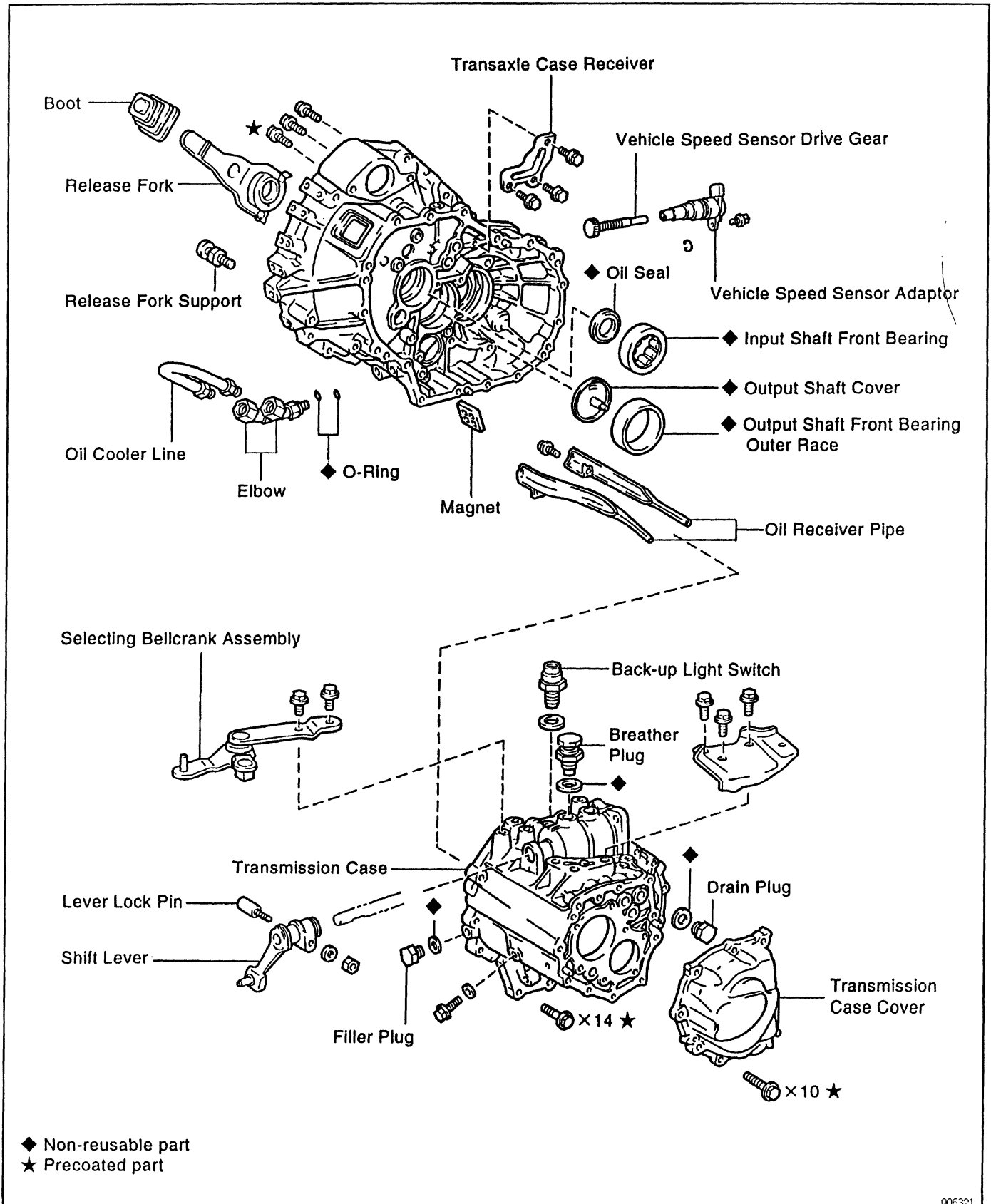
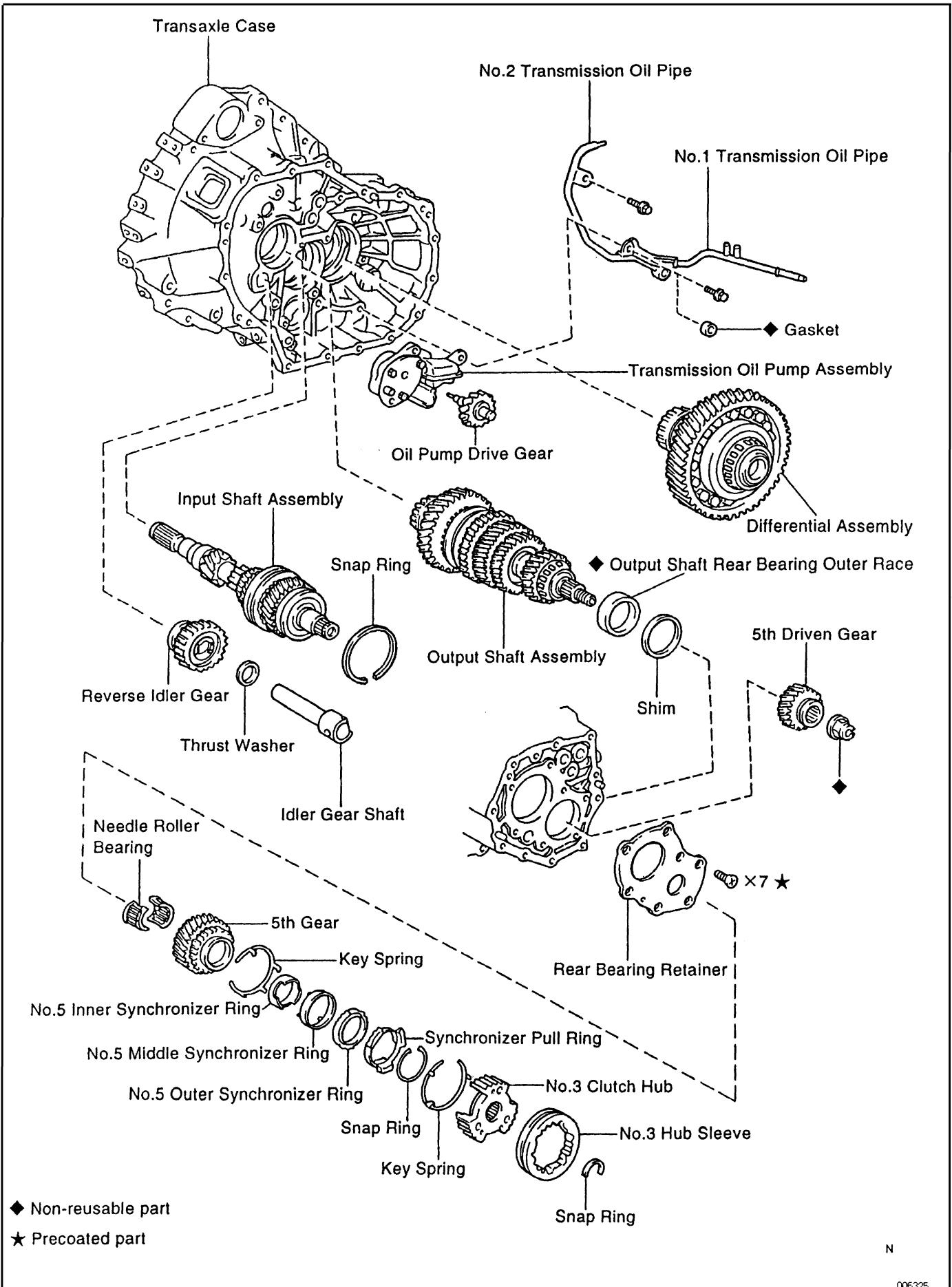
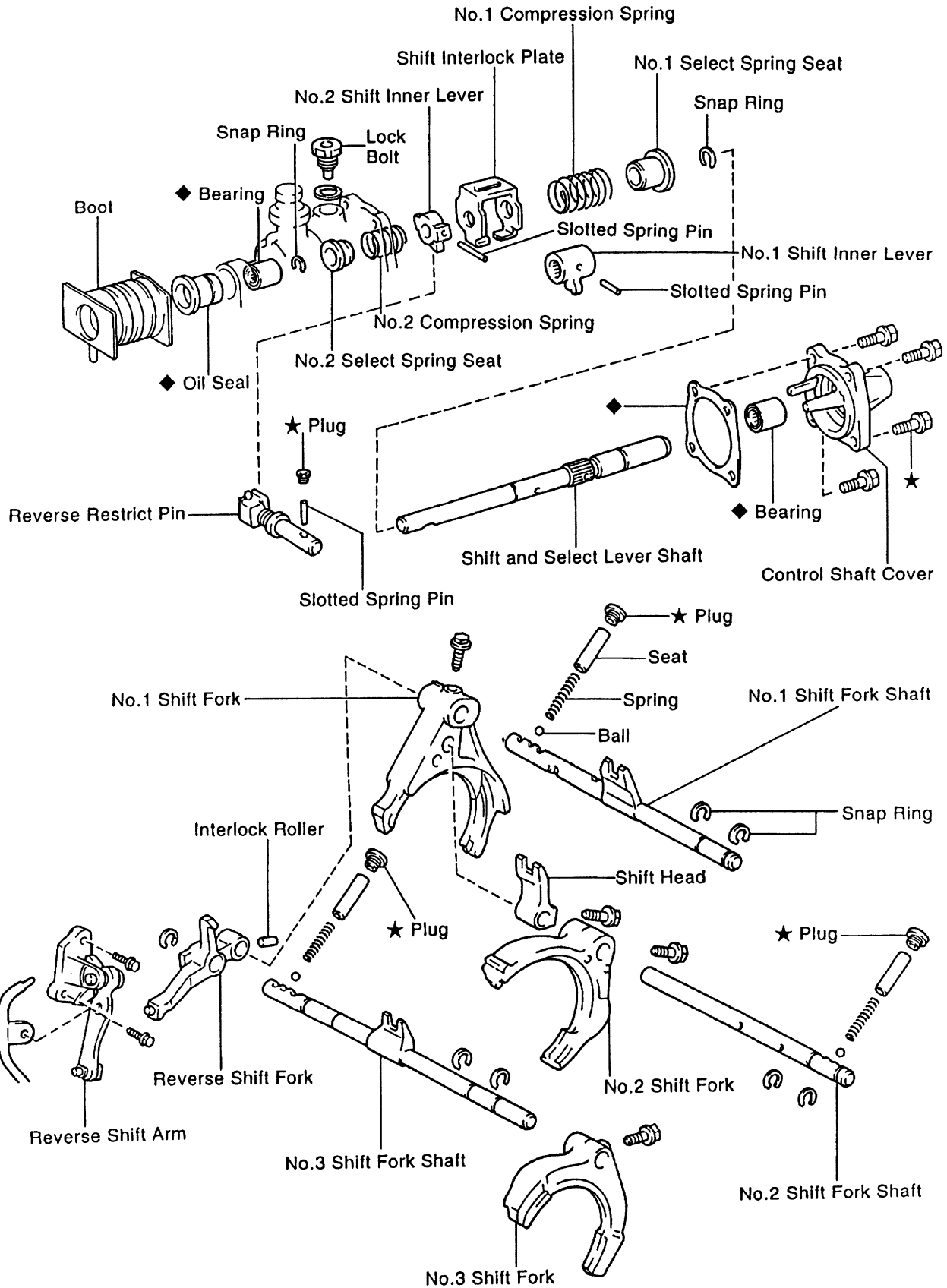


