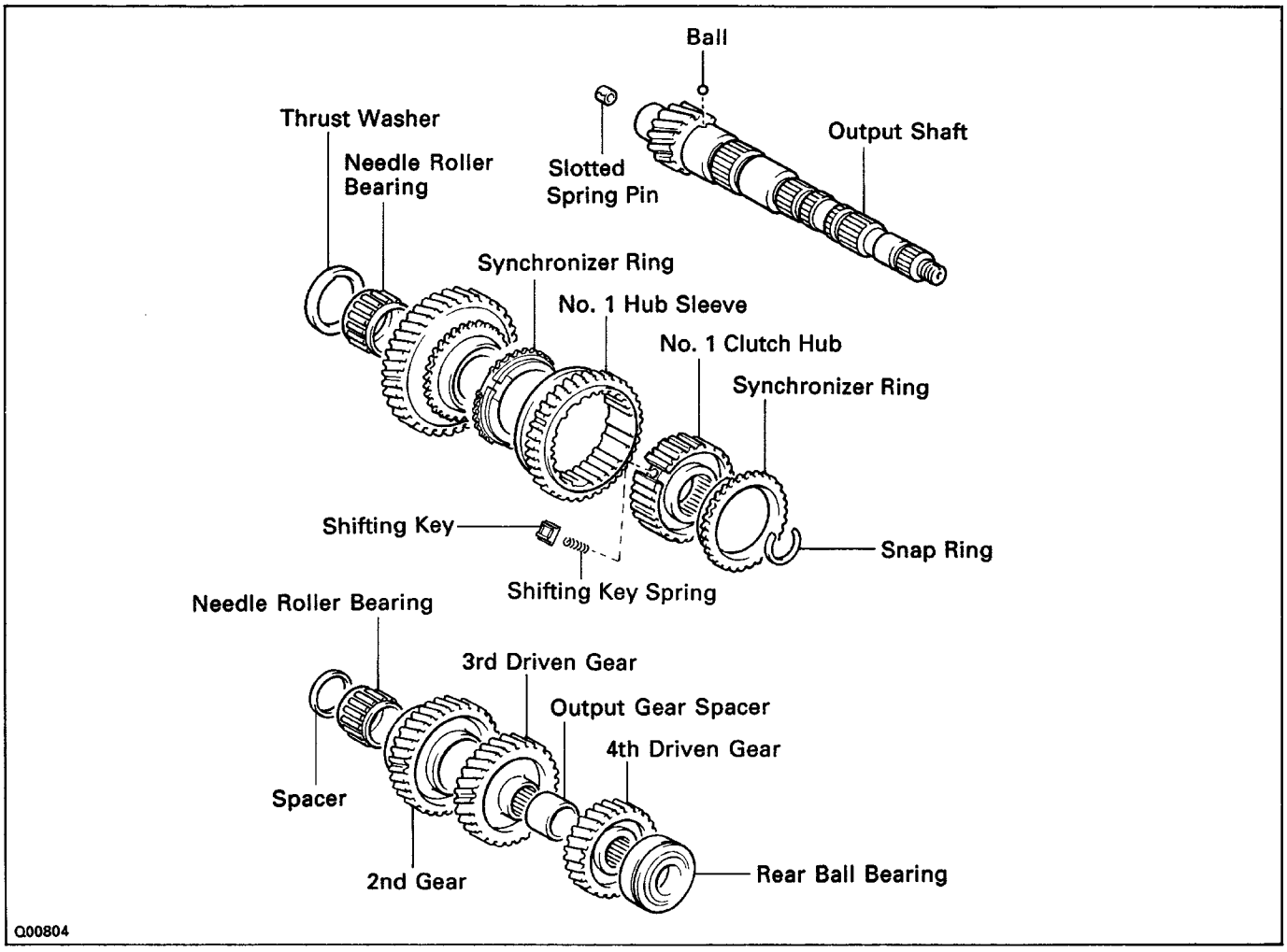
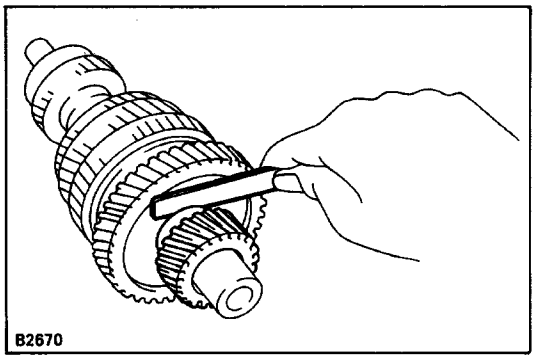
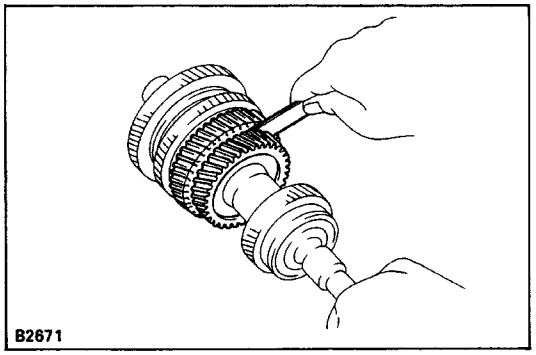
Output Shaft Assembly

