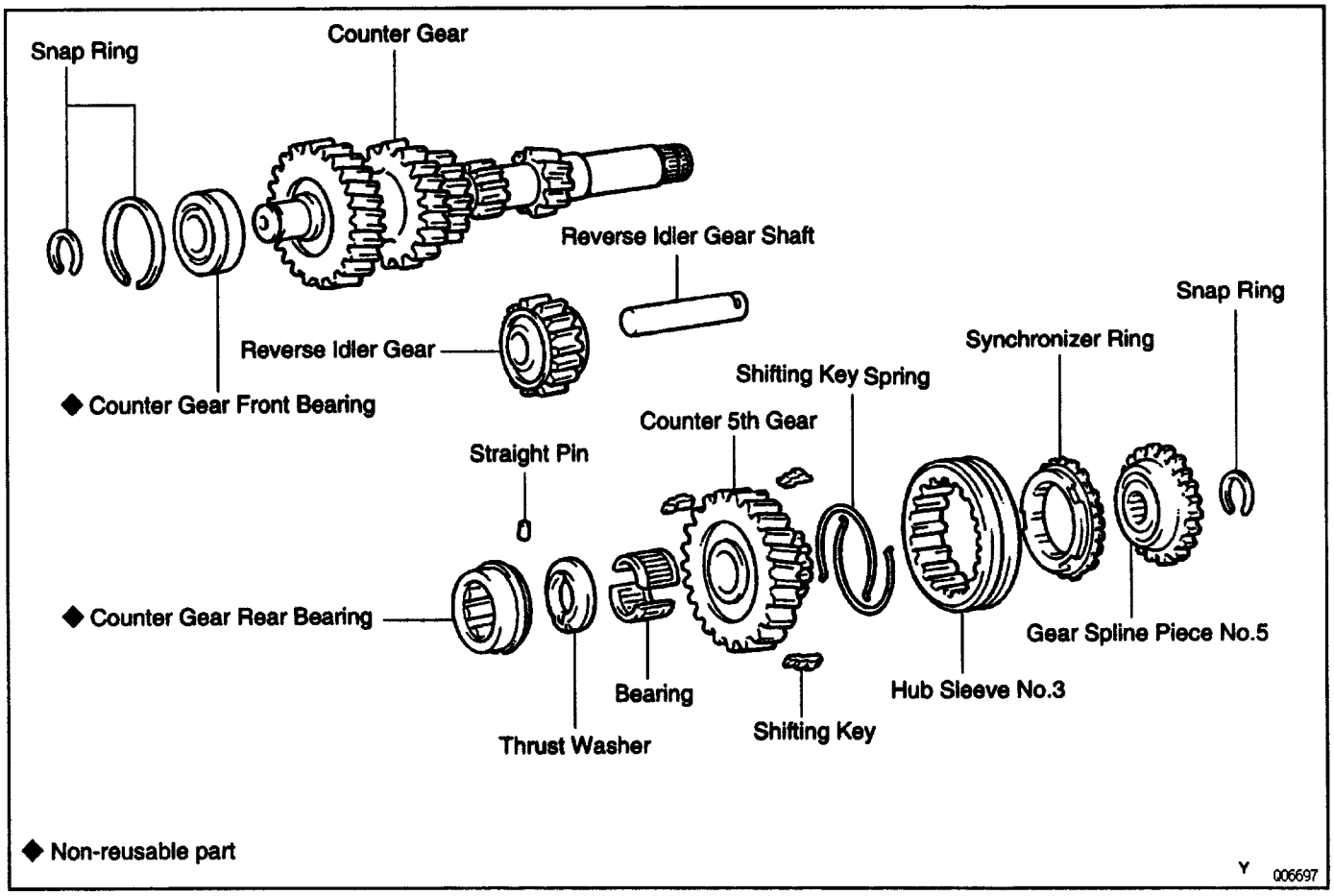
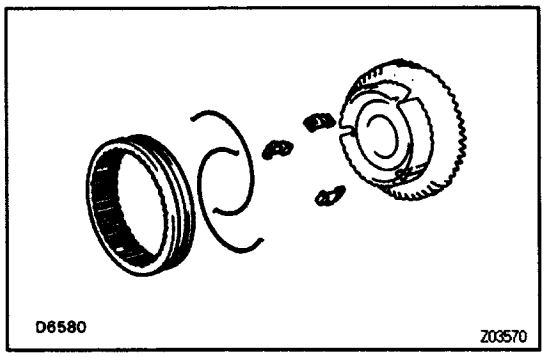
COUNTER GEAR AND REVERSE IDLER GEAR

