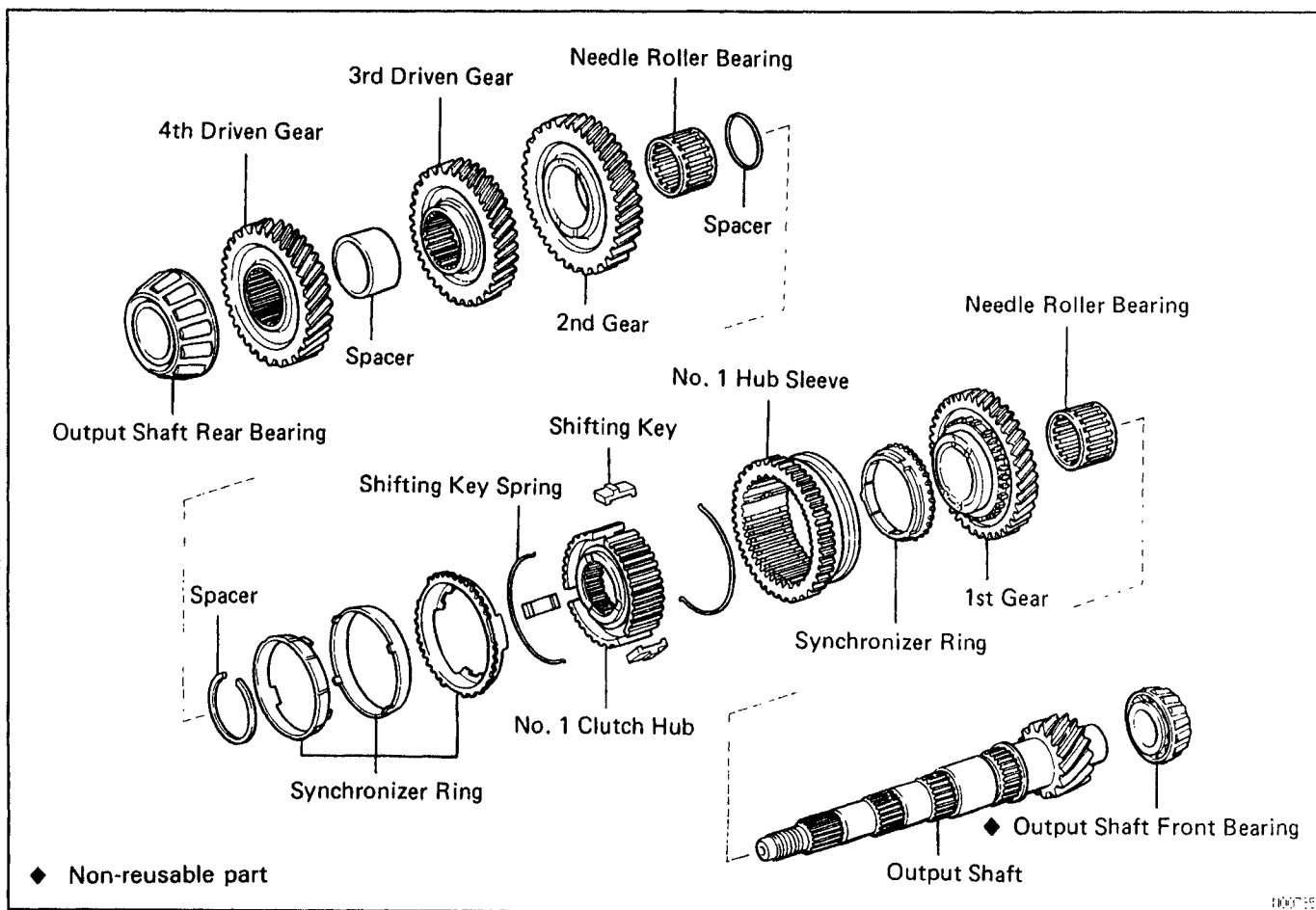
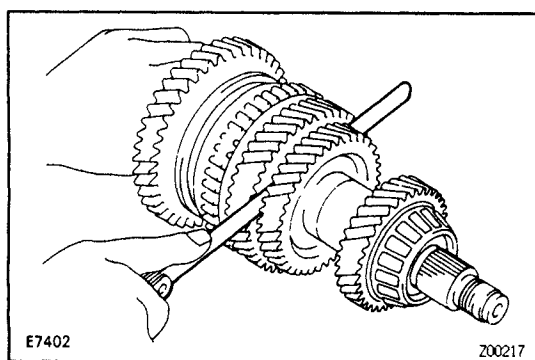


# OUTPUT SHAFT COMPONENTS

MX01A-01



1100735



## OUTPUT SHAFT DISASSEMBLY

MX01B-01

### 1. MEASURE FIRST AND SECOND GEAR THRUST CLEARANCE

Using a feeler gauge, measure the thrust clearance.