COMPONENTS







DISASSEMBLY OF OUTPUT SHAFT ASSEMBLY

1. INSPECT FIRST AND SECOND GEAR THRUST CLEARANCE

Using a feeler gauge, measure the thrust clearance.

Standard clearance:

1st gear

0.10–0.40 mm (0.0039–0.0157 in.)

2nd gear

0.10–0.45 mm (0.0039–0.0177 in.)

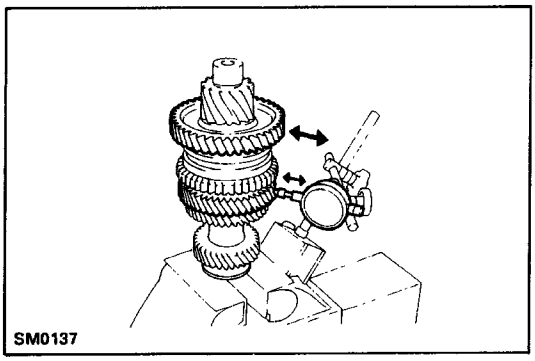
Maximum clearance:

1st gear

0.45 mm (0.0177 in.)

2nd gear

0.50 mm (0.0197 in.)



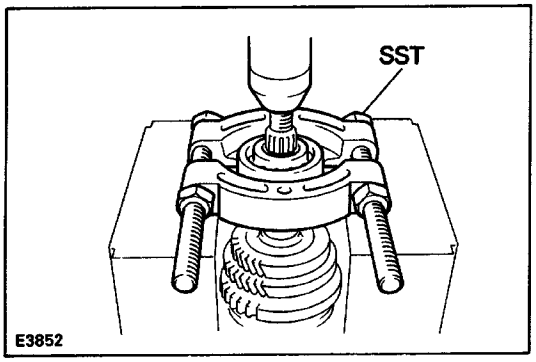
2. INSPECT FIRST AND SECOND GEAR OIL CLEARANCE

Using a dial indicator, measure the oil clearance between the gear and shaft.

Standard clearance: 0.015–0.058 mm (0.0006–0.0023 in.)

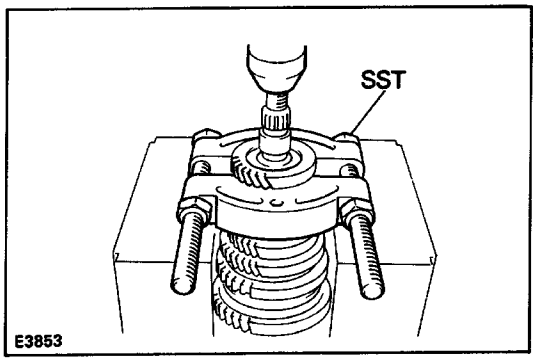
Maximum clearance: 0.070 mm (0.0028 in.)