# COMPONENT PARTS REMOVAL COMPONENTS







◆ Non-reusable part

★ Precoated part

## BASIC SUBASSEMBLY SEPARATION

(See pages [MX2-12](#) to [MX2-14](#))

Assembly is in the reverse order of separation.

INSTALLATION HINT: Coat all of the sliding and rotating surfaces with gear oil before assembly.

### 1. REMOVE RELEASE FORK AND BEARING INSTALLATION

HINT: Apply molybdenum disulphide base grease (See page [CL-12](#)).

### 2. REMOVE BACK-UP LIGHT SWITCH

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

### 3. REMOVE VEHICLE SPEED SENSOR

Remove the set bolt, lock plate and vehicle speed sensor.

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

### 4. REMOVE SELECTING BELLCRANK ASSEMBLY

Remove the 2 bolts and selecting bellcrank assembly.

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

### 5. REMOVE SHIFT LEVER

(a) Remove the shift lever set nut.

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

(b) Using a pin punch and hammer, tap out the lock pin.

### 6. REMOVE LOCK BOLT

Torque: 49 N-m (500 kgf-cm, 36 ft-lbf)

### 7. REMOVE CONTROL SHAFT COVER WITH GASKET

Remove the 4 bolts holding the control shaft cover.

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

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

### 8. REMOVE SHIFT AND SELECT LEVER SHAFT ASSEMBLY

### 9. REMOVE TRANSMISSION CASE COVER

Remove the 10 bolts and case cover.

