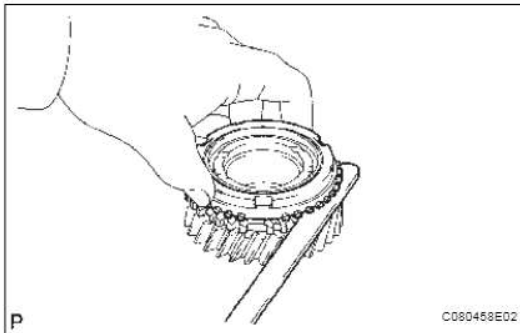
If the clearance is less than the minimum, replace the synchronizer ring.

C50 MANUAL TRANSAXLE – OUTPUT SHAFT

MX-83

**6. INSPECT NO. 1 SYNCHRONIZER RING (for 1st Gear)**

- (a) Coat the 1st gear cone with gear oil. Turn the synchronizer ring in one direction while pushing it against the 1st gear cone. Check that the ring locks. If the synchronizer ring does not lock, replace the ring or 1st gear.



- (b) Using a feeler gauge, measure the clearance between the synchronizer ring back and gear spline end.

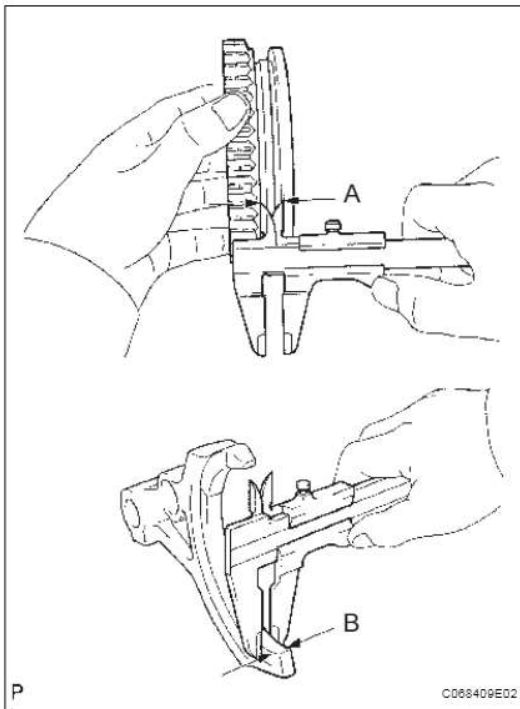
Standard clearance:

0.75 to 1.65 mm (0.0295 to 0.0650 in.)

Minimum clearance:

0.75 mm (0.0295 in.)

If the clearance is less than the minimum, replace the synchronizer ring.

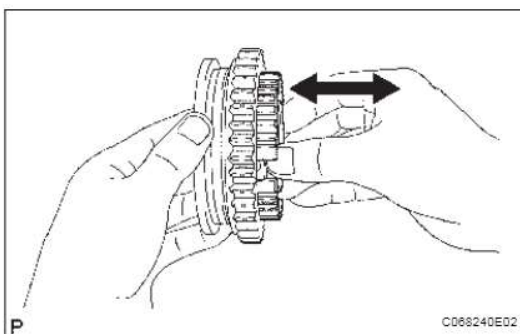
**7. INSPECT REVERSE GEAR**

- (a) Using a vernier caliper, measure the width of the reverse gear groove (A) and the thickness of the claw part on the reverse shift fork (B), and calculate the clearance.

Standard clearance:

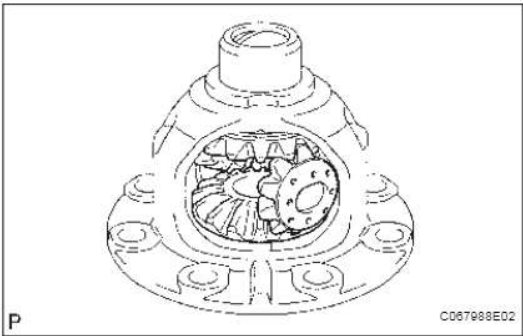
A - B = 0.15 to 0.35 mm (0.0059 to 0.0138 in.)

- (b) Check that the spline gear edges of the reverse gear are not worn down.

**8. INSPECT NO. 1 TRANSMISSION CLUTCH HUB**

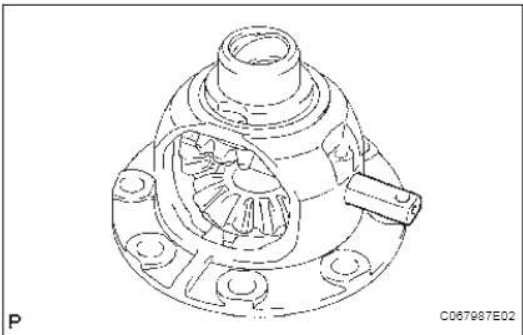
- (a) Check that the No. 1 transmission clutch hub and reverse gear slide smoothly.
- (b) Check that the spline gear edges of the reverse gear are not worn down.

MX

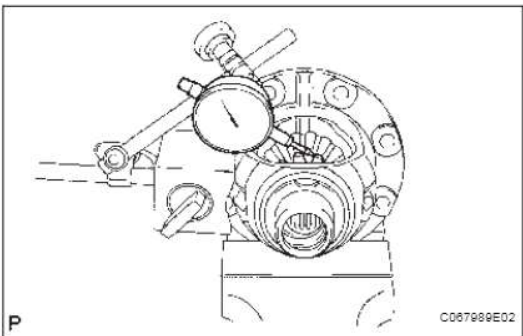


REASSEMBLY

1. **INSTALL FRONT DIFFERENTIAL SIDE GEAR**
- (a) Coat the sliding and rotating surface of the front differential side gear with gear oil.
 - (b) Install the 2 front No. 1 differential side gear thrust washers to the 2 front differential side gears.
 - (c) Install the 2 front differential side gears, 2 front differential pinions and 2 front differential pinion thrust washers to the front differential case.
- HINT:
Revolving the front differential side gear, install the 2 front differential pinions and 2 front differential pinion thrust washers.



2. **INSTALL FRONT NO. 1 DIFFERENTIAL PINION SHAFT**
- (a) Coat the front No. 1 differential pinion shaft with MP grease.
 - (b) Install the front No. 1 differential pinion shaft to the front differential case so that the hole for the front differential pinion shaft straight pin is aligned with the hole in the front differential case.