**Standard clearance:**

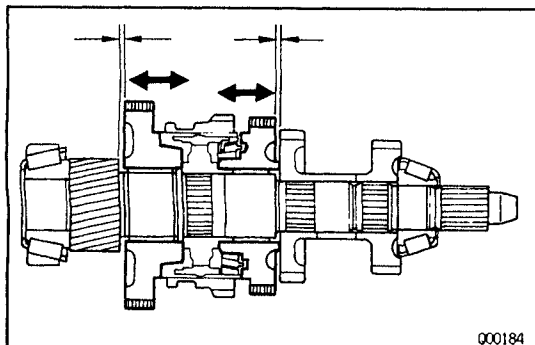
1st gear  
0.10–0.35 mm (0.0039–0.0138 in.)

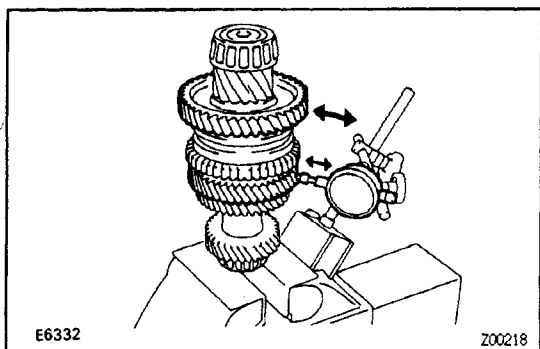
2nd gear  
0.10–0.45 mm (0.0039–0.0177 in.)

**Maximum clearance:**

1st gear  
0.40 mm (0.0157 in.)

2nd gear  
0.50 mm (0.0197 in.)





## 2. CHECK OIL CLEARANCE OF FIRST AND SECOND GEAR

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

**Standard clearance:**

**1 st gear**

0.009–0.051 mm (0.0004–0.0020 in.)

**2nd gear**

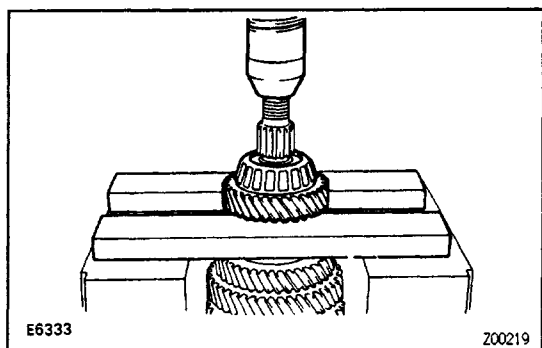
0.009–0.053 mm (0.0004–0.0021 in.)

**Maximum clearance:**

**1 st and 2nd gear**

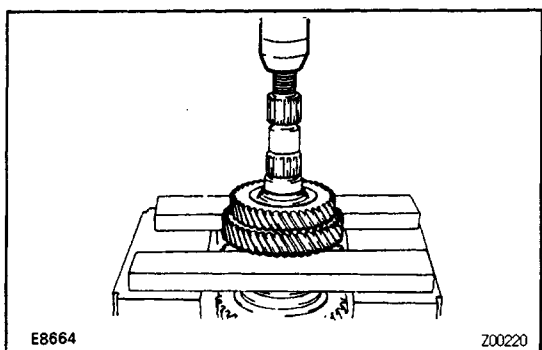
0.070 mm (0.0028 in.)

If the clearance exceeds the limit, replace the gear, needle roller bearing or shaft.



## 3. REMOVE OUTPUT SHAFT REAR BEARING, FOURTH DRIVEN GEAR AND SPACER

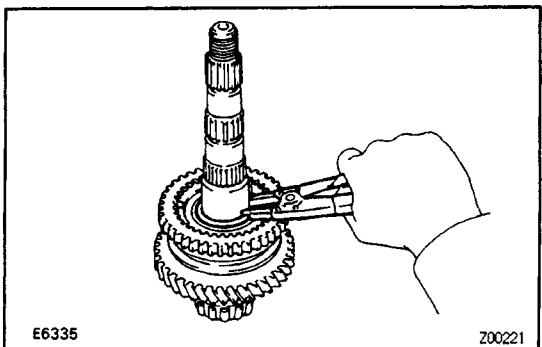
- (a) Using a press, remove the bearing and 4th driven gear.
- (b) Remove the spacer.