COMPONENTS

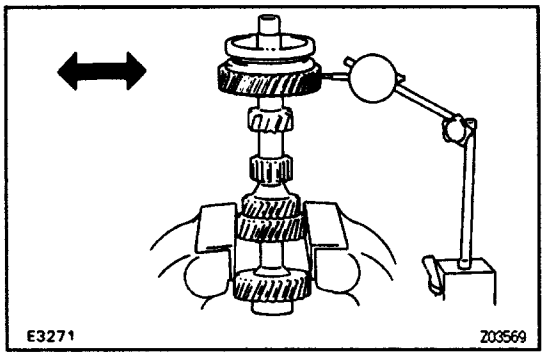




COUNTER GEAR COMPONENT PARTS DISASSEMBLY

REMOVE HUB SLEEVE NO.3. SHIFTING KEYS AND SPRINGS FROM COUNTER 5TH GEAR

Using a screwdriver, remove the 3 shifting keys and 2 springs from the counter 5th gear.



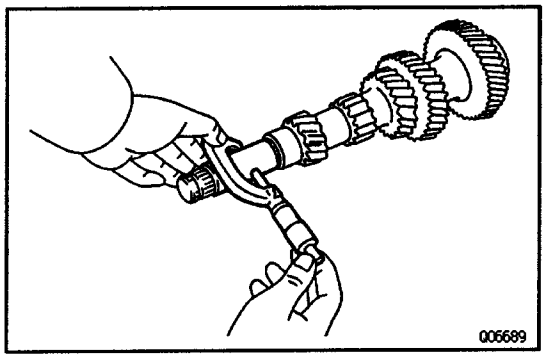
COUNTER GEAR AND REVERSE IDLER GEAR COMPONENT PARTS INSPECTION

1. INSPECT 5TH GEAR RADIAL CLEARANCE

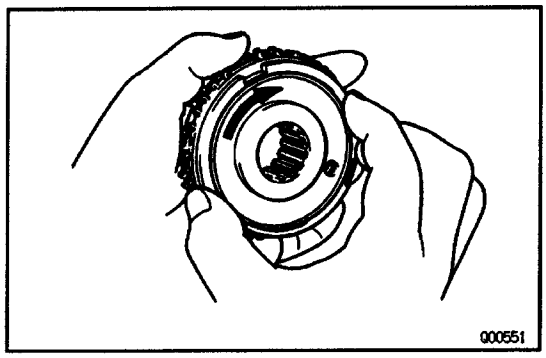
(a) Install the spacer, counter 5th gear and needle roller bearings.

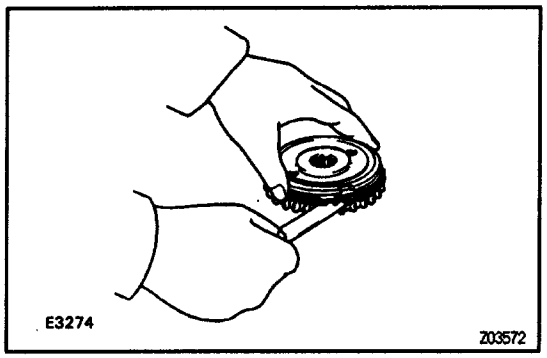
(b) Using a dial indicator, measure the counter 5th gear radial clearance.