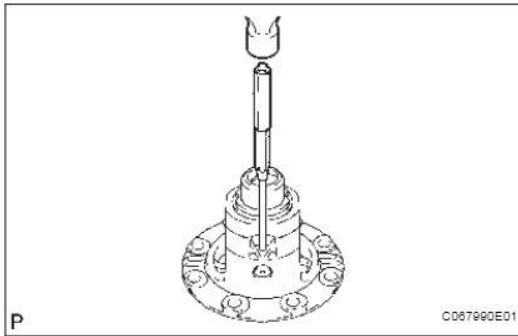
3. **ADJUST FRONT DIFFERENTIAL SIDE GEAR BACKLASH**
- (a) Fix the front differential pinion to the front differential case side. Using a dial indicator, measure the gear backlash.
- Standard backlash:**
0.05 to 0.20 mm (0.0020 to 0.0079 in.)
- If the backlash is not within specification, replace the side gear thrust washer.
- Standard thrust washer thickness**

Part No.	Thickness mm (in.)
41361 - 22140	0.95 (0.0374 in.)
41361 - 22020	1.00 (0.0394 in.)
41361 - 22150	1.05 (0.0413 in.)
41361 - 22030	1.10 (0.0433 in.)
41361 - 22160	1.15 (0.0452 in.)
41361 - 22040	1.20 (0.0472 in.)

- HINT:
- Because the thrust washer does not have any marks for distinction, measure the thickness with a micrometer to select a proper thrust washer.
 - Select washers of the same thickness for both the right and left side.

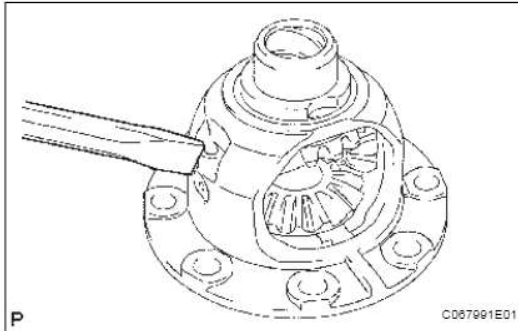
MX-100

C50 MANUAL TRANSAXLE – DIFFERENTIAL CASE

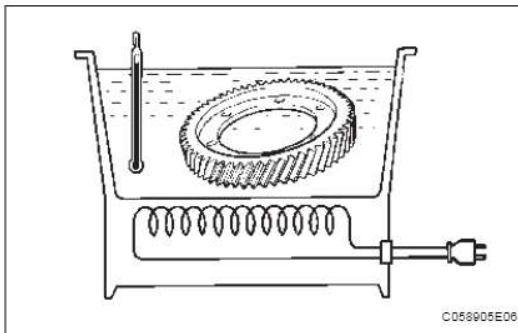


4. INSTALL FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN

- (a) Using a 3 mm pin punch and hammer, tap in the front differential pinion shaft straight pin to the front differential case.

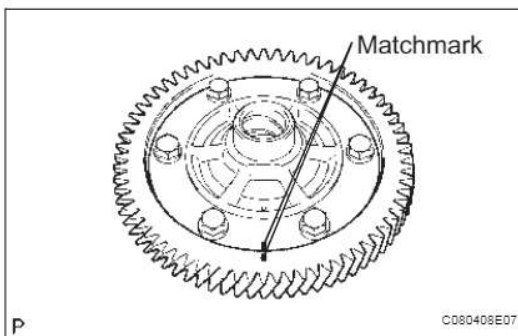


- (b) Using a chisel and hammer, stake the front differential case hole.



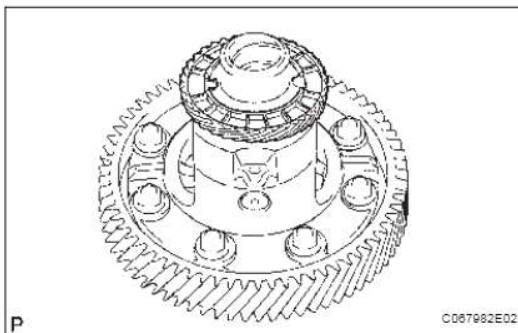
5. INSTALL FRONT DIFFERENTIAL RING GEAR

- (a) Clean the contact surface of the front differential case and ring gear.
- (b) Using a heater, heat the front differential ring gear to 90 to 110°C (194 to 230°F).
- (c) After the moisture on the ring gear has completely evaporated, quickly install the ring gear to the differential case.



- (d) Aligning both matchmarks, quickly install the front differential ring gear to the front differential case.
- (e) Install the 8 bolts.

Torque: 77 N*m (790 kgf*cm, 57 ft.*lbf)