FIPG:

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

INSTALLATION HINT: Install the transmission case cover as soon as FIPG is applied.

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

### 10. REMOVE BREATHER PLUG WITH GASKET

Torque: 49 N-m (500 kgf-cm, 36 ft-lbf)

### 11. REMOVE LOCK NUT

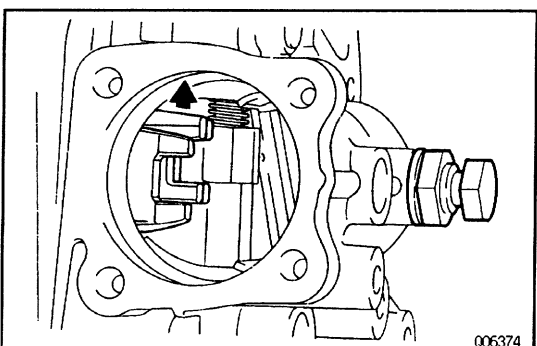
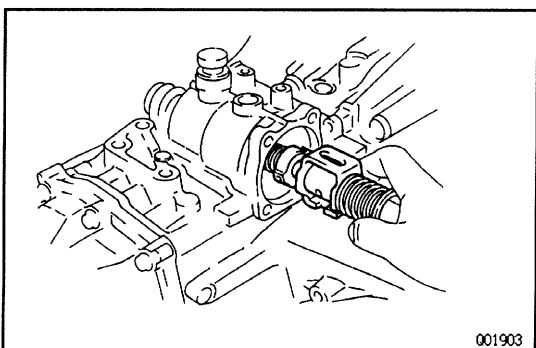
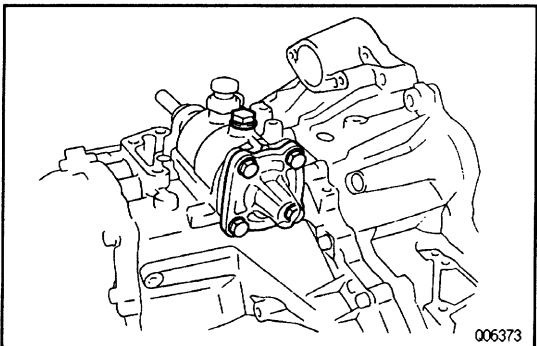
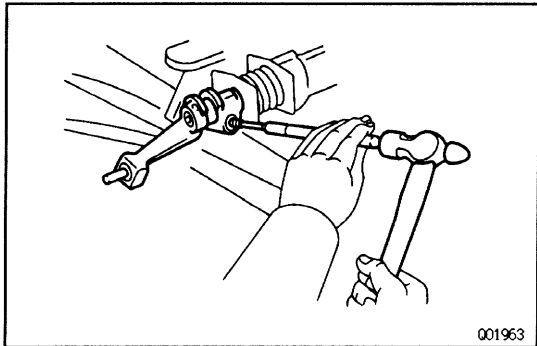
(a) Unstake the lock nut.

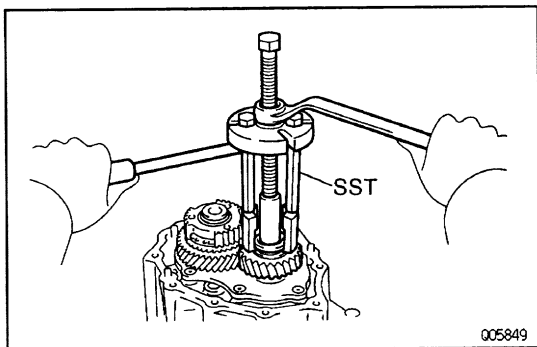
(b) Engage the gear double meshing.

(c) Remove the lock nut.

Torque: 123 N-m (1,250 kgf-cm, 90 ft-lbf)

(d) Disengage the gear double meshing.





## 12. REMOVE NO. 3 HUB SLEEVE AND NO. 3 SHIFT FORK

(a) Remove the No.3 shift fork set bolt.

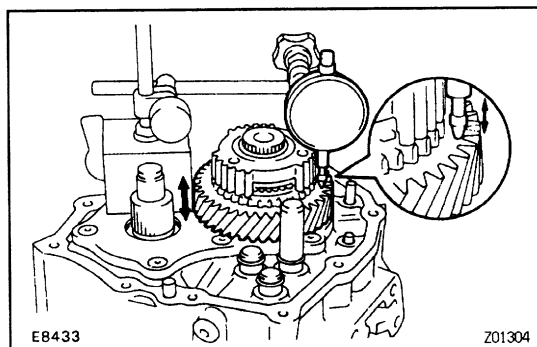
**Torque: 24 N·m (240 kgf·cm, 17 ft·lbf)**

(b) Remove the No.3 hub sleeve and No.3 shift fork.

## 13. REMOVE 5TH DRIVEN GEAR

Using SST, remove the 5th driven gear.

SST 09950-30010



## 14. MEASURE 5TH GEAR THRUST CLEARANCE AND RADIAL CLEARANCE

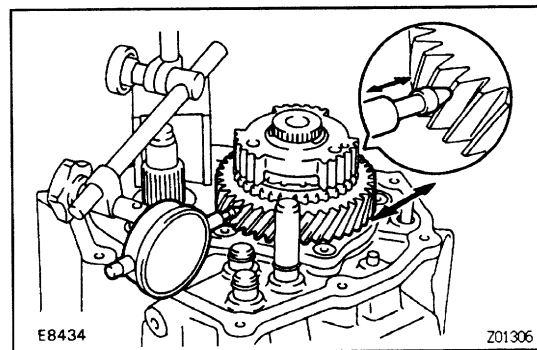
(a) Using a dial indicator, measure the thrust clearance.

**Standard clearance:**

**0.10-0.57 mm (0.0039-0.0224 in.)**

**Maximum clearance:**

**0.65 mm (0.0256 in.)**



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

**Standard clearance:**

**0.009-0.050 mm (0.0004-0.0020 in.)**

**Maximum clearance:**

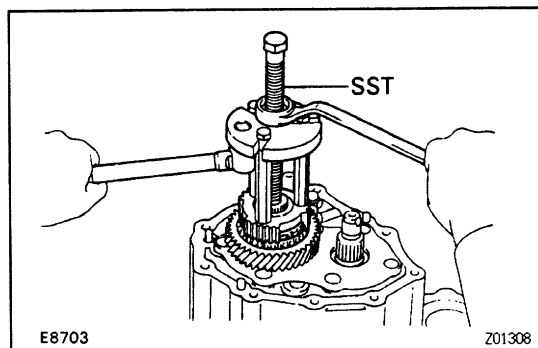
**0.070 mm (0.0028 in.)**

## 15. REMOVE NO.3 CLUTCH HUB AND 5TH GEAR

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

**INSTALLATION HINT:** Select a snap ring that will allow minimum axial play.

Mark	Thickness mm (in.)	Mark	Thickness mm (in.)
Q	2.25 (0.0886)	V	2.50 (0.0984)
R	2.30 (0.0906)	W	2.55 (0.1004)
S	2.35 (0.0925)	X	2.60 (0.1024)
T	2.40 (0.0945)	Y	2.65 (0.1043)
U	2.45 (0.0965)	-	-



(b) Using SST, remove the No.3 clutch hub with the synchronizer ring and 5th gear.

