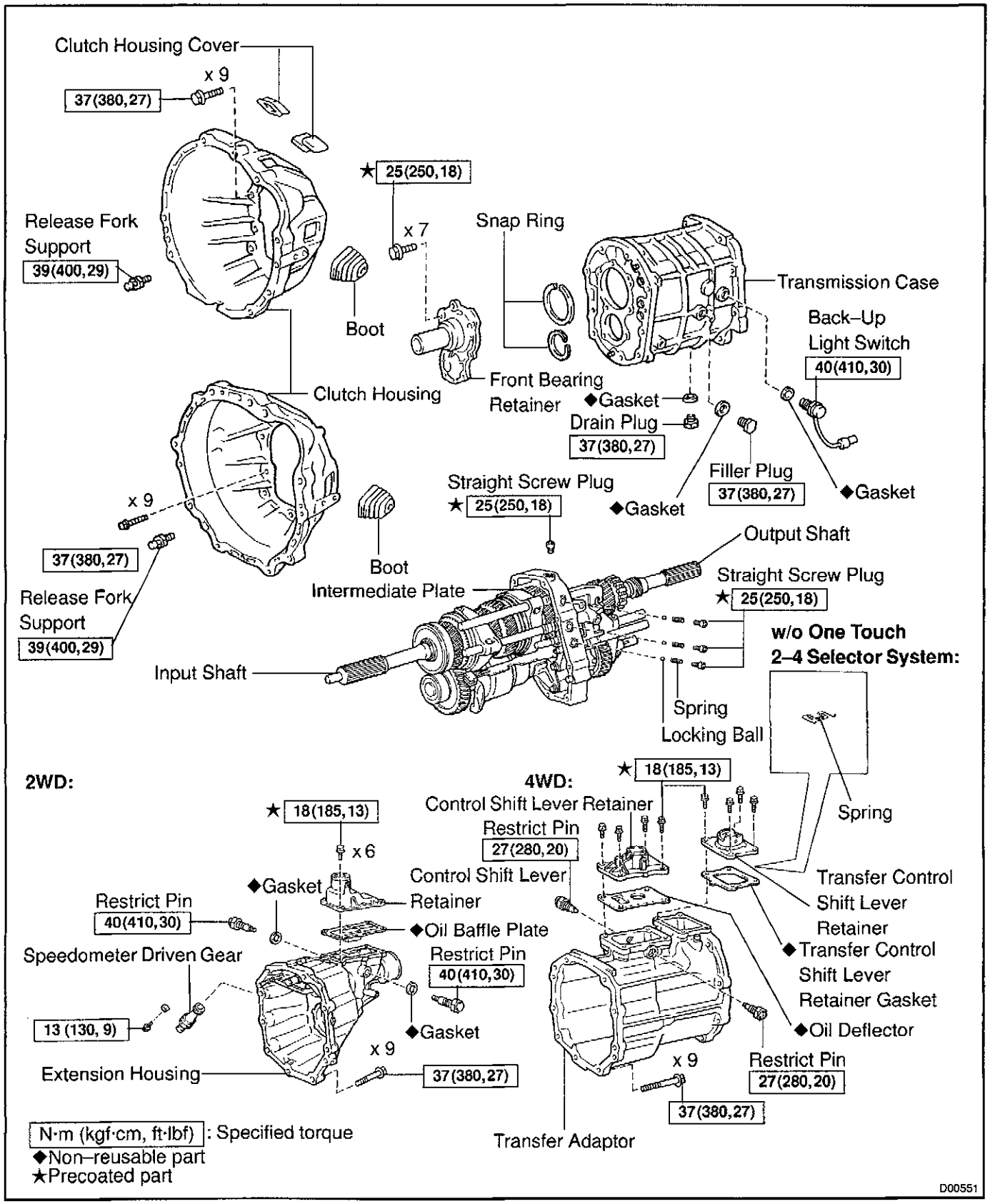
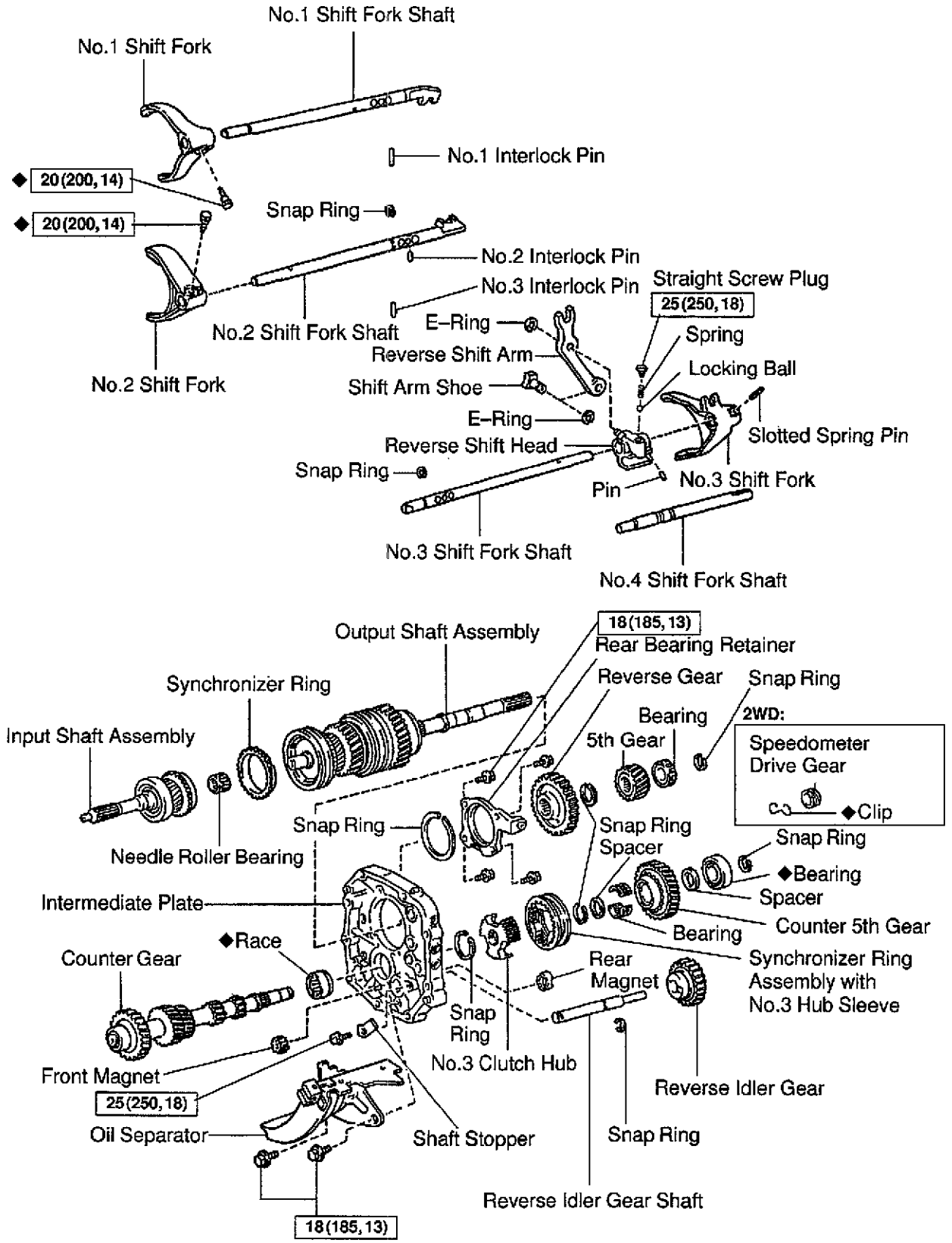
MANUAL TRANSMISSION ASSEMBLY