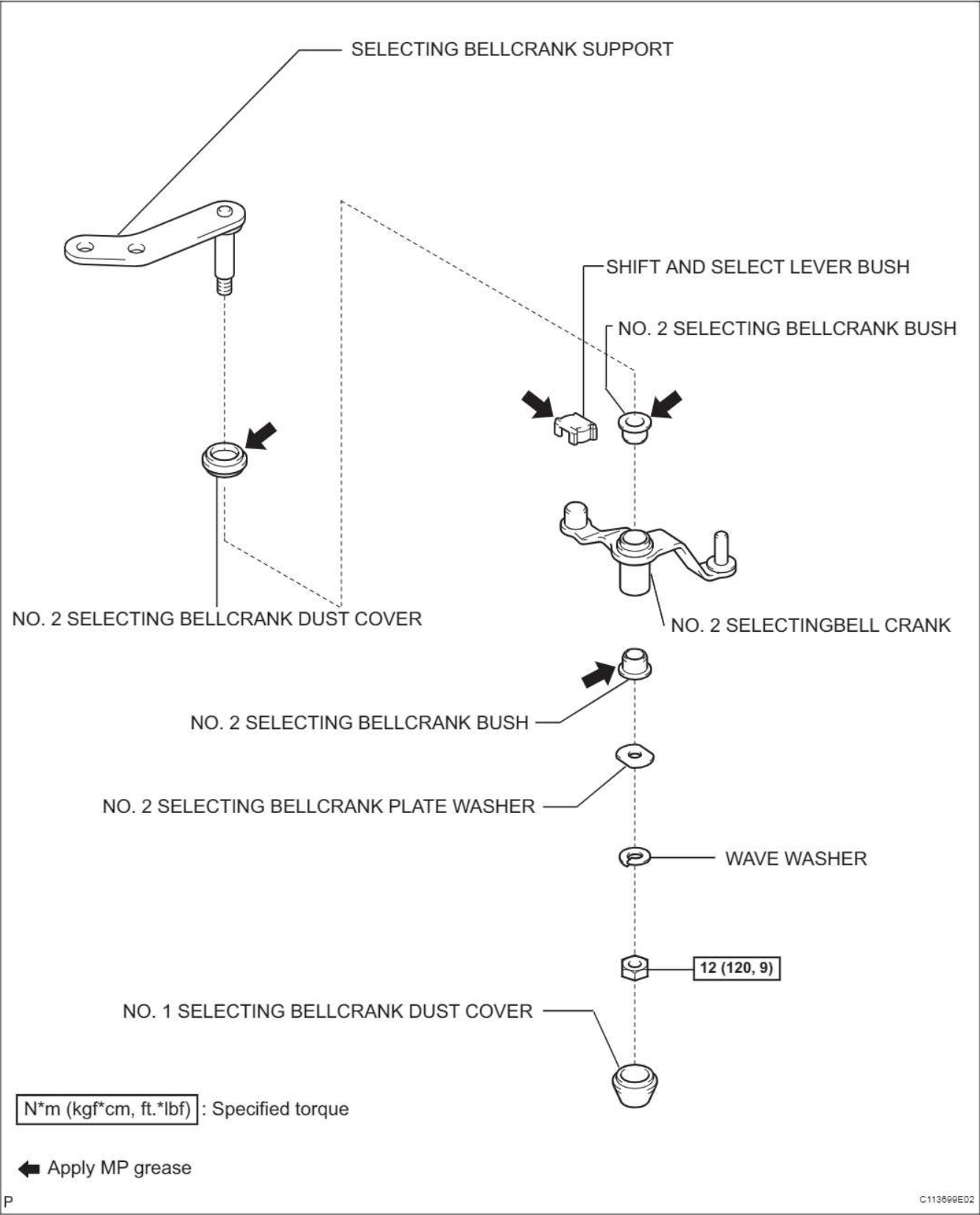


6. INSTALL SPEEDOMETER DRIVE GEAR

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

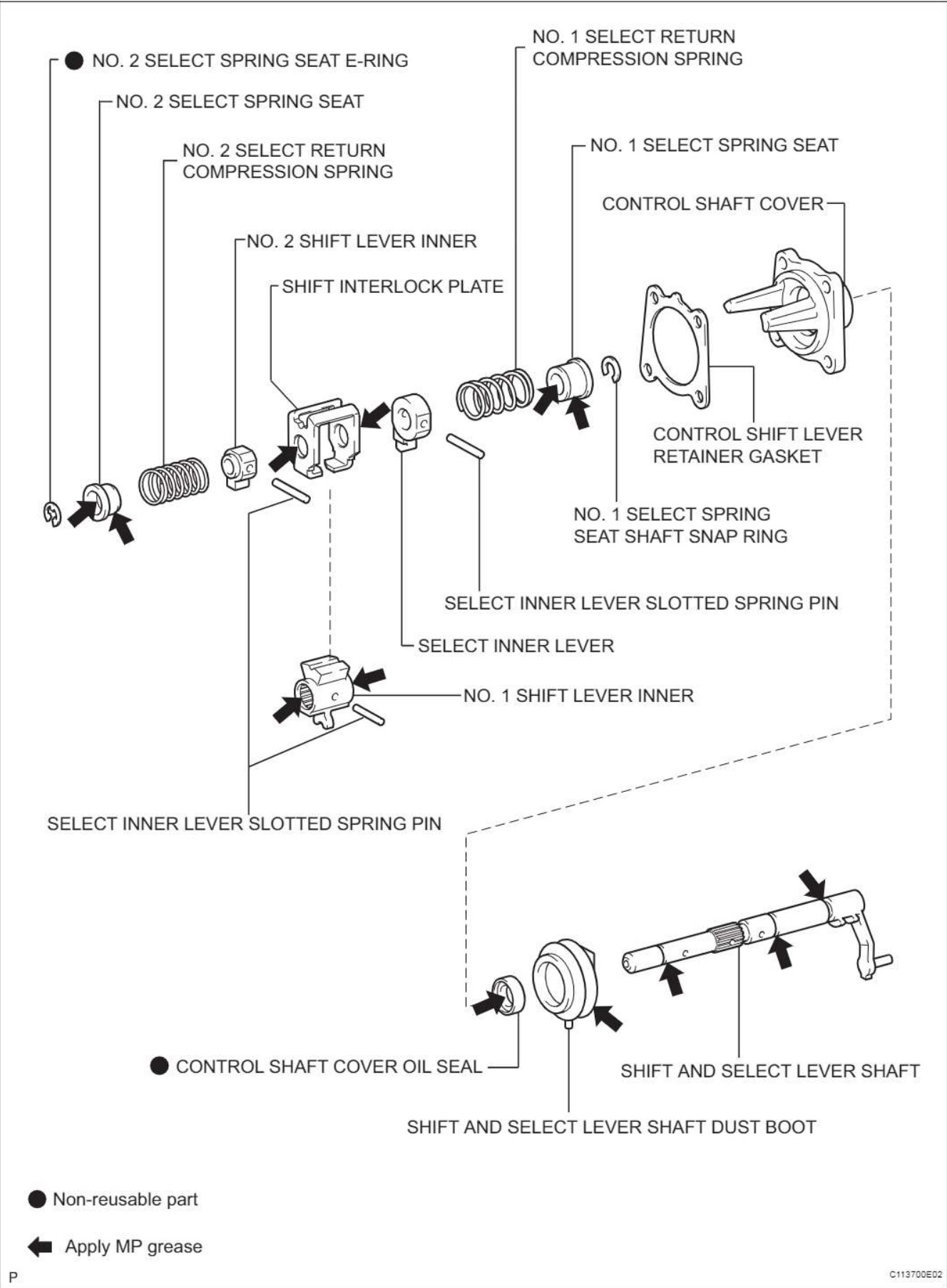
SHIFT AND SELECT LEVER SHAFT

COMPONENTS



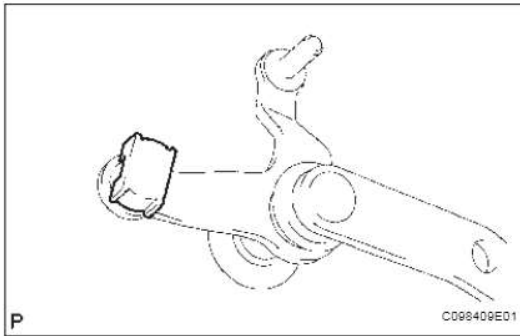
MX-90

C50 MANUAL TRANSAXLE – SHIFT AND SELECT LEVER SHAFT

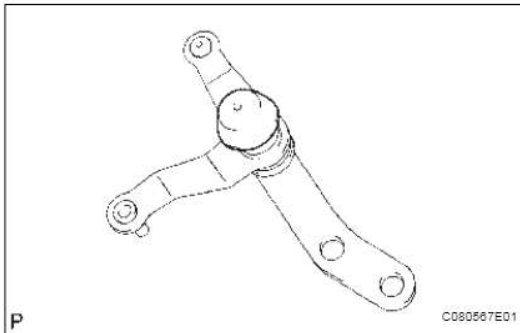


C50 MANUAL TRANSAXLE – SHIFT AND SELECT LEVER SHAFT**MX-91****DISASSEMBLY****1. REMOVE SHIFT AND SELECT LEVER BUSH**

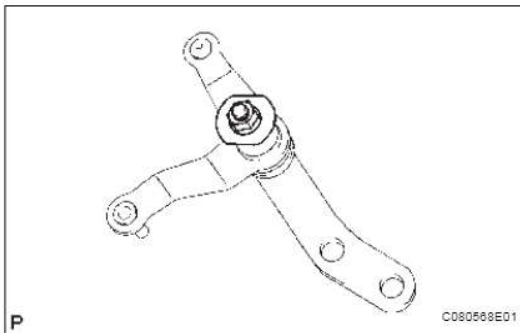
- (a) Remove the bush from the selecting bellcrank.

**2. REMOVE NO. 1 SELECTING BELLCRANK DUST COVER**

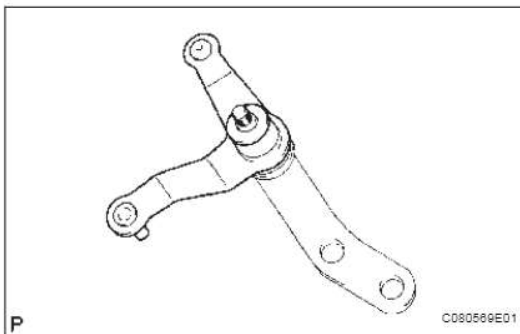
- (a) Remove the dust cover from the selecting bellcrank.