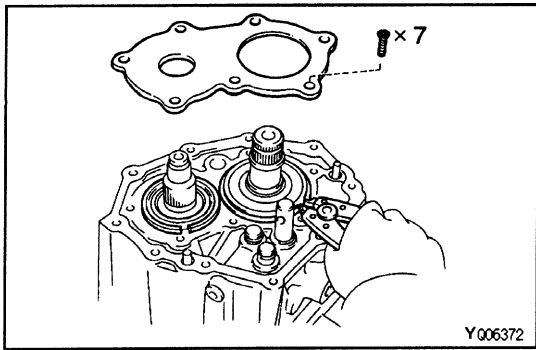
SST 09950 - 30010

## 16. REMOVE NEEDLE ROLLER BEARING AND SPACER

## 17. REMOVE REAR BEARING RETAINER

Using a torx socket wrench, remove the 7 torx screw and bearing retainer.

(Torx wrench T45 09042-00050)

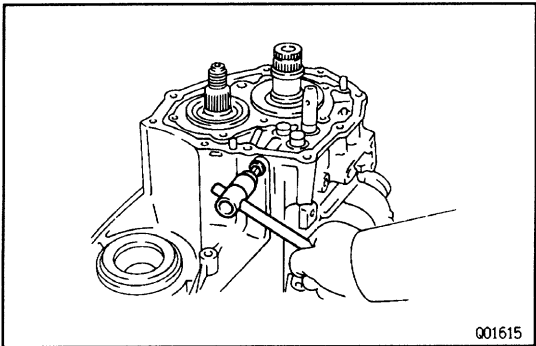


**Sealant: Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent**

**Torque: 42 N-m (430 kgf-cm, 31 ft-lbf)**

#### 18. REMOVE SNAP RINGS

- Using a snap ring expander, remove the input shaft rear bearing snap ring.
- Using 2 screwdrivers and a hammer, remove the 3 snap rings.



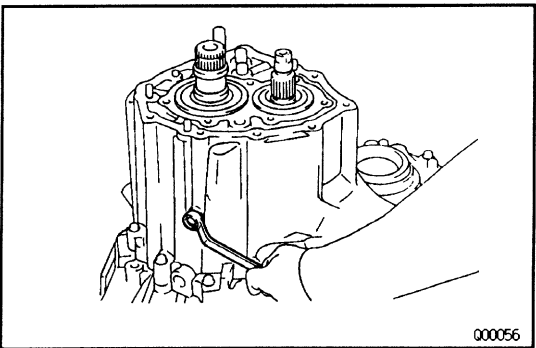
#### 19. REMOVE PLUG, SEAT, SPRING AND LOCKING BALL

- Using a hexagon wrench (6 mm), remove the plug.

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

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

- Using a magnetic finger, remove the seat, spring and locking bail.



#### 20. REMOVE REVERSE IDLER GEAR SHAFT RETAINING BOLT

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

#### 21. REMOVE TRANSMISSION CASE

- Remove the 3 bolts from the transaxle case side.
- Torque: 29 N-m (300 kgf-cm, 22 ft-lbf)**
- Remove the 14 bolts from the transmission side and tap the case with a plastic hammer.

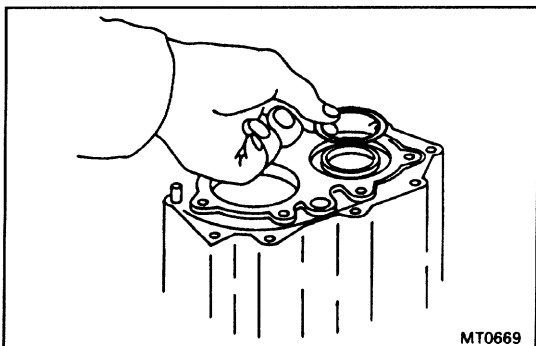
#### FIPG:

**Part No. 08826-00090, THREE BOND 1281 or equivalent**

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

#### INSTALLATION

**HINT:** Install the transmission case as soon as FIPG is applied.



#### 22. REMOVE SHIM

#### INSTALLATION

**HINT:** ADJUST OUTPUT SHAFT PRELOAD

- install the output shaft assembly.
- Install the transmission case to the transaxle case.
- Install and torque the 17 bolts.

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

- Install the output shaft rear taper roller bearing outer race.

- (e) Install the adjusting shim.  
When reusing the output shaft bearing, first install a shim of the same thickness as before. If installing a new taper roller bearing, first select and install a shim of lesser thickness than before.
- (f) Install the rear bearing retainer.
- (g) Using a torx wrench, install and torque the 7 torx screws.

(Torx wrench T45 09042-00050)

**Torque: 42 N-m (430 kgf-cm, 31 ft-lbf)**

- (h) Install a new lock nut to the output shaft.
- (i) Turn the output shaft right and left 2 or 3 times to allow the bearing to settle.
- (j) Using a torque wrench, measure the preload.

**Preload (at starting):**

**New bearing**

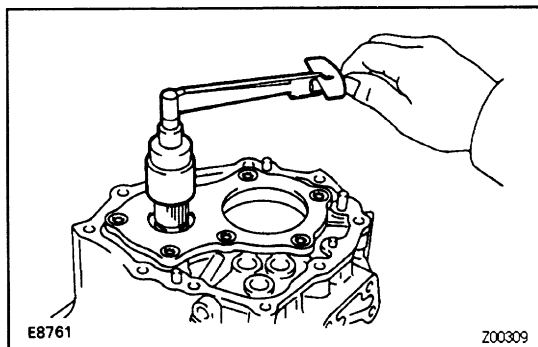
**0.8-1.6 N-m (8-16 kgf-cm, 6.9-13.9 in.-lbf)**

**Reused bearing**

**0.5-1.0 N-m (5-10 kgf-cm, 4.3-8.7 in.-lbf)**

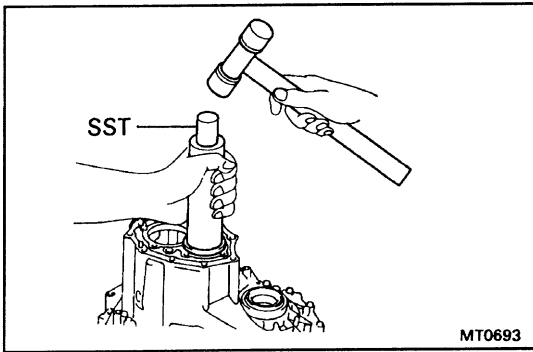
If the preload is not within specification, select an appropriate adjusting shim.