If the clearance exceeds the minimum, replace the gear, needle roller bearing and shaft.



3. REMOVE REAR BALL BEARING

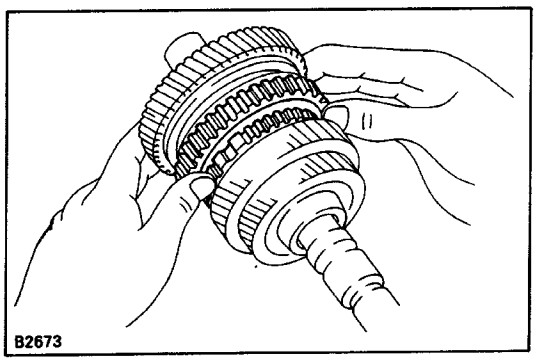
(a) Using SST and a press, remove the rear ball bearing.
SST 09950–00020



4. REMOVE FOURTH DRIVEN GEAR AND OUTPUT GEAR SPACER

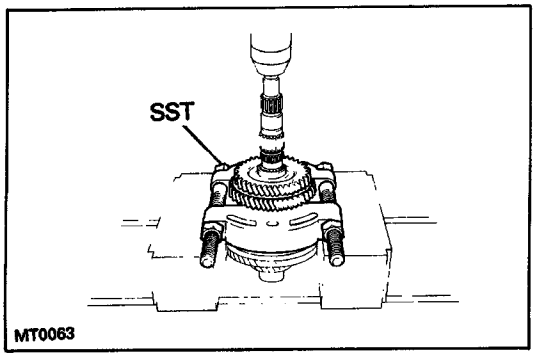
(a) Using SST and a press, remove the 4th driven gear.
SST 09950–00020

(b) Remove the spacer.



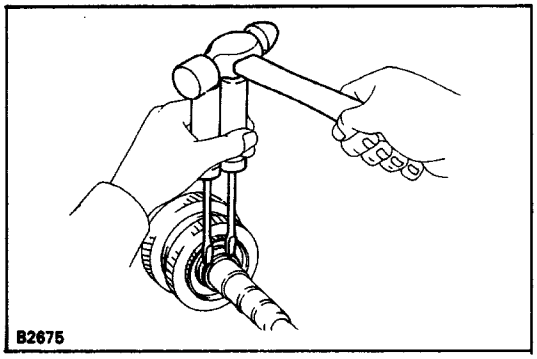
5. REMOVE THIRD DRIVEN GEAR, SECOND GEAR, NEEDLE ROLLER BEARING, SYNCHRONIZER RING AND SPACER

(a) Shift No. 1 hub sleeve into the 1st gear.



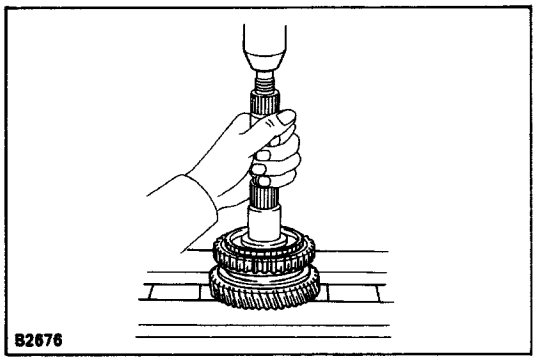
(b) Using SST and a press, remove the 3rd driven gear.
SST 09950–00020

(c) Remove the 2nd gear, needle roller bearing, synchronizer ring and spacer.



6. REMOVE SNAP RING

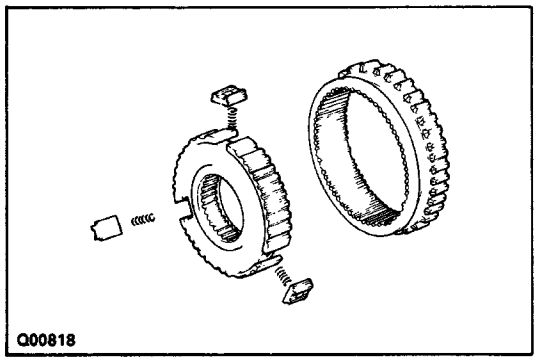
Using two screwdrivers and a hammer, tap out the snap ring.