COMPONENTS

M1000-03





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

◆Non–reusable part

Z19176

MT05G–01

DISASSEMBLY

1. **REMOVE BACK–UP LIGHT SWITCH**
   Torque: 40 N·m (410 kgf·cm, 30 ft·lbf)
2. **2WD:**
   REMOVE SPEEDOMETER DRIVEN GEAR

Remove the bolt and driven gear.

Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)

3. **REMOVE CLUTCH HOUSING**

Remove the 9 bolts and clutch housing.

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

4. **REMOVE CONTROL SHIFT LEVER RETAINER**

(a) Remove the 6 (2WD) or 4 (4WD) bolts.
Sealant:
Part No.08833 – 00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

(b) Remove the retainer and oil baffle plate (2WD) or oil deflector (4WD).

5. **4WD:**
   REMOVE TRANSFER CONTROL SHIFT LEVER

(a) Remove the 4 bolts.
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

(b) Remove the retainer and gasket.

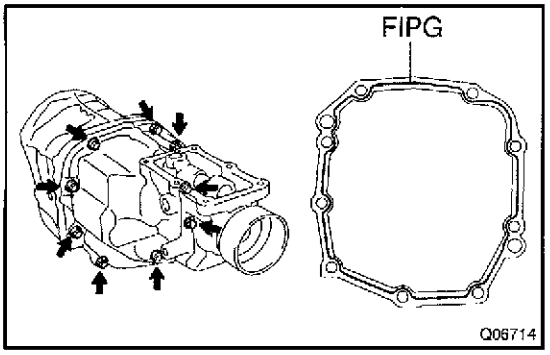
(c) w/o One Touch 2 – 4 Selector System.
Remove the select return spring from the retainer.