**3. REMOVE NO. 2 SELECTING BELLCRANK**

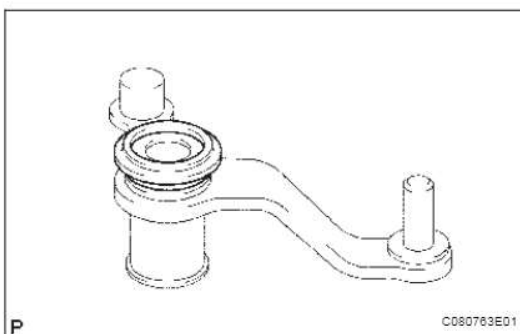
- (a) Remove the nut, wave washer and No. 2 selecting bellcrank plate washer.

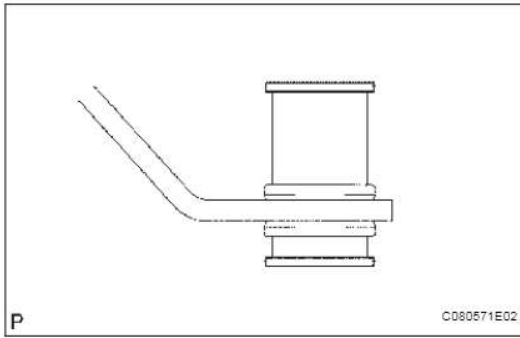


- (b) Remove the No. 2 selecting bellcrank from the selecting bellcrank support.

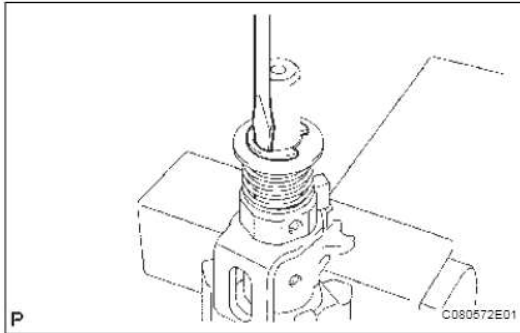
**4. REMOVE NO. 2 SELECTING BELLCRANK DUST COVER**

- (a) Remove the dust cover from the selecting bellcrank support.

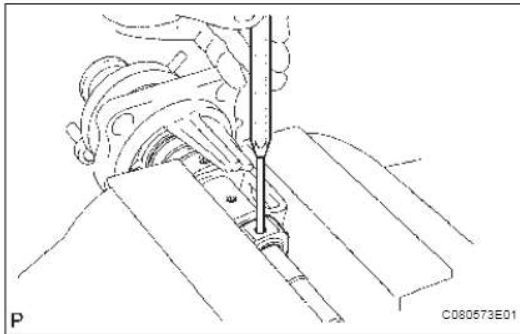
**MX**

MX-92**C50 MANUAL TRANSAXLE – SHIFT AND SELECT LEVER SHAFT****5. REMOVE NO. 2 SELECTING BELLCRANK BUSH**

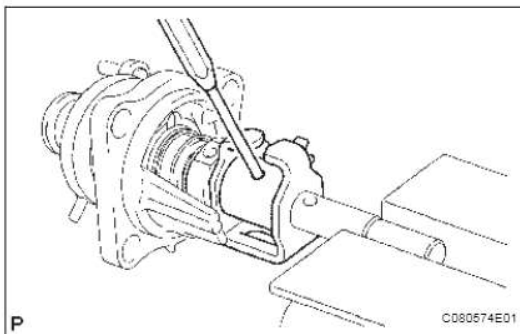
- (a) Remove the 2 bushes from the No. 2 selecting bellcrank.