7. REMOVE NO. 1 HUB SLEEVE ASSEMBLY, FIRST GEAR, SYNCHRONIZER RING, NEEDLE ROLLER BEARING, THRUST WASHER AND BALL

(a) Using a press, remove No. 1 hub sleeve, 1st gear and synchronizer ring.

(b) Remove the needle roller bearing, thrust washer and ball.



8. REMOVE NO. 1 HUB SLEEVE, SHIFTING KEYS AND SPRINGS FROM NO. 1 CLUTCH HUB

INSPECTION OF OUTPUT SHAFT COMPONENT PARTS

1. INSPECT SYNCHRONIZER RING FOR FIRST GEAR

(a) Check for wear or damage.

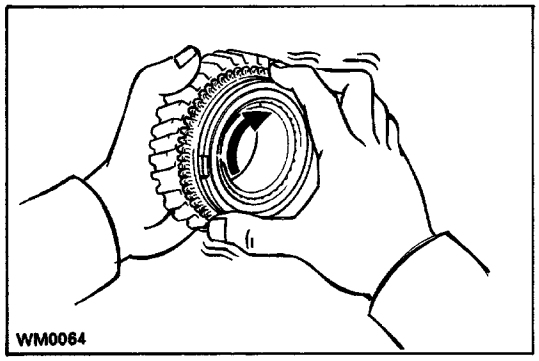
(b) Check the braking effect of the synchronizer ring.

Turn the synchronizer ring in one direction while pushing it to the gear cone and check that the ring is locked.

If the braking effect is insufficient, lightly rub the syn–chronizer ring and gear cone by applying a small amount of fine lapping compound.

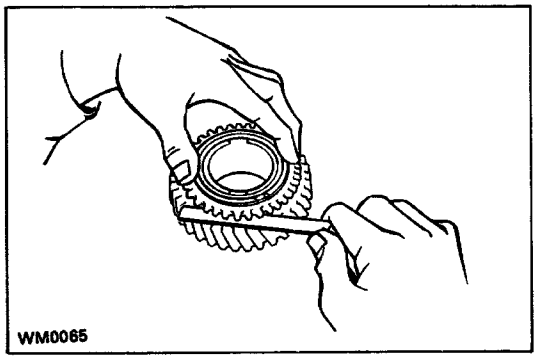
NOTICE: Wash off completely the fine lapping com–pound after rubbing.

Check again the braking action of the synchronizer ring.



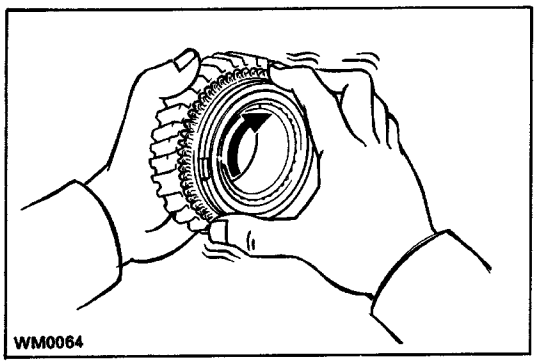
(c) Measure the clearance between the synchronizer ring back and gear spline end.

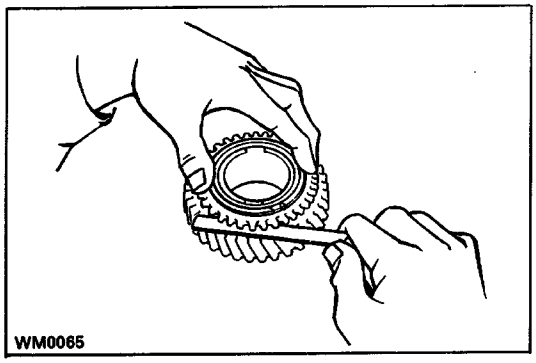
Maximum clearance: 0.6 mm (0.024 in.)