The preload will change by about 0.4-0.5 N-m (4-5 kgf-cm, 3.5-4.3 in.-lbf) with each 0.05 mm change in adjusting shim thickness.



Mark	Thickness mm (in.)	Mark	Thickness mm (in.)
0	1.30 (0.0512)	D	1.95 (0.0768)
1	1.35 (0.0531)	E	2.00 (0.0787)
2	1.40 (0.0551)	F	2.05 (0.0807)
3	1.45 (0.0571)	G	2.10 (0.0827)
4	1.50 (0.0591)	H	2.15 (0.0846)
5	1.55 (0.0610)	J	2.20 (0.0866)
6	1.60 (0.0630)	K	2.25 (0.0886)
7	1.65 (0.0650)	L	2.30 (0.0906)
8	1.70 (0.0669)	M	2.35 (0.0925)
9	1.75 (0.0689)	N	2.40 (0.0945)
A	1.80 (0.0709)	P	2.45 (0.0965)
B	1.85 (0.0728)	Q	2.50 (0.0984)
C	1.90 (0.0748)	-	-

- (k) Remove the lock nut.
- (l) Remove these parts. Removal is in the reverse order of installation.
- Rear bearing retainer
  - Shim
  - Transmission case
  - Output shaft assembly
  - Output shaft rear bearing outer race



### 23. REMOVE OUTPUT SHAFT REAR TAPER ROLLER BEARING OUTER RACE

Using SST and a hammer, remove the output shaft rear taper roller bearing outer race.

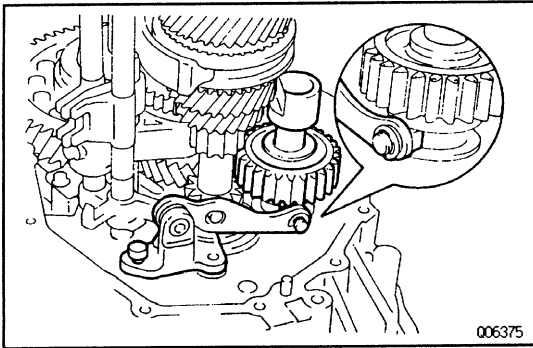
SST 09316-60010 (09316-00010)

### 24. REMOVE NO.2 OIL PIPE

(a) Remove the gasket.

(b) Remove the 2 bolts and oil pipe.

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



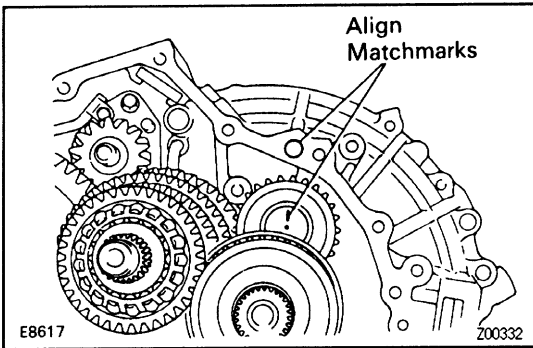
### 25. REMOVE REVERSE SHIFT ARM BRACKET

Remove the bolt and pull off the bracket.

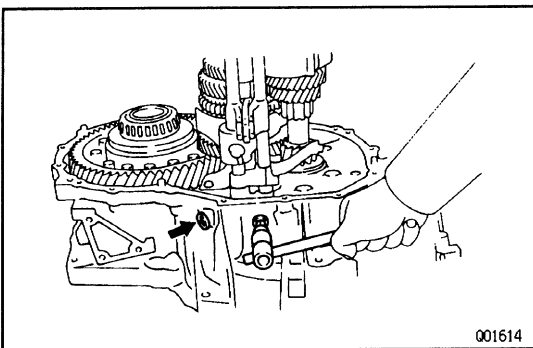
Torque: 17 N-m (175 kgf-cm, 13 ft-lbf)

### 26. REMOVE REVERSE IDLER GEAR AND SHAFT

Pull out the shaft, remove the reverse idler gear and thrust washer.



INSTALLATION HINT: Align the matchmarks, as shown.



### 27. REMOVE STRAIGHT SCREW PLUGS, LOCKING BALLS AND SPRINGS

(a) Using a hexagon wrench (6 mm), remove the 2 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 2 spring seats, springs and balls.

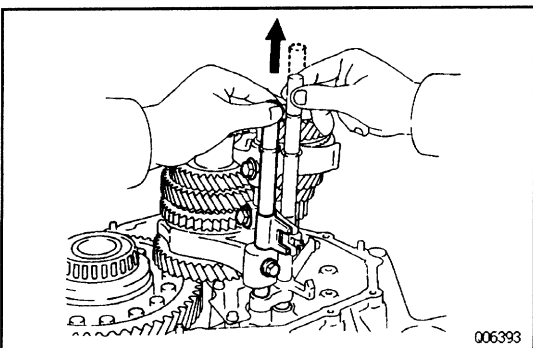
### 28. REMOVE NO. 1, NO. 2 SHIFT FORK AND SHIFT HEAD SET BOLTS

Torque: 24 N-m (250 kgf-cm, 18 ft-lbf)

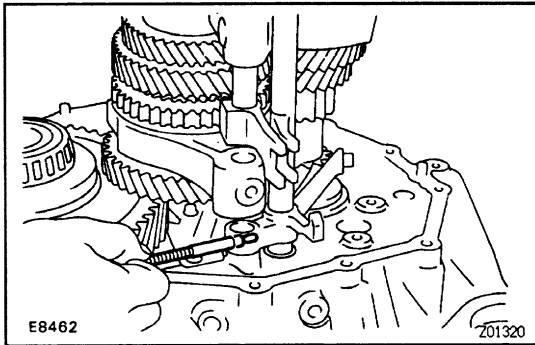
### 29. REMOVE NO.1 SHIFT FORK SHAFT

Pull up the No.3 shift fork shaft, remove the No. 1 shift fork shaft.