6. **2WD:**
   REMOVE 2 RESTRICT PINS AND GASKETS

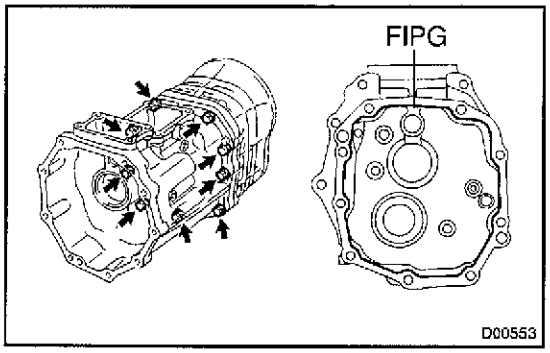
HINT:
At the time of reassembly, please refer to the following item.
Install the black pin on the reverse gear/5th gear side.
Torque: 40 N·m (410 kgf·cm, 30 ft·lbf)

7. **4WD:**
   REMOVE 2 RESTRICT PINS

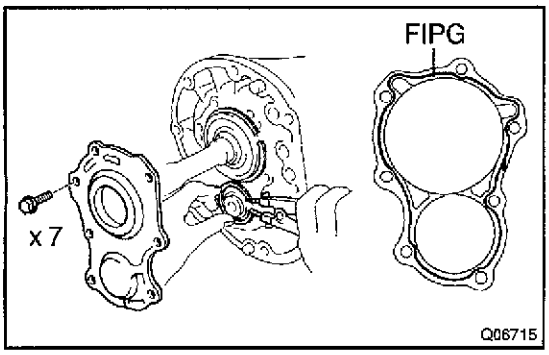
HINT:
At the time of reassembly, please refer to the following item.
Install the black pin on the reverse gear/5th gear side.
Torque: 27 N·m (280 kgf·cm, 20 ft·lbf)



8. **2WD:**
REMOVE EXTENSION HOUSING
(a) Remove the shift lever housing set bolt.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)
(b) Remove the 9 bolts from the extension housing.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)
(c) Using a plastic hammer, carefully tap the housing.
(d) Disengage the shift and select lever from the shift head.
(e) Pull out the extension housing.
FIPG:
Part No. 08826 – 00090, THREE BOND 1281 or equivalent



9. **4WD:**
REMOVE TRANSFER ADAPTOR
(a) Remove the shift lever housing set bolt.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)
(b) Remove the 9 bolts from the transfer adaptor.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)
(c) Using a plastic hammer, carefully tap the adaptor.
(d) Disengage the shift and select lever from the shift head.
(e) Pull out the transfer adaptor.
FIPG:
Part No. 08826 – 00090, THREE BOND 1281 or equivalent



10. REMOVE FRONT BEARING RETAINER AND BEARING SNAP RING

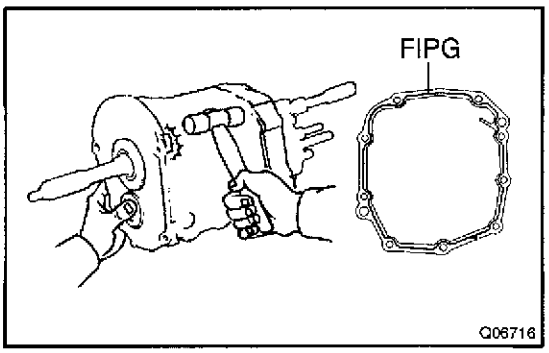
(a) Remove the 7 bolts.

Sealant:
Part No.08833 – 00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

(b) Remove the front bearing retainer.

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

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



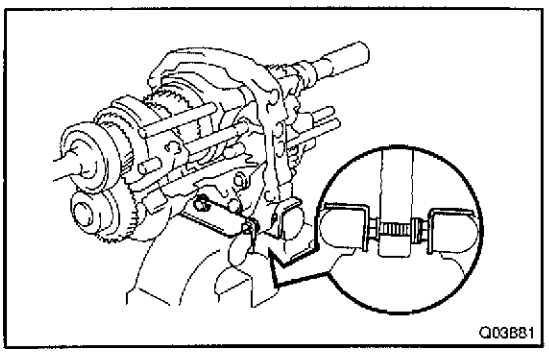
11. SEPARATE INTERMEDIATE PLATE FROM TRANSMISSION CASE

(a) Using a plastic hammer, carefully tap the transmission case.

(b) Pull off the transmission case from the intermediate plate.

HINT:
At the time of reassembly, please refer to the following item.
Align each bearing outer race and each shift fork shaft end with the case holes.

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



12. MOUNT INTERMEDIATE PLATE IN VISE

(a) Use the 2 long clutch housing bolts, plate washers and suitable nuts, as shown.

HINT:
Increase or decrease plate washers so that the bolt tip does not protrude from the nut.

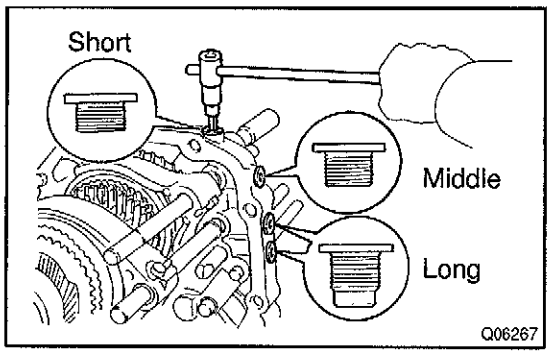
(b) Mount the intermediate plate in a vise.

13. REMOVE OIL SEPARATOR

Remove the 2 bolts and oil separator.