Standard clearance:
0.015 – 0.088 mm (0.0006 – 0.0027 in.)
Maximum clearance:
0.160 mm (0.0063 in.)
If the clearance exceeds the maximum, replace the gear bearing or shaft.



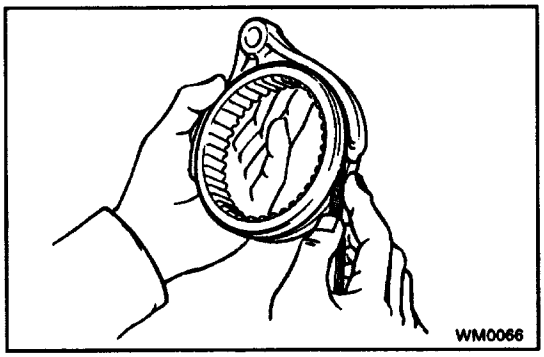
2. INSPECT COUNTER GEAR
Using a micrometer, measure the outer diameter of the counter gear journal.
Minimum diameter:
27.860 mm (1.0988 In.)
If the outer diameter is less than the minimum, replace the counter gear.





3. INSPECT SYNCHRONIZER RING
(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. Check that the ring locks.
If the braking effect is insufficient, apply a small amount of fine lapping compound between the synchronizer ring and gear cone.
Lightly rub the synchronizer ring and gear cone together.
NOTICE: Ensure the fine lapping compound is completely washed off after rubbing.
(c) Check again the braking effect of the synchronizer ring. If it does not lock, replace the synchronizer ring.
(d) Using a feeler gauge, measure the clearance between the synchronizer ring back and gear spline end.
Minimum clearance:
0.8 mm (0.031 in.)
HINT:
- When replacing either a synchronizer ring or gear, apply a small amount of fine lapping compound between the synchronizer ring and gear cone.
  Lightly rub the synchronizer ring and gear cone together.
- When replacing both the synchronizer ring and gear, there is no need to apply any compound or to rub them together.

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



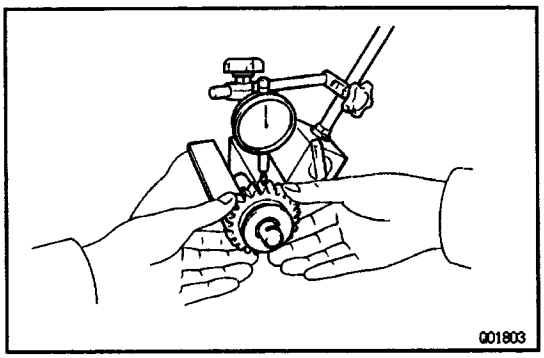
4. INSPECT SHIFT FORKS AND HUB SLEEVE CLEARANCE

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 maximum, replace the shift fork or hub sleeve.



6. INSPECT REVERSE IDLER GEAR RADIAL CLEARANCE

Using a dial indicator, measure the reverse idler gear radial clearance.

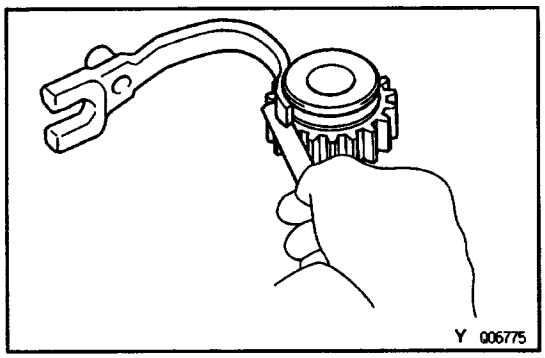
Standard clearance:

0.040–0.082 mm (0.0016–0–0032 in.)

Maximum clearance:

0.130 mm (0.0061 in.)

If the clearance exceeds the maximum, replace the reverse idler gear or reverse idler gear shaft.



6. INSPECT REVERSE IDLER GEAR AND SHIFT ARM CLEARANCE

Using a feeler gauge, measure the clearance between the reverse idler gear and shift arm.