## 4. REMOVE THIRD DRIVEN GEAR AND SECOND GEAR

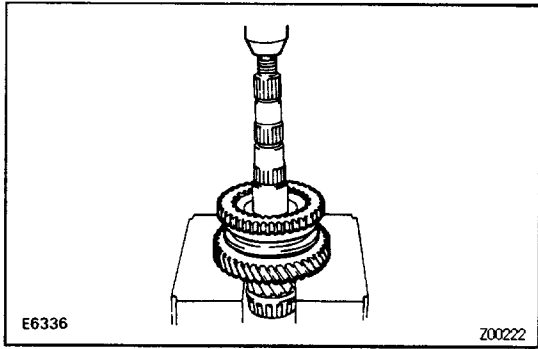
Using a press, remove the 3rd driven gear and 2nd gear.

## 5. REMOVE NEEDLE ROLLER BEARING SPACER AND SYNCHRONIZER RINGS



## 6. REMOVE SNAP RING

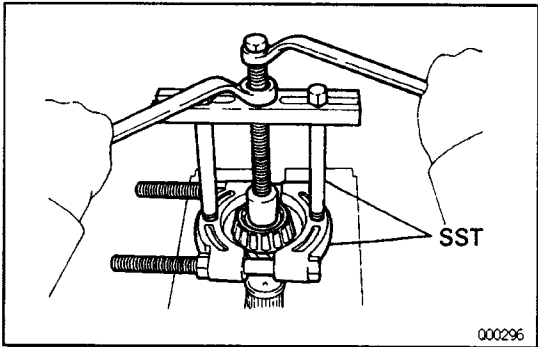
Using a snap ring expander, remove the snap ring.



### 7. REMOVE NO. 1 HUB SLEEVE ASSEMBLY AND FIRST GEAR

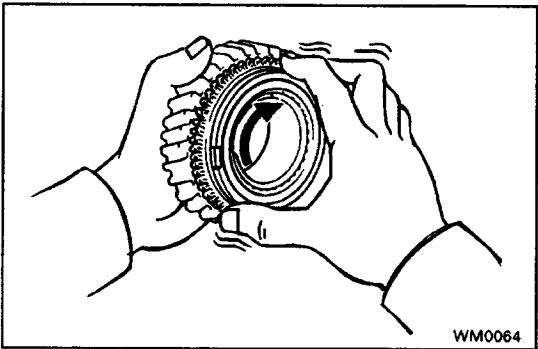
Using a press, remove the NO.1 hub sleeve and 1st gear.

### 8. REMOVE SYNCHRONIZER RING AND NEEDLE ROLLER BEARINGS



### 9. REMOVE OUTPUT SHAFT FRONT BEARING

Using SST, remove the output shaft front bearing.  
SST 09950-00020, 09950-00030



## OUTPUT SHAFT COMPONENT PARTS INSPECTION MX01C-01

### 1. INSPECT SYNCHRONIZER RING FOR FIRST GEAR

- Check for wear or damage.
- 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 synchronizer ring and gear cone by applying a small amount of fine lapping compound.

#### NOTICE:

- Wash off completely the fine lapping compound after rubbing.
- Check again the braking effect of the synchronizer ring.

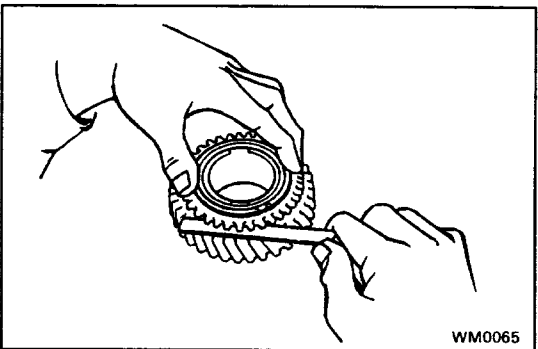
- Measure the clearance between the synchronizer ring back and gear spline end.

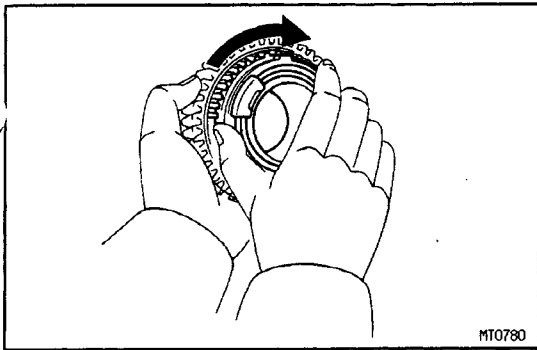
Minimum clearance:

0.6 mm (0.024 in.)