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

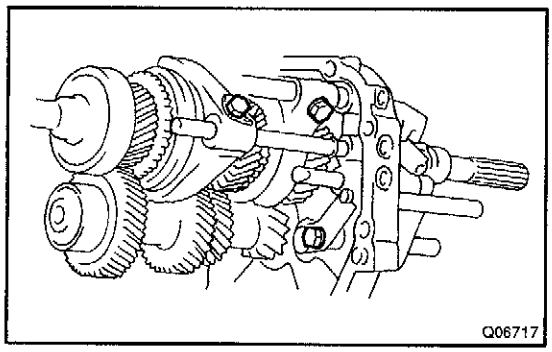
14. REMOVE FRONT MAGNET



15. REMOVE LOCKING BALL AND SPRING

(a) Using a hexagon wrench, remove the 4 straight screw plugs.
Sealant:
Part No.08833 – 00080, THREE BOND 1344, LOCTITE 242 or equivalent
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

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



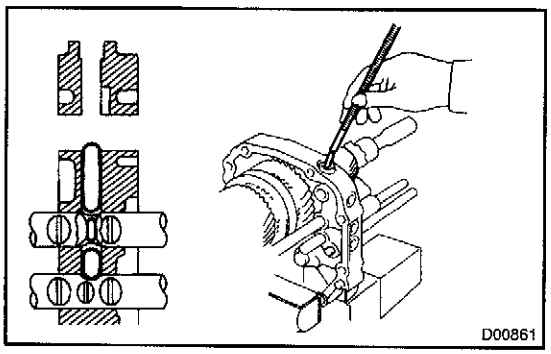
16. REMOVE SHIFT FORK, SHIFT FORK SHAFT AND REVERSE IDLER GEAR

(a) Remove the set bolt of the No.1 and No.2 shift forks.
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)

(b) Remove the bolt and reverse idler gear shaft stopper.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

(c) Remove the reverse idler gear and shaft with the snap ring.

(d) Remove the No.1 shift fork and shaft.

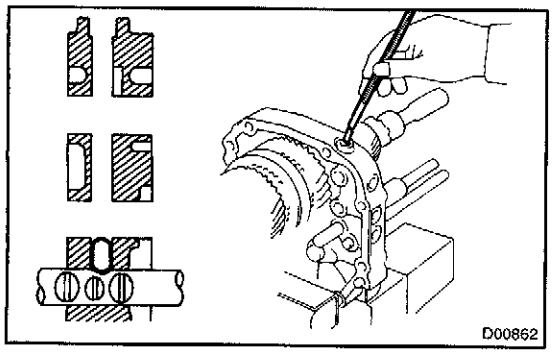


(e) Using a magnetic finger, remove the No.1 and No.2 interlock pins.

HINT:
At the time of reassembly, please refer to the following item.
Apply MP grease to the No.1 and No.2 interlock pins.

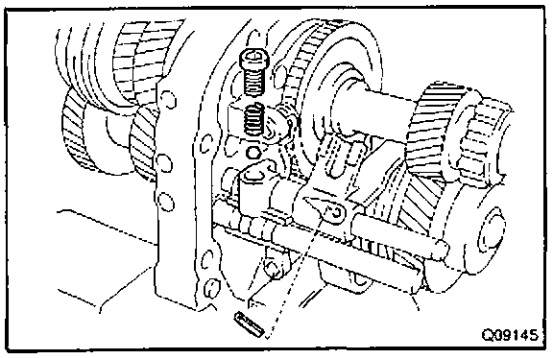
(f) Using 2 screwdrivers and a hammer, tap out the No. 2 shift fork shaft snap ring.

(g) Remove the No.2 shift fork and shaft.

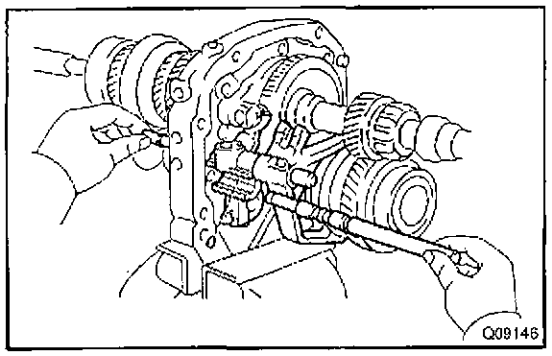


(h) Using a magnetic finger, remove the No.3 interlock pin.

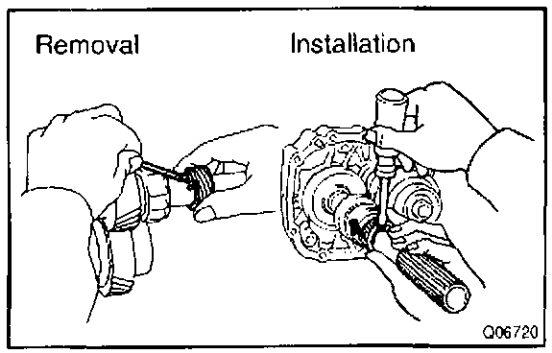
HINT:
At the time of reassembly, please refer to the following item.
Apply MP grease to the No.3 interlock pin.