**6. REMOVE NO. 2 SELECT SPRING SEAT**

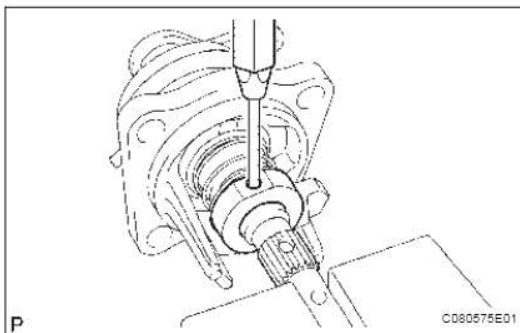
- (a) Using a screwdriver, pry out the seat E-ring, No. 2 select spring seat and No. 2 select return compression spring from the shift and select lever shaft.

**7. REMOVE NO. 2 SHIFT LEVER INNER**

- (a) Using a 5 mm pin punch and hammer, tap out the shift inner lever slotted spring pin and No. 2 shift lever inner from the shift and select lever shaft.
HINT:
Make sure of the orientation of the No. 2 shift lever inner.

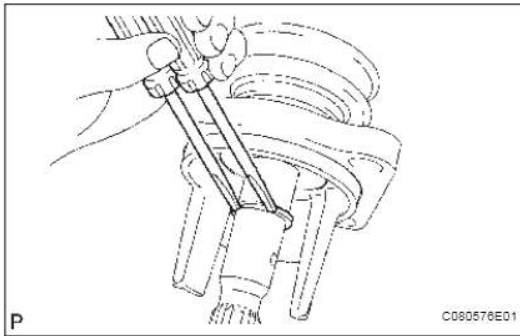
**8. REMOVE NO. 1 SHIFT LEVER INNER**

- (a) Using a 5 mm pin punch and hammer, tap out the shift inner lever slotted spring pin, No. 1 shift lever inner and shift interlock plate from the shift and select lever shaft.
HINT:
Make sure of the orientation of the No. 1 shift lever inner.

**9. REMOVE SELECT INNER LEVER**

- (a) Using a 5 mm pin punch and hammer, tap out the select inner lever slotted spring pin, select inner lever, No. 1 select return compression spring and No. 1 select spring seat from the shift and select lever shaft.
HINT:
Make sure of the orientation of the select inner lever.

MX

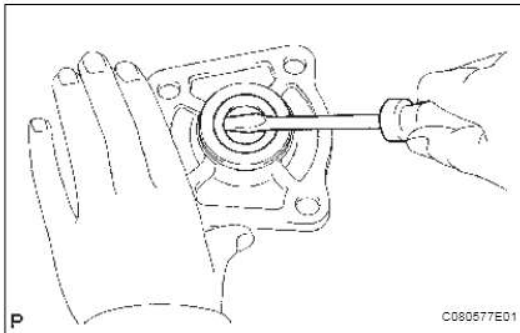
C50 MANUAL TRANSAXLE – SHIFT AND SELECT LEVER SHAFT**MX-93****10. REMOVE CONTROL SHAFT COVER**

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

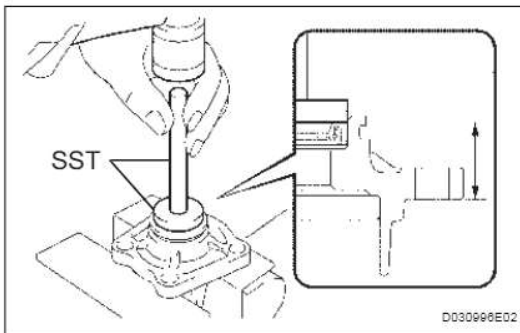
HINT:

Use a cloth to prevent the shaft snap ring from springing away.

- (b) Remove the control shaft cover, control shift lever retainer gasket and shift and select lever shaft dust boot from the shift and select lever shaft.

**11. REMOVE CONTROL SHAFT COVER OIL SEAL**

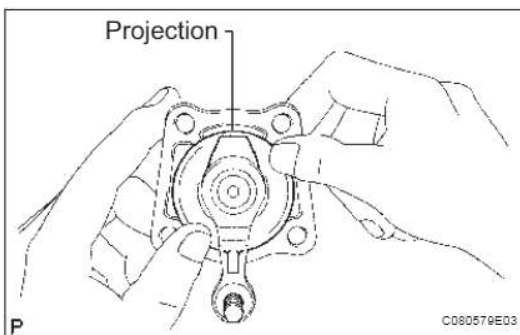
- (a) Using a screwdriver, pry out the oil seal from the control shaft cover.

**REASSEMBLY****1. INSTALL CONTROL SHAFT COVER OIL SEAL**

- (a) SST and a hammer, tap in a new oil seal to the control shaft cover.

Standard depth:**25.0 to 26.0 mm (0.984 to 1.0236 in.)**

- (b) Coat the control shaft cover oil seal with MP grease.

**2. INSTALL CONTROL SHAFT COVER**

- (a) Coat the shift and select lever shaft dust boot with MP grease.

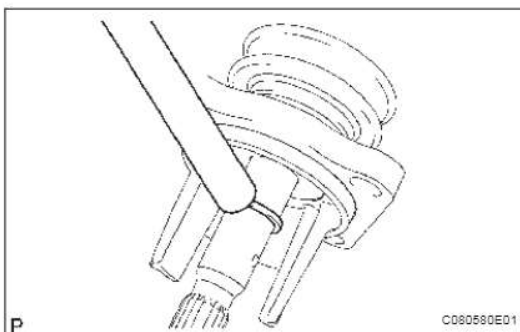
- (b) Install the shift and select lever shaft dust boot to the control shaft cover.

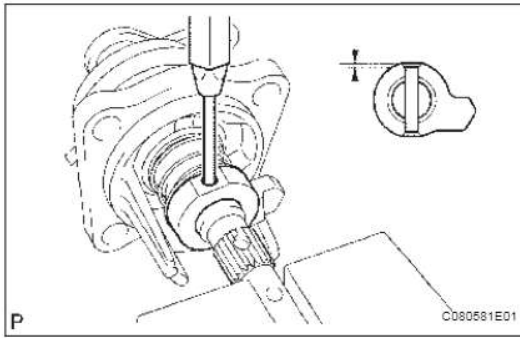
HINT:

Install the boot with the projection facing upward and the hole side facing downward.

- (c) Install the control shaft cover to the shift and select lever.