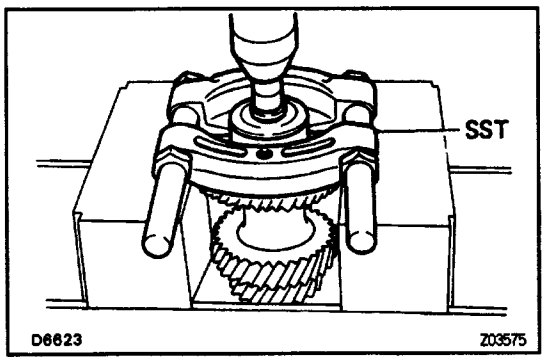
Standard clearance:

0.05–0.35 mm (0.0020–0.0138 in.)

Maximum clearance:

0.50 mm (0.0197 in.)

If the clearance exceeds the maximum, replace the shift arm or reverse idler gear.



BEARING REPLACEMENT

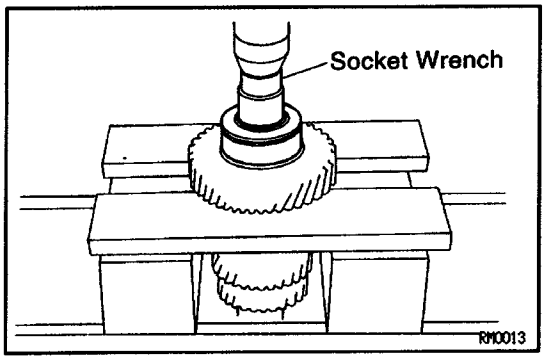
IF NECESSARY, REPLACE COUNTER GEAR FRONT BEARING

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

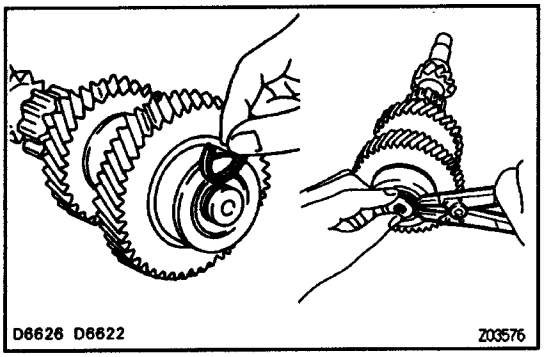
(b) Using SST and a press, remove the bearing.

SST 09850–00020

(c) Replace the side race.



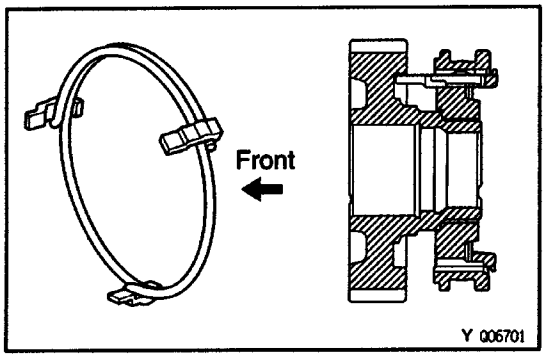
(d) Using a socket wrench and press, press in a new bearing and side race.



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

Mark	Thickness mm (in.)
A	2.00 – 2.05 (0.0787 – 0.0807)
B	2.05 – 2.10 (0.0807 – 0.0827)
C	2.10 – 2.15 (0.0827 – 0.0846)
D	2.15 – 2.20 (0.0846 – 0.0866)
E	2.20 – 2.25 (0.0866 – 0.0886)
F	2.25 – 3.00 (0.0886 – 0.1181)

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



COUNTER GEAR COMPONENT PARTS ASSEMBLY

INSTALL HUB SLEEVE NO.3, SHIFTING KEYS AND SPRINGS TO COUNTER 5TH GEAR

(a) Install the counter 5th gear and shifting keys to the hub sleeve.

(b) Install the shifting key springs under the shifting keys.

NOTICE: Position the key springs :o that their end gaps are not in line.