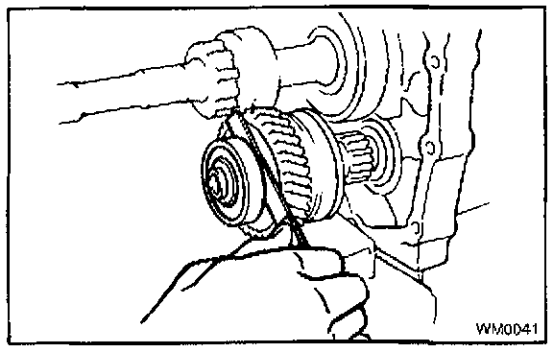
(i) Using a pin punch and hammer, drive out the No.3 shift fork pin.
(j) Using a hexagon wrench, remove the plug.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
(k) Using a magnetic finger, remove the spring and ball.



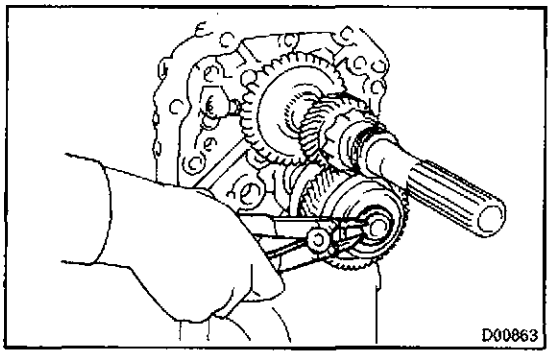
(l) Pull out the No.4 shift fork shaft.
(m) Remove the interlock pin.
HINT:
At the time of reassembly, please refer to the following item.
Apply MP grease to the pin.
(n) Remove the No.3 shift fork, fork shaft and reverse shift arm with the snap ring.
HINT:
At the time of reassembly, please refer to the following item.
Align the No.3 shift fork with the No.3 hub sleeve groove, put the reverse shift arm into the pivot of bearing retainer and align the reverse shift arm shoe with the reverse idler gear groove.



17. 2WD:
REMOVE VEHICLE SPEED SENSOR DRIVE GEAR
Using a screwdriver, pry out both ends of the clip and remove the drive gear.



18. INSPECT COUNTER 5TH GEAR THRUST CLEARANCE
Using a feeler gauge, measure the counter 5th gear thrust clearance.
Standard clearance:
0.10 – 0.41 mm (0.0039 – 0.0161 in.)
Maximum clearance:
0.46 mm (0.0181 in.)



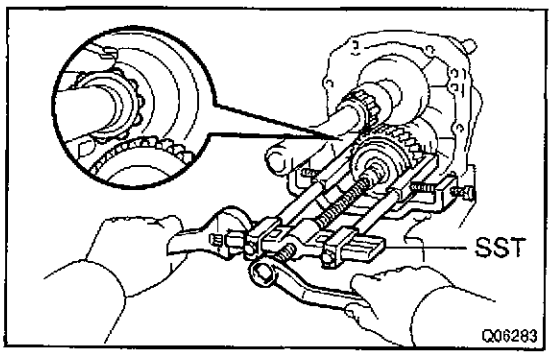
19. REMOVE COUNTER REAR BEARING, SPACER, COUNTER 5TH GEAR AND NEEDLE ROLLER BEARING

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

HINT:

At the time of reassembly, please refer to the following item.
Select a snap ring that allows the minimum axial play.

Mark	Thickness mm (in.)
1	1.90 – 1.95 (0.0748 – 0.0768)
2	1.96 – 2.01 (0.0772 – 0.0791)
3	2.02 – 2.07 (0.0795 – 0.0815)
4	2.08 – 2.13 (0.0819 – 0.0839)
5	2.14 – 2.19 (0.0843 – 0.0862)
6	2.20 – 2.25 (0.0866 – 0.0886)
7	2.26 – 2.31 (0.0890 – 0.0909)



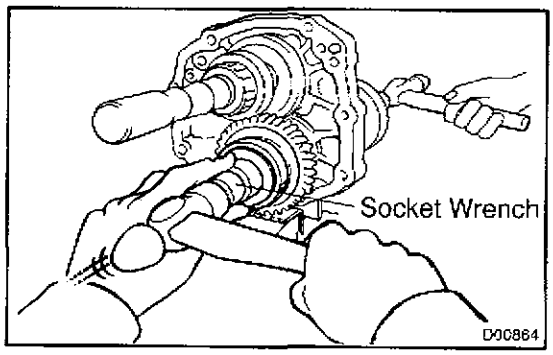
(b) Using SST, remove the rear bearing, spacer, 5th gear and bearing.

SST 09950–40010

NOTICE:

Take care so that the output shaft rear bearing roller interferes with the counter 5th gear.

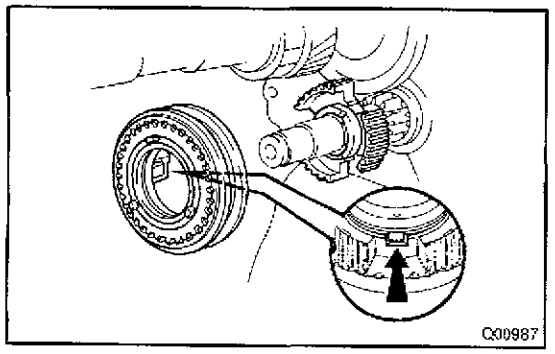
(c) Remove the spacer.