- (d) Coat the shift and select lever shaft with MP grease. Using a brass bar and hammer, tap in the shift and select lever shaft and snap ring.

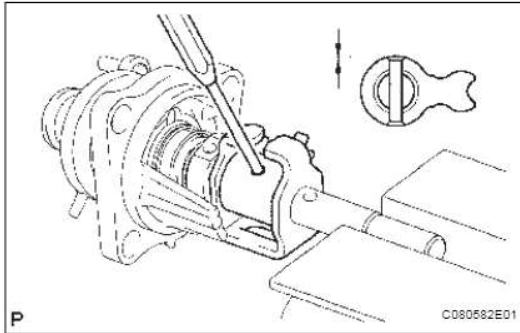
**MX**

MX-94**C50 MANUAL TRANSAXLE – SHIFT AND SELECT LEVER SHAFT****3. INSTALL SELECT INNER LEVER**

- (a) Coat the No. 1 select spring seat with MP grease.
- (b) Using a 5 mm pin punch and hammer, install the No. 1 select spring seat, No. 1 select return compression spring, select inner lever and select inner lever slotted spring pin to the shift and select lever shaft.

Standard depth:

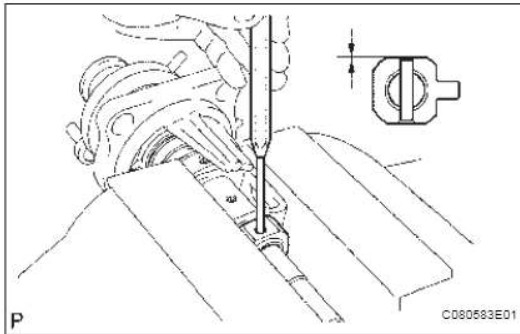
3.0 to 4.0 mm (0.1181 to 0.1575 in.)

**4. INSTALL NO. 1 SHIFT LEVER INNER**

- (a) Coat the shift interlock plate and No. 1 shift lever inner with MP grease.
- (b) Using a 5mm pin punch and hammer, tap in the shift interlock plate, No. 1 shift lever inner and shift inner lever slotted spring pin to the shift and select lever shaft.

Standard depth:

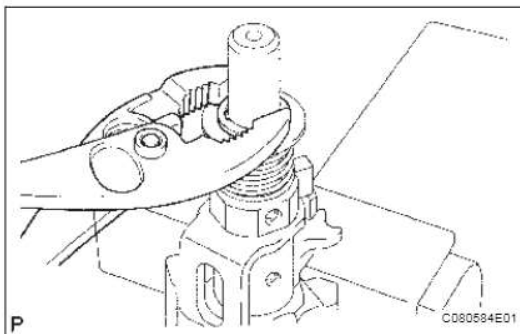
-0.5 to 0.5 mm (-0.0197 to 0.0197 in.)

**5. INSTALL NO. 2 SHIFT LEVER INNER**

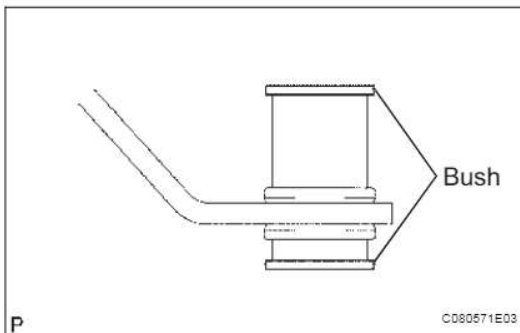
- (a) Coat the No. 2 shift lever inner with MP grease.
- (b) Using a 5 mm pin punch and hammer, install the No. 2 shift lever inner and shift inner lever slotted spring pin to the shift and select lever shaft.

Standard depth:

-0.5 to 0.5 mm (-0.0197 to 0.0197 in.)

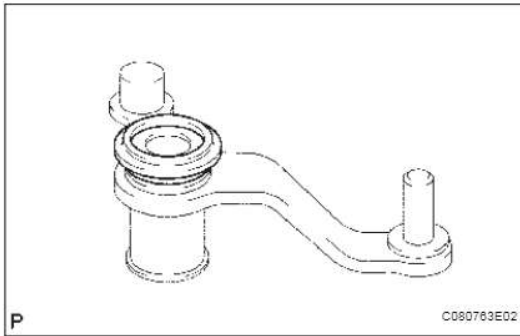
**6. INSTALL NO. 2 SELECT SPRING SEAT**

- (a) Coat the No. 2 select spring seat with MP grease.
- (b) Install the No. 2 select spring seat and No. 2 select return compression spring. Using pliers, install a new seat E-ring to the shift and select lever shaft.

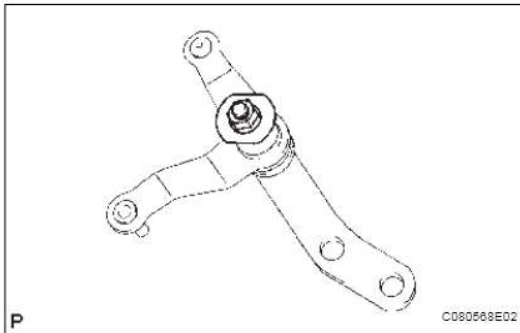
**7. INSTALL NO. 2 SELECTING BELLCRANK BUSH**

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

MX

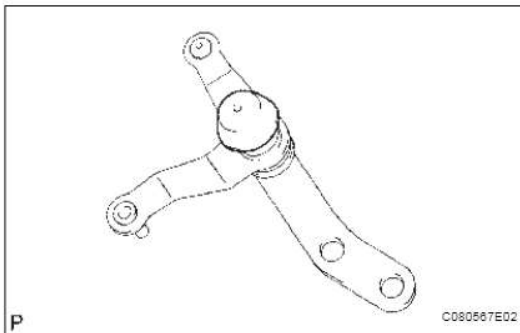
C50 MANUAL TRANSAXLE – SHIFT AND SELECT LEVER SHAFT**MX-95****8. INSTALL NO. 2 SELECTING BELLCRANK DUST COVER**

- (a) Coat the dust cover with MP grease, and install it to the selecting bellcrank support.