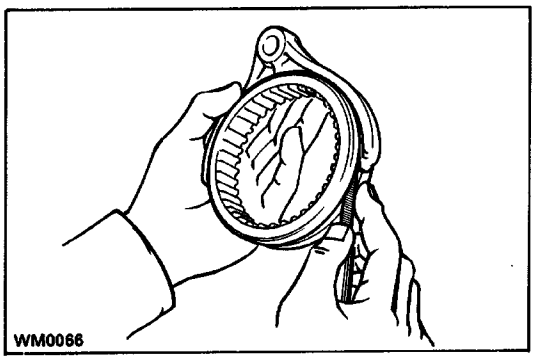


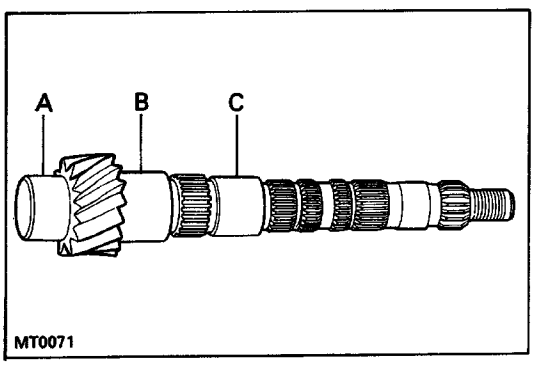
If the clearance is less than the limit, replace the syn–chronizer–ring and gear cone by applying a small amount of fine lapping compound.

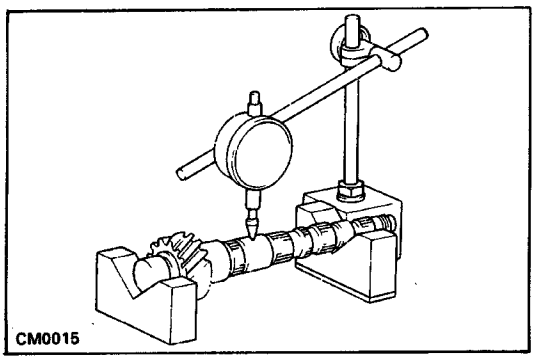
NOTICE: Wash off completely the fine lapping com–pound after rubbing.











2. INSPECT SYNCHRONIZER RING FOR SECOND GEAR

(a) Check for wear or damage.

(b) Check the braking effect of the synchronizer ring.

Turn the synchronizer ring in one direction while pushing it to the gear cone and check that the ring is locked.

If the braking effect is insufficient, lightly rub the syn–chronizer ring and gear cone by applying a small amount of fine lapping compound.

NOTICE: Wash off completely the fine lapping com–pound after rubbing.

Check again the braking effect of the synchronizer ring.

(c) Measure the clearance between the synchronizer ring back and gear spline end.

Maximum clearance: 0.6 mm (0.024 in.)

If the clearance is less than the limit, replace the syn–chronizer ring and gear cone by applying a small amount of fine compound.

NOTICE: Wash off completely the fine lapping com–pound after rubbing.

3. INSPECT CLEARANCE OF SHIFT FORKS AND HUB SLEEVES

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 maximum, replace the shift fork or hub sleeve.

4. INSPECT OUTPUT SHAFT

(a) Check the input shaft for wear or damage.

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

Maximum outer diameter: .

Part A

32.970 mm (1.2980 in.)

Part6

37.970 mm (1.4949 in.)

Part C

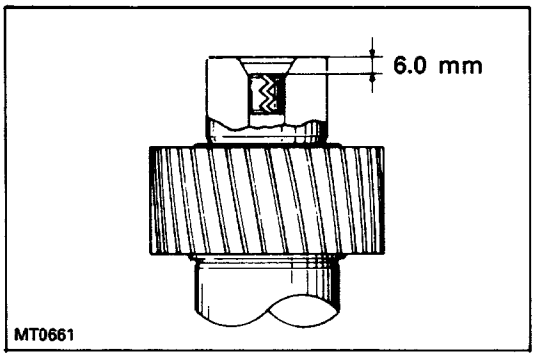
31.970 mm (1.2587 in.)