HINT:

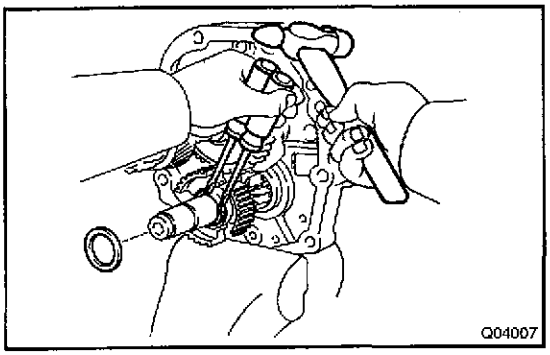
At the time of reassembly, please refer to the following items.

- Install the counter 5th gear with the 5th gear gaps aligned with the synchronizer cone ring pin.
- Using a socket wrench and hammer, drive in the bearing.
- When driving in the bearing, support the counter shaft in front with a hammer of 1.4 – 2.3 kg (3 – 5 lb) or equivalent.



20. REMOVE SYNCHRONIZER RING ASSEMBLY WITH NO.3 HUB SLEEVE AND NO.3 CLUTCH HUB

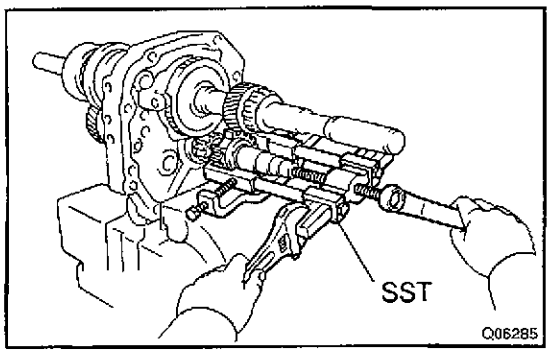
(a) Remove the synchronizer ring assembly with the No.3 hub sleeve from the No.3 clutch hub.


Q04007

(b) Remove the spacer.
(c) Using 2 screwdrivers and a hammer, tap out the snap ring.

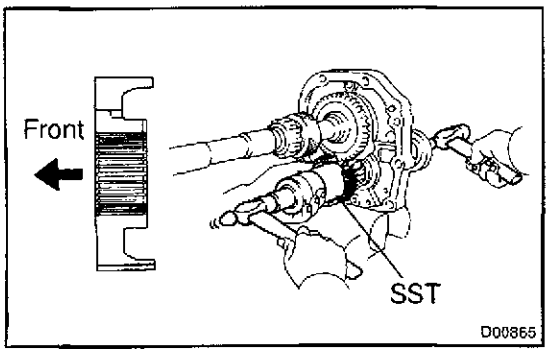
HINT:
At the time of reassembly, please refer to the following item.
Select a snap ring that allows the minimum axial play.

Mark	Thickness mm (in.)
2	2.06 – 2.11 (0.0811 – 0.0831)
3	2.12 – 2.17 (0.0835 – 0.0854)
4	2.18 – 2.23 (0.0858 – 0.0878)
5	2.24 – 2.29 (0.0882 – 0.0902)



Q06285

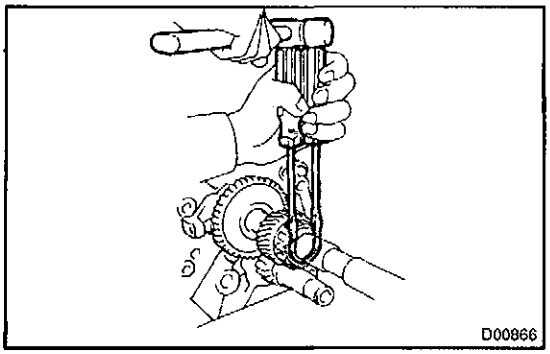
(d) Using SST, remove the No.3 clutch hub.
SST 09950–40010



D00865

HINT:
At the time of reassembly, please refer to the following items.
- Using SST and a hammer, drive in the No.3 clutch hub.
SST 09316–60011 (09316–00011, 09316–00071)
- When installing the No.3 clutch hub, support the counter shaft in front with a hammer of 1.4 – 2.3 kg (3 – 5 lb) or equivalent.

21. REMOVE REAR MAGNET



22. REMOVE OUTPUT SHAFT REAR BEARING AND 5TH GEAR

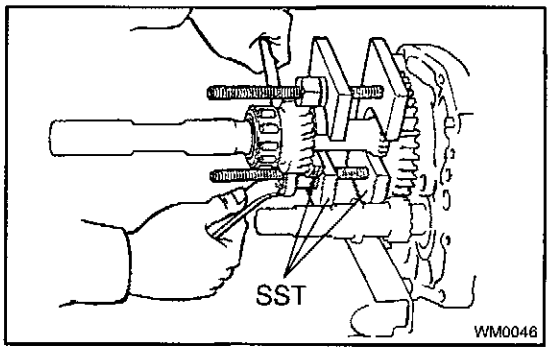
(a) Using 2 screwdrivers and a hammer, tap out the snap ring.