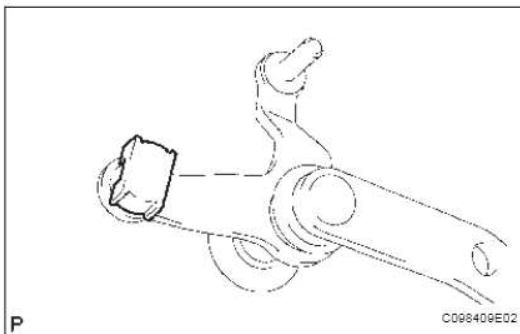
**9. INSTALL NO. 2 SELECTING BELLCRANK**

- (a) Install the selecting bellcrank support, No. 2 selecting bellcrank plate washer, wave washer and nut.

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

**10. INSTALL NO. 1 SELECTING BELLCRANK DUST COVER**

- (a) Install the dust cover to the selecting bellcrank.

**11. INSTALL SHIFT AND SELECT LEVER BUSH**

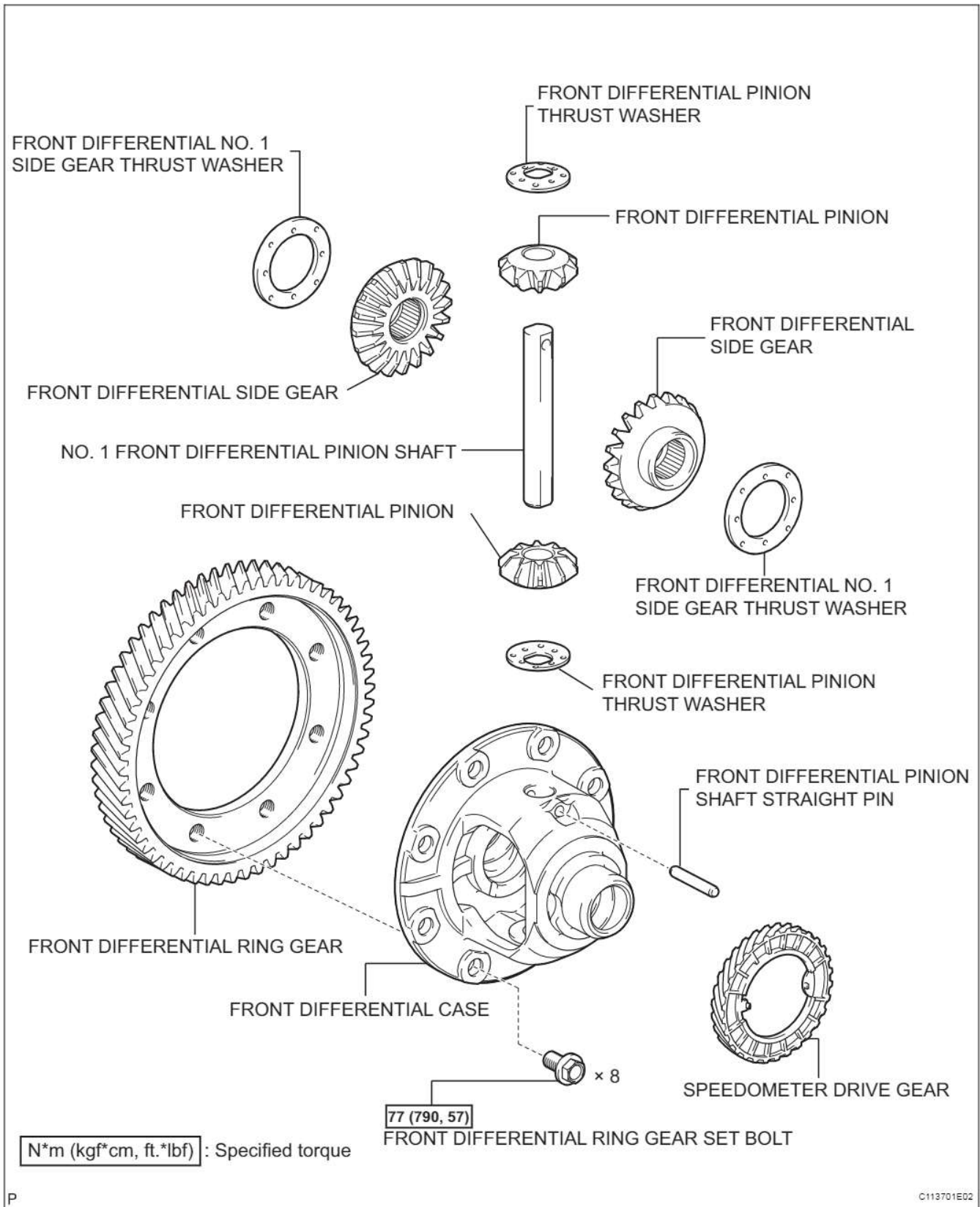
- (a) Install the bush to the selecting bellcrank.

MX

MX-96

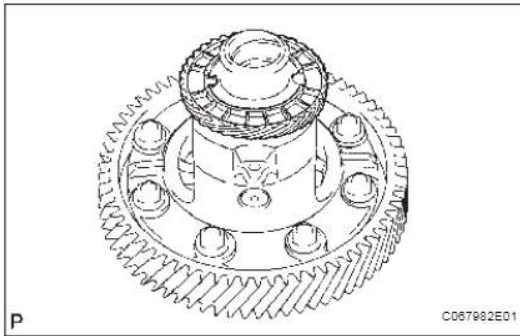
C50 MANUAL TRANSAXLE – DIFFERENTIAL CASE

DIFFERENTIAL CASE COMPONENTS

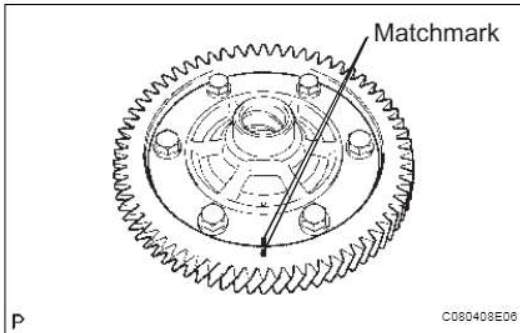


C50 MANUAL TRANSAXLE – DIFFERENTIAL CASE**MX-97****DISASSEMBLY****1. REMOVE SPEEDOMETER DRIVE GEAR**

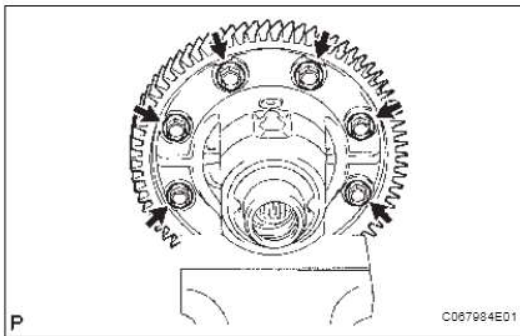
- (a) Remove the drive gear from the front differential case.