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

**NOTICE:** Wash off completely the fine lapping compound after rubbing.

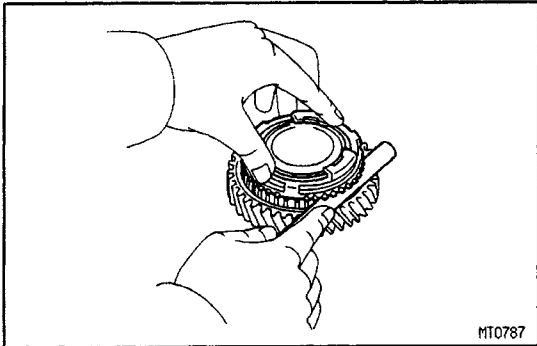




MT0780

## 2. INSPECT SYNCHRONIZER RING FOR SECOND GEAR

- (a) Check for wear or damage.
- (b) Check the braking effect of the synchronizer direction while pushing it to the gear cone and check that the ring is locked.  
If the braking effect is insufficient, replace the synchronizer ring.

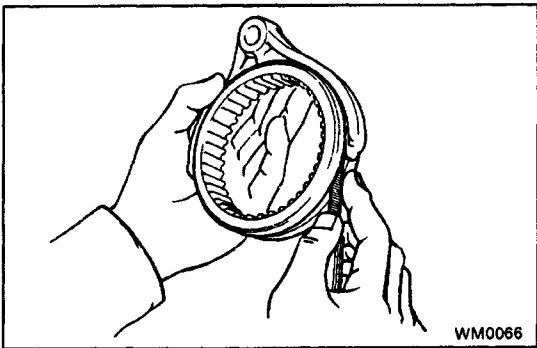


MT0787

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

**Minimum clearance:**  
**0.7 mm (0.028 in.)**

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



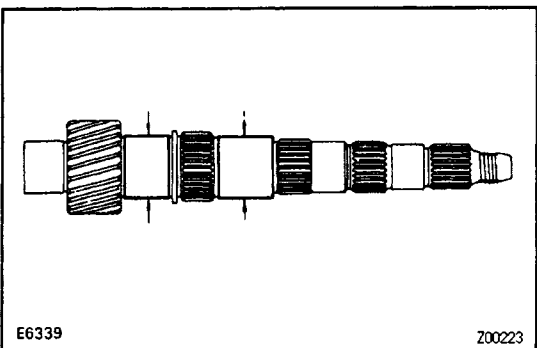
WM0066

## 3. MEASURE CLEARANCE OF NO.1 SHIFT FORK AND: HUB SLEEVE

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.



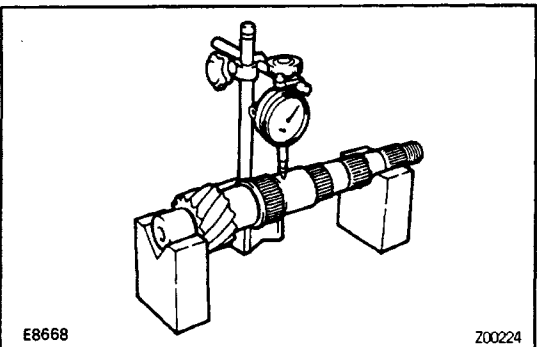
E6339

Z00223

## 4. INSPECT OUTPUT SHAFT

- (a) Check the output shaft for wear or damage.
- (b) Using a micrometer, measure the outer diameter of the output shaft journal surface.

**Minimum outer diameter:**  
**38.950 mm (1.5335 in.)**

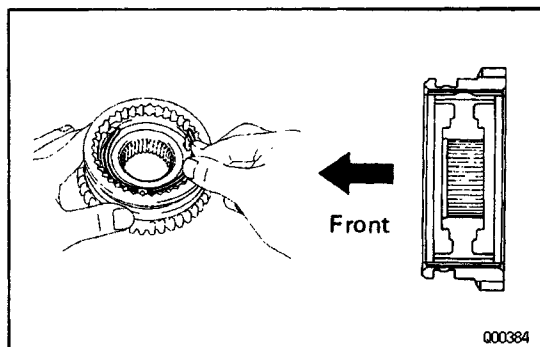


E8668

Z00224

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

**Maximum runout:**  
**0.06 mm (0.0024 in.)**



## OUTPUT SHAFT ASSEMBLY

(See page [MX2-44](#))