HINT:

At the time of reassembly, please refer to the following item.

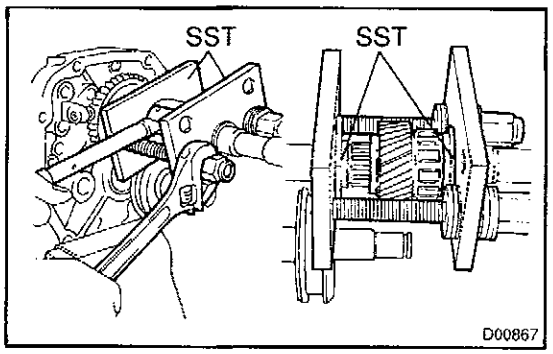
Select a snap ring that allows the minimum axial play.

Mark	Thickness mm (in.)
8	2.31 – 2.36 (0.0909 – 0.0929)
9	2.37 – 2.42 (0.0933 – 0.0953)
10	2.43 – 2.48 (0.0957 – 0.0976)
11	2.49 – 2.54 (0.0980 – 0.1000)
12	2.55 – 2.60 (0.1004 – 0.1024)
13	2.61 – 2.66 (0.1028 – 0.1047)
14	2.68 – 2.73 (0.1055 – 0.1075)
15	2.74 – 2.79 (0.1079 – 0.1098)



(b) Using SST, remove the rear bearing and 5th gear.

SST 09312–20011 (09313–00030, 09313–00040, 09313–00050)

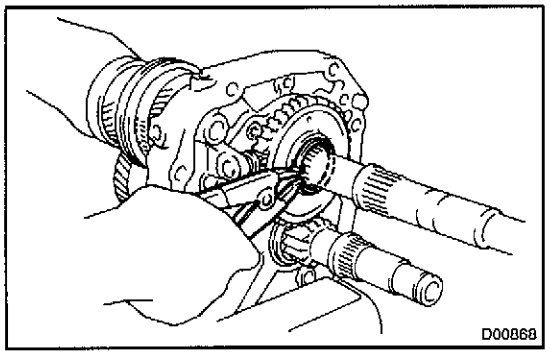


HINT:

At the time of reassembly, please refer to the following item.

Using SST, install the 5th gear and rear bearing.

SST 09312–20011 (09313–00010, 09313–00030, 09313–00040, 09313–00050)



23. REMOVE REVERSE GEAR

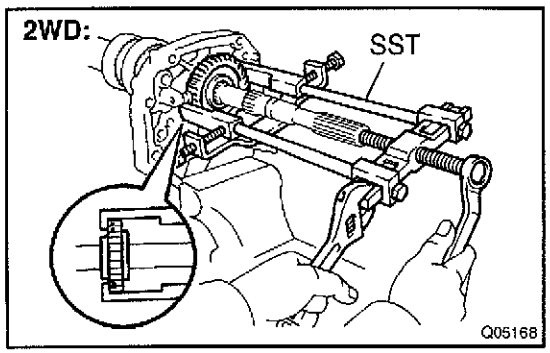
(a) Using a snap ring expander, remove the snap ring.

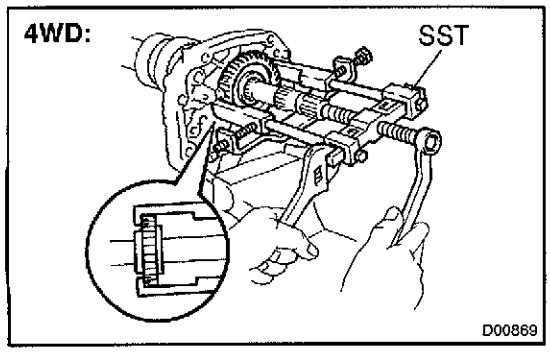
HINT:

At the time of reassembly, please refer to the following item.

Select a snap ring that allows the minimum axial play.

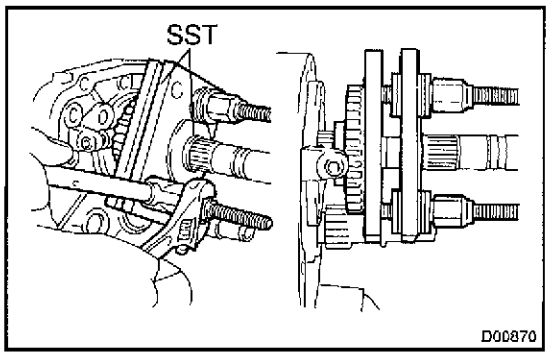
Mark	Thickness mm (in.)
5	2.25 – 2.30 (0.0886 – 0.0906)
11	2.30 – 2.35 (0.0906 – 0.0925)
12	2.35 – 2.40 (0.0925 – 0.0945)
13	2.40 – 2.45 (0.0945 – 0.0965)
14	2.45 – 2.50 (0.0965 – 0.0984)
15	2.50 – 2.55 (0.0984 – 0.1004)
16	2.55 – 2.60 (0.1004 – 0.1024)
17	2.61 – 2.66 (0.1028 – 0.1047)
18	2.67 – 2.72 (0.1051 – 0.1071)
19	2.73 – 2.78 (0.1075 – 0.1094)
20	2.79 – 2.84 (0.1098 – 0.1118)
21	2.85 – 2.90 (0.1122 – 0.1142)
22	2.91 – 2.96 (0.1146 – 0.1165)
23	2.97 – 3.02 (0.1169 – 0.1189)





(b) Using SST, remove the reverse gear.