If the outer diameter exceeds the minimum, replace the output shaft.

(b) Using a dial indicator, check the shaft runout.

Maximum runout: 0.05 mm (0.0020 in.)

If the runout exceeds the maximum, replace the output shaft.



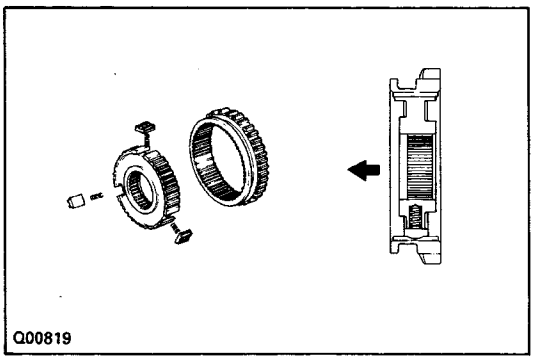
ASSEMBLY OF OUTPUT SHAFT ASSEMBLY

(See page MT–32)

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

1. IF OUTPUT SHAFT WAS REPLACED, DRIVE IN SLOTTED SPRING PIN

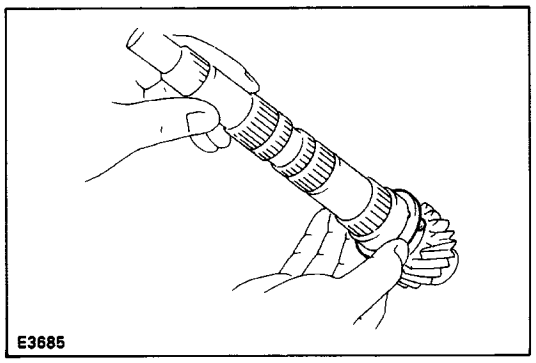
If the output shaft was replaced, drive the slotted spring pin in the output shaft to a depth of 6.0 (0.236 in.)



2. INSTALL NO. 1 CLUTCH HUB INTO HUB SLEEVE

(a) Install the three springs and shifting keys to the clutch hub.

(b) Install the hub sleeve to the clutch hub.

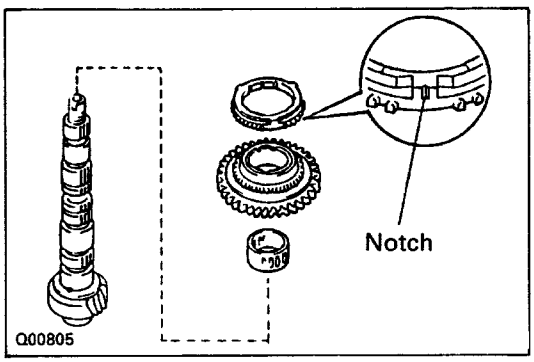


3. INSTALL BALL, THRUST WASHER, FIRST GEAR, NEEDLE ROLLER BEARING, SYNCHRONIZER RING AND NO. 1 HUB SLEEVE TO OUTPUT SHAFT

(a) Install the ball in the shaft.

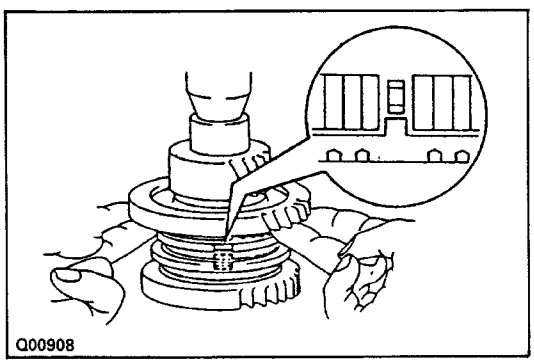
(b) Fit the thrust washer groove securely over the locking ball when installing the thrust on the shaft.