**2. REMOVE FRONT DIFFERENTIAL RING GEAR**

- (a) Put matchmarks on the gear and front differential case.



- (b) Remove the 8 bolts.
(c) Using a hammer, tap out the front differential ring gear from the case.

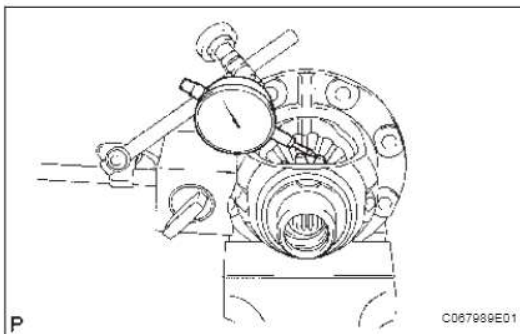
**3. INSPECT FRONT DIFFERENTIAL SIDE GEAR BACKLASH**

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

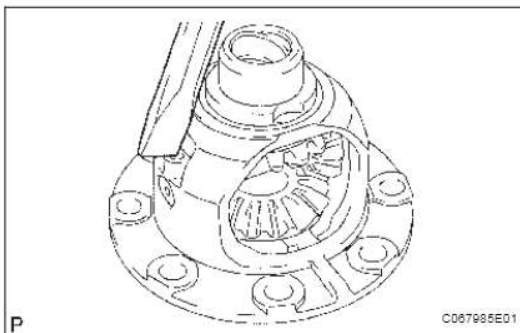
Standard backlash:

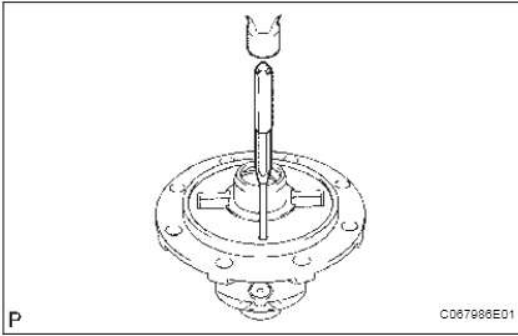
0.05 to 0.20 mm (0.0020 to 0.0079 in.)

If the backlash is not as specified, replace the pinion thrust washer and side gear thrust washers.

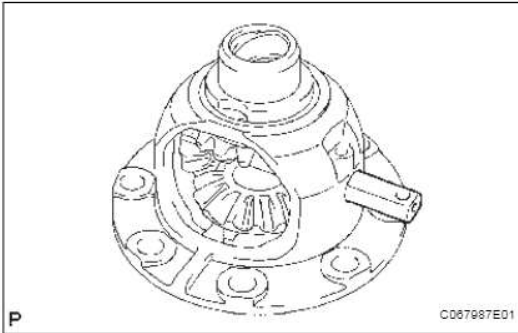
**4. REMOVE FRONT DIFFERENTIAL PINION SHAFT STRAIGHT PIN**

- (a) Using a chisel and hammer, loosen the staked part of the front differential case.

**MX**

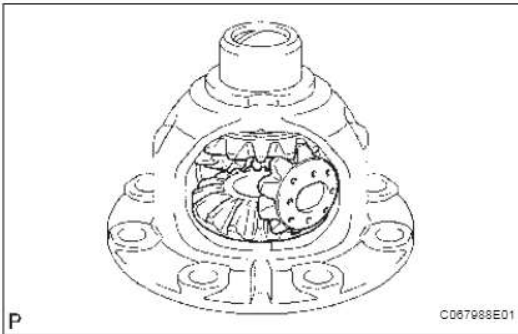
MX-98**C50 MANUAL TRANSAXLE – DIFFERENTIAL CASE**

- (b) Using a 3 mm pin punch and hammer, tap out the front differential pinion shaft straight pin from the front differential case.



5. REMOVE NO. 1 FRONT DIFFERENTIAL PINION SHAFT

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



6. REMOVE FRONT DIFFERENTIAL SIDE GEAR

- (a) Remove the 2 front differential pinions, 2 front differential pinion thrust washers, 2 front differential No. 1 side gear thrust washers and 2 front differential side gears from the front differential case.

HINT:

Revolving the front differential pinion, remove the 2 pinions and 2 side gears.

INSPECTION

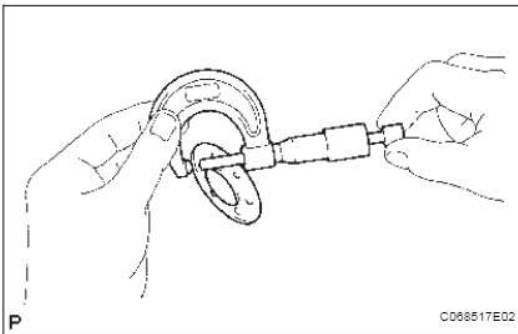
1. INSPECT FRONT DIFFERENTIAL PINION THRUST WASHER

- (a) Using a micrometer, measure the thickness.

Minimum thickness:

0.94 mm (0.03701 in.)

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



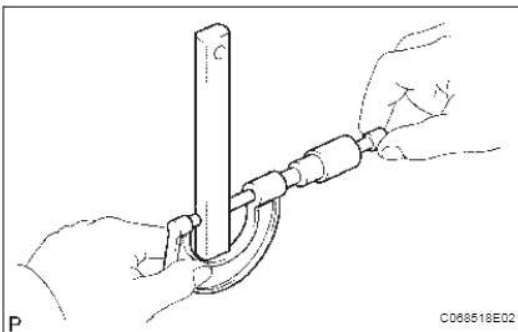
2. REMOVE FRONT NO. 1 DIFFERENTIAL PINION SHAFT

- (a) Using a micrometer, measure the diameter of the front No. 1 differential pinion shaft.

Minimum diameter:

16.982 mm (0.6685 in.)

If the diameter is less than the minimum, replace the front No. 1 differential pinion shaft.

**MX**