SST 09950–40010



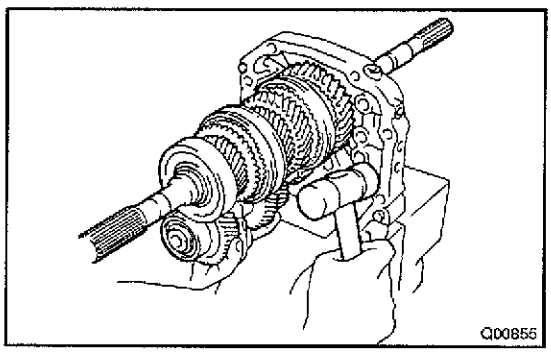
HINT:
At the time of reassembly, please refer to the following item.
Using SST, install the reverse gear.
SST 09312–20011 (09313–00030, 09313–00040, 09313–00050)

24. REMOVE REAR BEARING RETAINER

(a) Using a torx socket wrench (T40), unscrew the 4 torx screws and remove the rear bearing retainer.
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

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

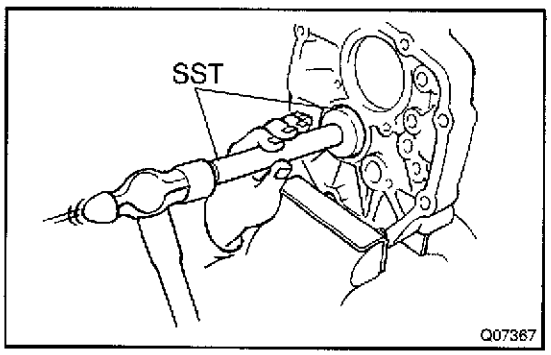
HINT:
At the time of reassembly, please refer to the following item.
Be sure the snap ring is flush with the intermediate plate surface.



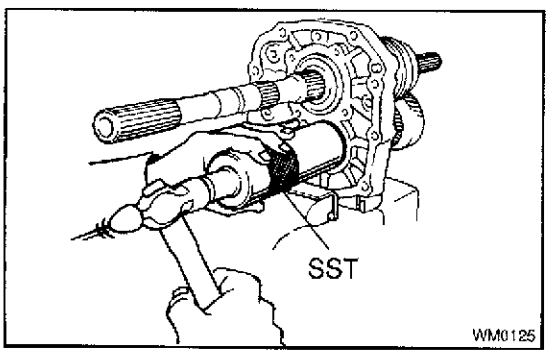
25. REMOVE OUTPUT SHAFT AND COUNTER GEAR FROM INTERMEDIATE PLATE

(a) Remove the output shaft, input shaft and counter gear as a unit from the intermediate plate by pulling on the counter gear and tapping on the intermediate plate with a plastic hammer.

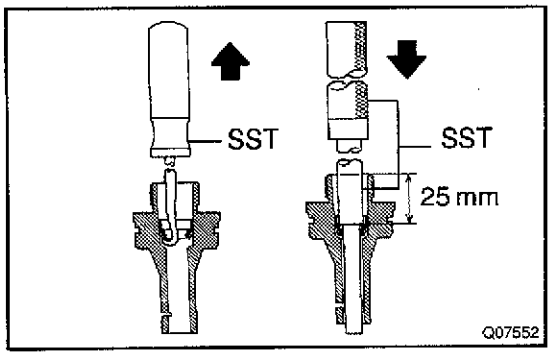
(b) Remove the input shaft from the output shaft.



HINT:
At the time of reassembly, please refer to the following items.
- Before installing the output shaft, use SST to remove the counter gear center bearing outer race.
  SST 09950–60010 (09951–00510), 09950–70010 (09951–07150)
- Install the outer race after installing the counter gear.
- Install the output shaft into the intermediate plate by pulling on the output shaft and tapping on the intermediate plate.



HINT:
At the time of reassembly, please refer to the following items.
- Apply gear oil to the needle roller bearing.
- Install the needle roller bearing to the input shaft.
- Install the input shaft and counter gear together.
- Using SST and a hammer, install a new counter gear center bearing outer race.
  SST 09316–60011 (09316–00011)
- Be careful not to damage the bearing rollers.



26. IF NECESSARY REPLACE SPEEDOMETER DRIVEN GEAR OIL SEAL

(a) Using SST, remove the oil seal.
SST 09921–00010

(b) Coat the lip of oil seal with MPgrease.

(c) Using SST, drive in a new oil seal.
SST 09201–10000 (09201–01080), 09950–70010 (09951–07150)
Drive in depth:
25 mm (0.98 in.)

MT000-08

REASSEMBLY

Reassembly is in the reverse order of disassembly. (See page MT–20)

HINT:

Coat all of the sliding and rotating surfaces with gear oil before reassembly.