(c) Apply gear oil to the needle roller bearing.

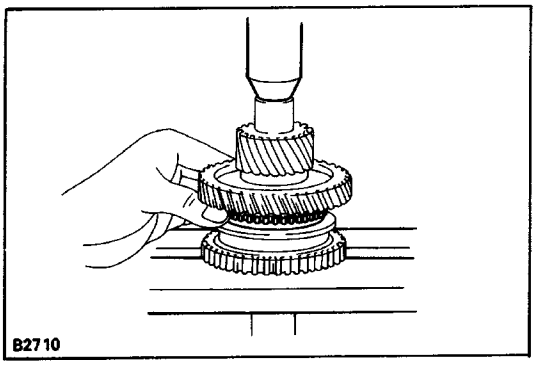


(d) Install the needle roller bearing, 1st gear and synchronizer ring.

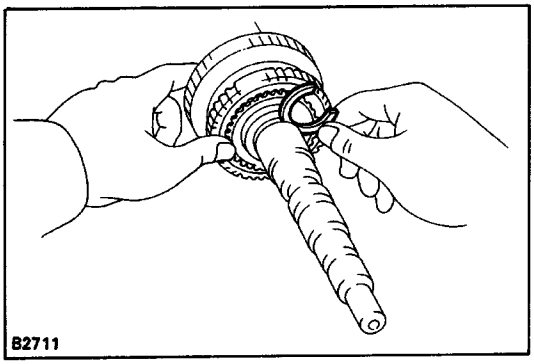
HINT: The synchronizer ring with the notch is for use only with the 1st gear.



(e) Place the synchronizer ring on the gear–and align the ring slots with the shifting keys.



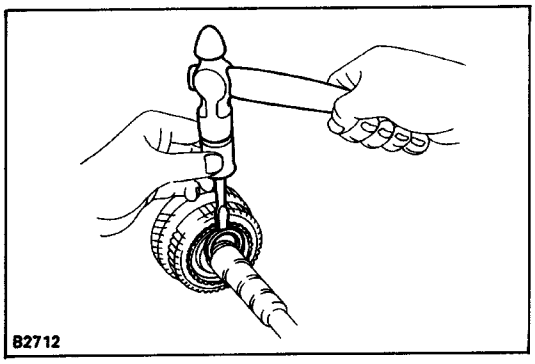
(f) Using a press, install the 1st gear and No. 1 hub sleeve.



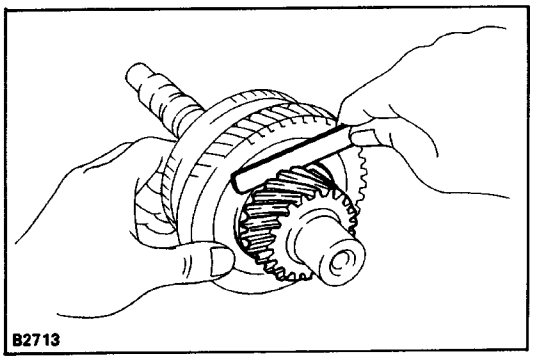
4. INSTALL SNAP RING

(a) Select a snap ring that will allow minimum axial play.

Mark	Thickness mm (in.)	Mark	Thickness mm (in.)
A	2.50 (0.0984)	A	2.68 (0.1055)
B	2.56 (0.1008)	B	2.74 (0.1079)
C	2.62 (0.1031)	C	2.80 (0.1102)



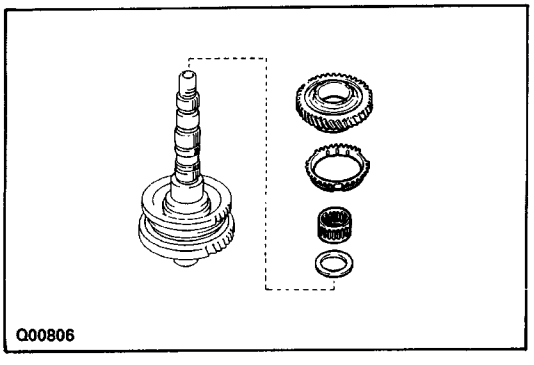
(b) Using a screwdriver and hammer, tap in the snap ring.