INSTALLATION HINT: When it is difficult to push the fork shaft through the reverse shift fork, pull up the No.3 shift fork shaft.





**30. REMOVE INTERLOCK ROLLER**

Using a magnetic finger, remove the interlock roller from the reverse shift fork.

**31. REMOVE NO.2 SHIFT FORK SHAFT, SHIFT HEAD AND NO.1 SHIFT FORK**

- (a) Pull out the No.2 shift fork shaft.
- (b) Remove the shift head and No.1 shift fork.

**32. REMOVE NO.3 SHIFT FORK SHAFT WITH REVERSE SHIFT FORK AND NO.2 SHIFT FORK**

- (a) Pull out the No.3 shift fork shaft with the reverse shift fork.
- (b) Remove the No.2 shift fork.

**33. REMOVE SNAP RINGS**

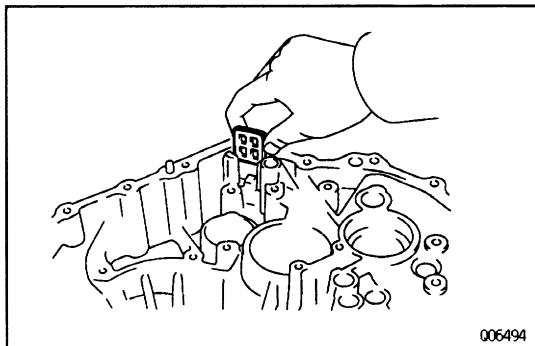
- (a) Using 2 screwdrivers and a hammer, remove the snap ring and reverse shift fork from the No.3 shift fork shaft.
- (b) Using 2 screwdrivers and a hammer, remove the snap rings from the No.1, No.2 and No.3 shift fork shafts.

**34. REMOVE INPUT AND OUTPUT SHAFT ASSEMBLY**

- (a) Leaning the output shaft to the differential side, remove the input shaft assembly.
- (b) Lift up the differential case assembly, remove the output shaft.

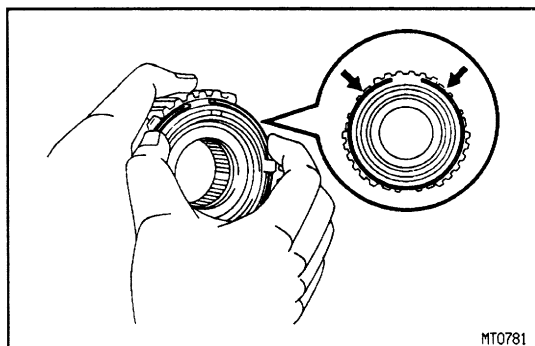
**35. REMOVE DIFFERENTIAL ASSEMBLY**

- (a) Remove the oil pump drive gear.
- (b) Remove the differential case assembly.

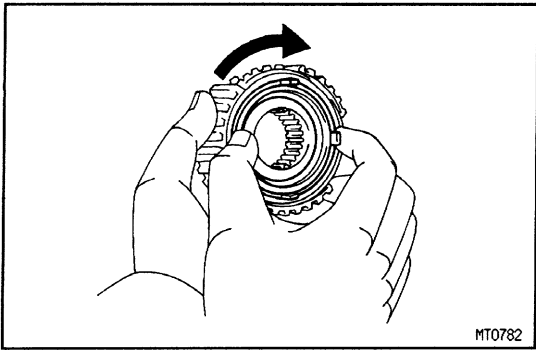
**36. REMOVE MAGNET FROM TRANSAXLE CASE****37. REMOVE OIL PUMP ASSEMBLY AND OIL PIPE**

- (a) Remove the 2 bolts and oil pipe.
- (b) Remove the 2 bolts and oil pump.

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

**38. REMOVE NO.5 SYNCHRONIZER RING WITH KEY SPRING FROM NO.3 CLUTCH HUB**

- (a) Remove the No. 5 synchronizer ring with the key spring from the No.3 clutch hub.
- (b) Using a screwdriver, remove the snap ring.  
HINT: Wrap vinyl tape on the screwdriver to prevent damaging the synchronizer ring.
- (c) Remove the synchronizer rings.



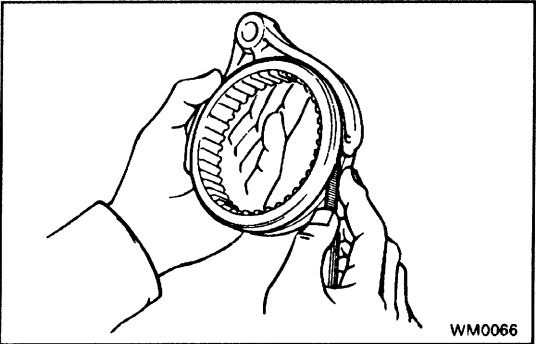
MT0782

## COMPONENT PARTS INSPECTION

### 1. INSPECT NO.5 SYNCHRONIZER RINGS

- (a) Check for wear or damage.
- (b) Check the braking effect of the synchronizer ring.  
Turn the middle No.5 synchronizer ring in one direction while pushing it to the outer No.5 synchronizer ring. Check that the ring locks.

If it does not lock, replace the synchronizer ring.



WM0066

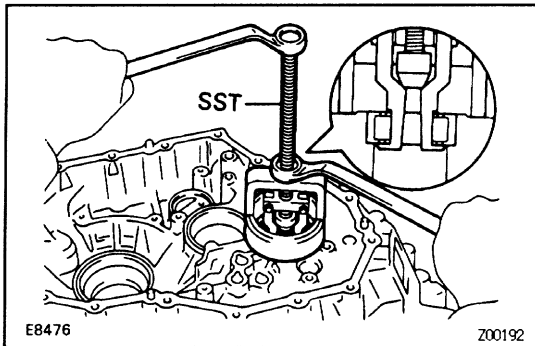
### 2. MEASURE SHIFT FORKS AND HUB SLEEVES CLEARANCE

Using a feeler gauge, measure the clearance between the hub sleeve and shift fork.

#### Maximum clearance:

**1.0 mm (0.039 in.)**

If the clearance exceeds the limit, replace the shift fork or hub sleeve.