5. INSPECT FIRST GEAR THRUST CLEARANCE

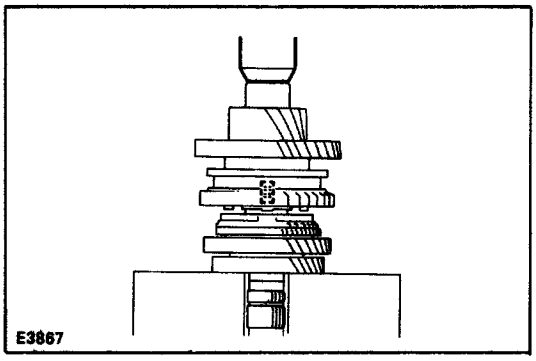
Using a feeler gauge, measure the 1st gear thrust clearance

Standard clearance: 0.10–0.40 mm
(0.0039–0.0157 In.)

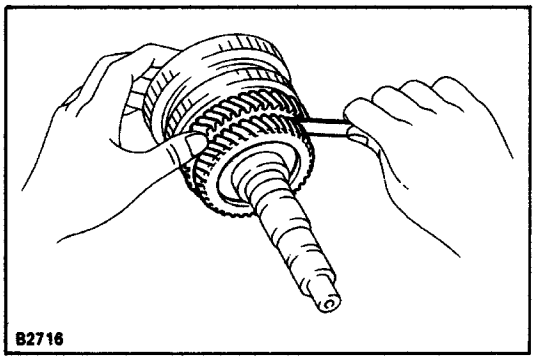


6. INSTALL SYNCHRONIZER RING, SPACER, NEEDLE ROLLER BEARING, SECOND GEAR AND THIRD DRIVEN GEAR

(a) Place the synchronizer ring on the gear and align the ring slots with the shifting keys.
(b) Install the spacer.
(c) Apply gear oil to the needle roller bearing.
(d) Install the 2nd gear.



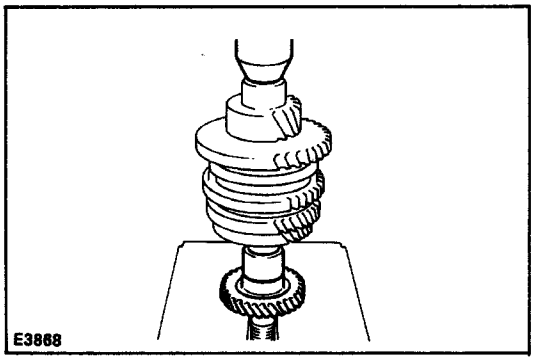
(e) Using a press, install the 3rd driven gear.



7. INSPECT SECOND GEAR THRUST CLEARANCE

Using a feeler gauge, measure the 2nd gear thrust clearance.

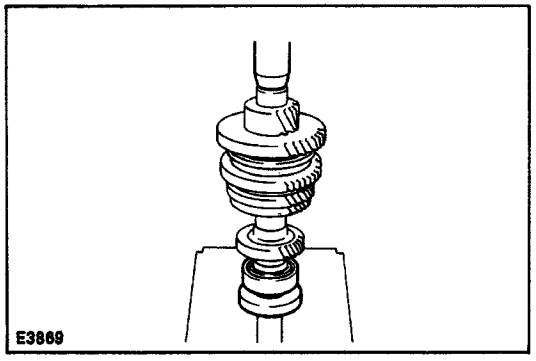
Standard clearance: 0.10–0.45 mm
(0.0039–0.0177 In.)



8. INSTALL OUTPUT GEAR SPACER AND FOURTH DRIVEN GEAR

(a) Install the output gear spacer.

(b) Using a press, install the 4th driven gear.



9. INSTALL REAR BALL BEARING

(a) Using SST and a press, install the rear bail bearing.
SST 09316–60010 (09316–00020)