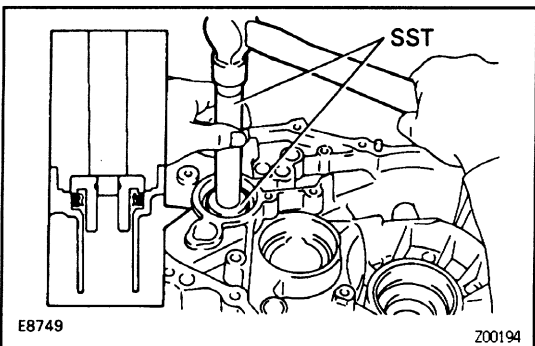


E8476

Z00192

### 3. IF NECESSARY, REPLACE INPUT SHAFT BEARING AND OIL SEAL

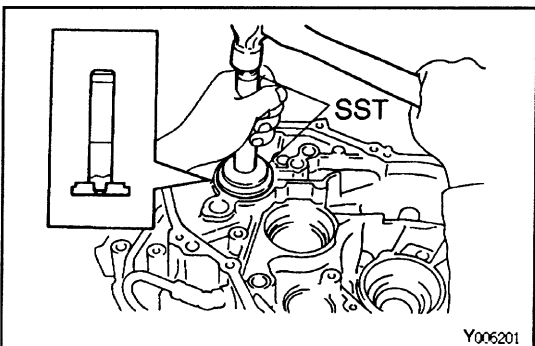
- (a) Remove the 3 bolts and transaxle case receiver.
- (b) Using SST, pull out the bearing.  
SST 09612-65014
- (c) Using a screwdriver, remove the oil seal.



E8749

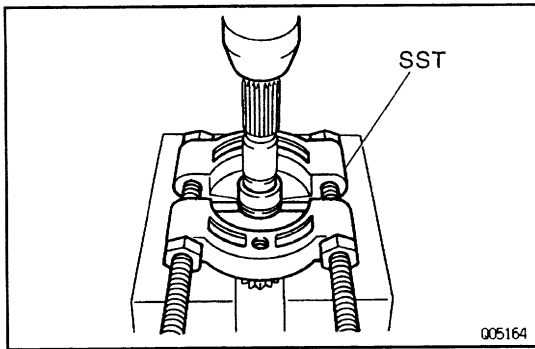
Z00194

- (d) Using SST, drive in a new oil seal.  
SST 09608-12010 (09608-00020, 09608-00080)
- (e) Coat the lip of seal with MP grease.

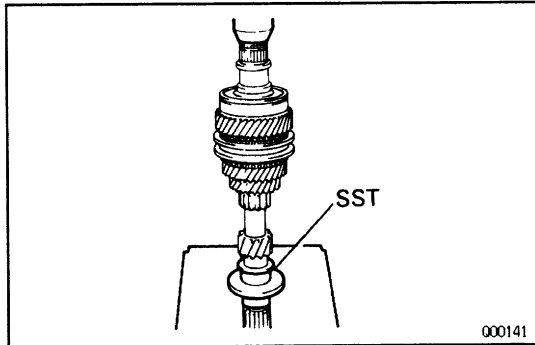


Y006201

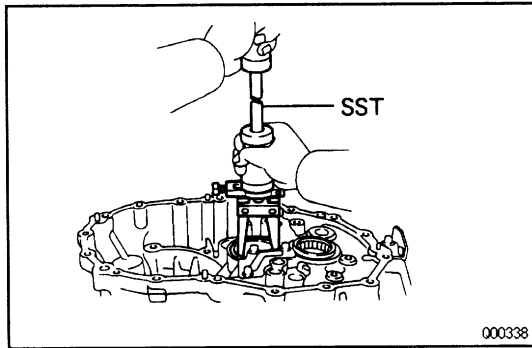
- (f) Using SST, drive in a new bearing.  
SST 09608-12010 (09608-00020, 09608-00060)
- (g) Install the transaxle case receiver.
- (h) Install and torque the 3 bolts.  
**Torque: 7.4 N-m (75 kgf-cm, 65 in.-lbf)**



- (i) Using SST and a press, remove the inner race.  
SST 09950-00020

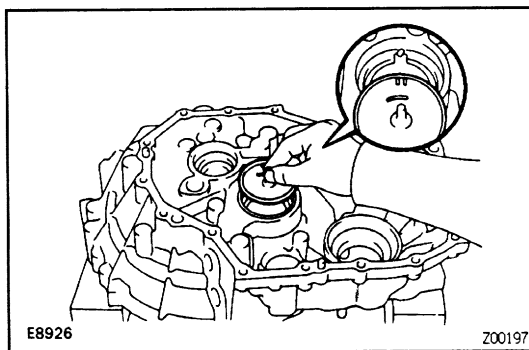


- (j) Using SST and a press, install a new input shaft front bearing inner race.  
SST 09316-60010 (09316-00020)

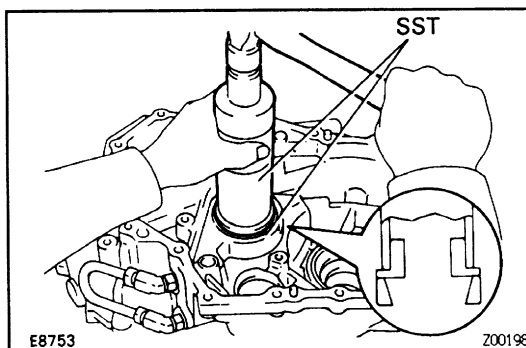


#### 4. IF NECESSARY, REPLACE OUTPUT SHAFT FRONT BEARING AND OUTPUT SHAFT FRONT COVER

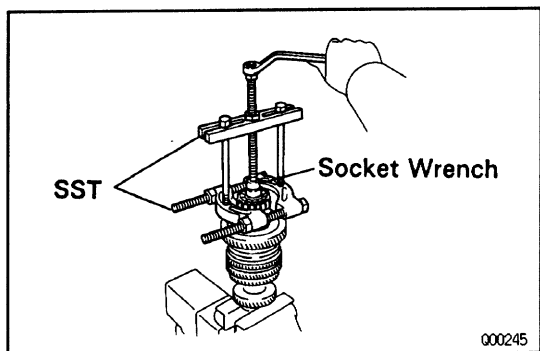
- (a) Using SST, pull out the output shaft front bearing outer race.  
SST 09308-00010
- (b) Remove the output shaft cover.



- (c) Install a new output shaft cover.  
HINT: Install the output shaft cover projection into the case side groove.

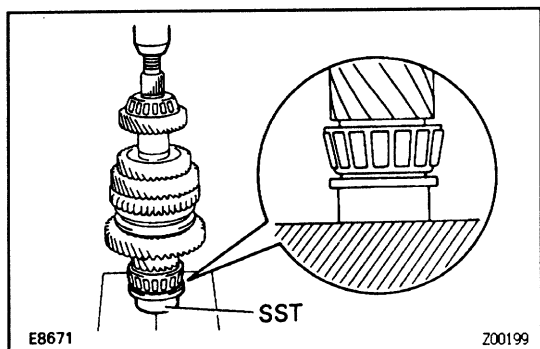


- (d) Using SST and a hammer, drive in a new output shaft front bearing outer race.  
SST 09316-60010 (09316-00010, 09316-00020)



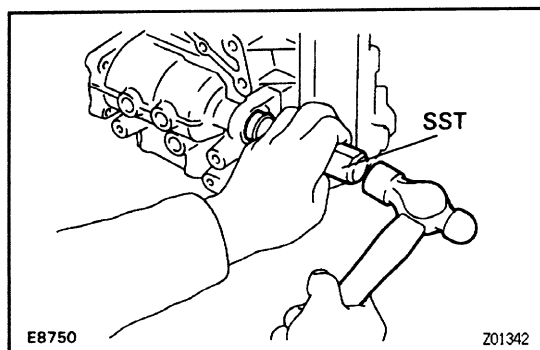
- (e) Using SST and a socket wrench, remove the output shaft front bearing.

SST 09950-00020, 09950-00030



- Using SST and a press, install a new output shaft front bearing.

SST 09316-60010 (09316-00070)

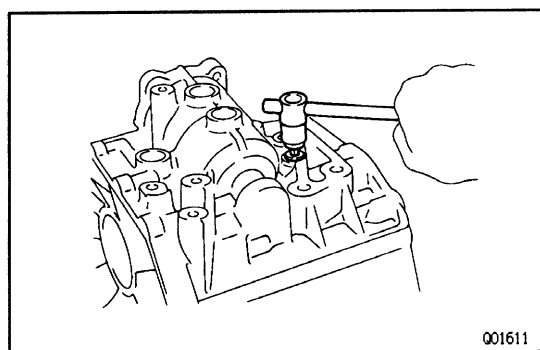


#### 5. IF NECESSARY, REPLACE SHIFT CONTROL SHAFT OIL SEAL

- (a) Using a screwdriver and hammer, remove the oil seal.  
 (b) Using SST, drive in a new oil seal until it touches the bottom.

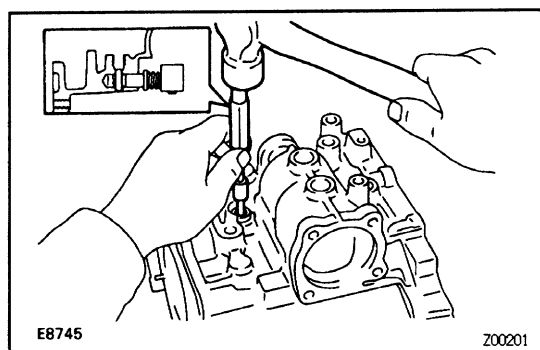
SST 09517 - 36010

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



#### 6. IF NECESSARY, REPLACE REVERSE RESTRICT PIN

- (a) Using a hexagon wrench (6 mm), remove the screw plug.  
 (b) Using a pin punch and hammer, drive out the slotted spring pin.  
 (c) Replace the reverse restrict pin.



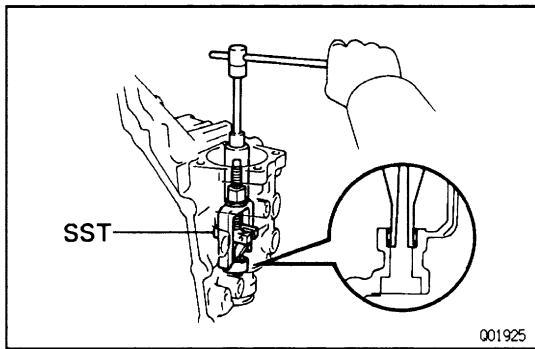
- (d) Using a pin punch and hammer, drive in the slotted spring pin.

- (e) Apply sealant to the screw plug threads.

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

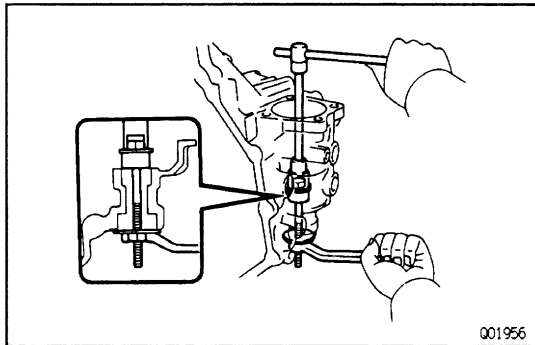
- (f) Using a hexagon wrench (6 mm), install and torque the screw plug.

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

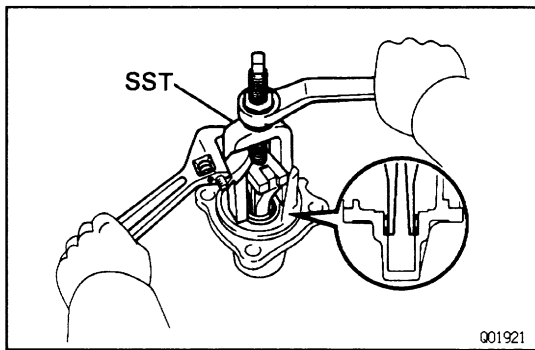


## 7. IF NECESSARY, REPLACE CONTROL SHAFT FRONT BEARING

- (a) Using SST, remove the needle roller bearing from the transmission case.  
SST 09319-60020

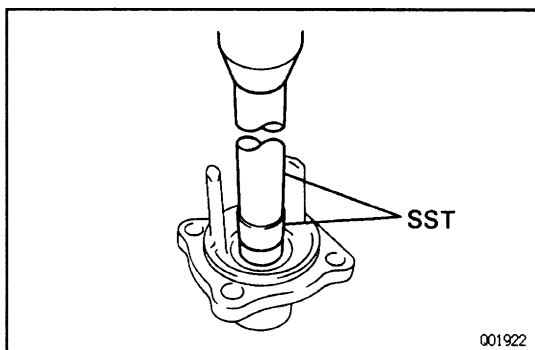


- (b) Using a suitable bolt, nut and 2 washers, install a new needle roller bearing to the transmission case.



## 8. IF NECESSARY, REPLACE CONTROL SHAFT REAR BEARING

- (a) Using SST, remove the needle roller bearing from the control shaft cover.  
SST 09319-60020



- (b) Using SST and a press, press in a new needle roller bearing to the control shaft cover.  
SST 09620-30010 (09631-00020),  
09630-24013 (09620-24010)