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

### 1. INSPECT NO.1 CLUTCH HUB INTO HUB SLEEVE

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

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

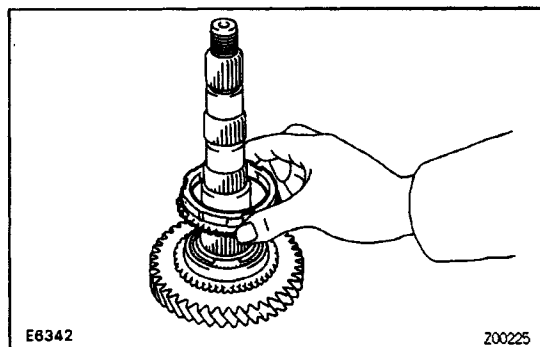
**NOTICE:** Install the key springs positioned so that their end not in line.

### 2. INSTALL NEEDLE ROLLER BEARING, FIRST GEAR, SYNCHRONIZER RING AND NO.1 HUB SLEEVE TO OUTPUT SHAFT

(a) Apply MP grease to the needle roller bearings.

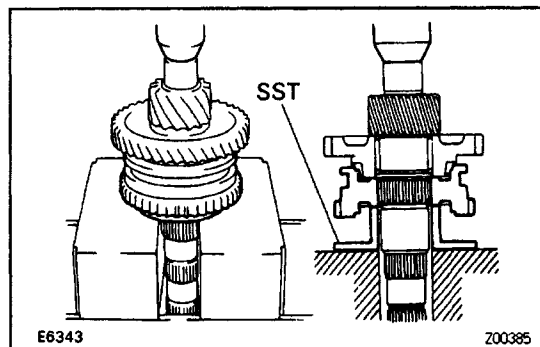
(b) Install the 1st gear.

(c) Place the synchronizer ring (for 1st gear) on the gear and align the ring slots with the shifting keys.



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

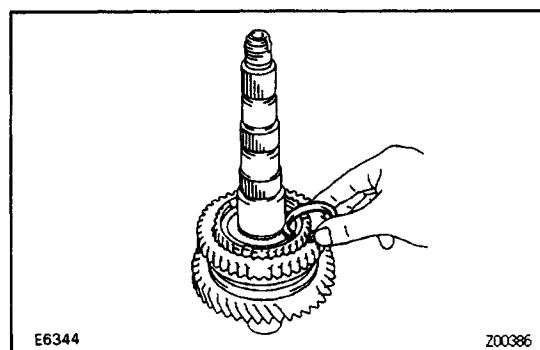
SST 09316-60010 (09316-00040)



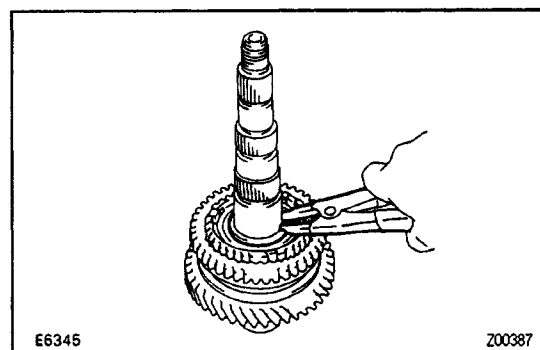
### 3. INSTALL SNAP RING

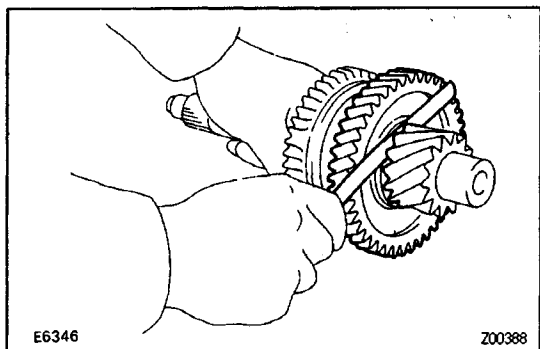
(a) Select a snap ring that will allow minimum axial play.

Mark	Thickness mm (in.)	Mark	Thickness mm (in.)
A	2.80 (0.1102)	E	3.00 (0.1181)
B	2.85 (0.1122)	F	3.05 (0.1201)
C	2.90 (0.1142)	G	3.10 (0.1220)
D	2.95 (0.1161)		



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



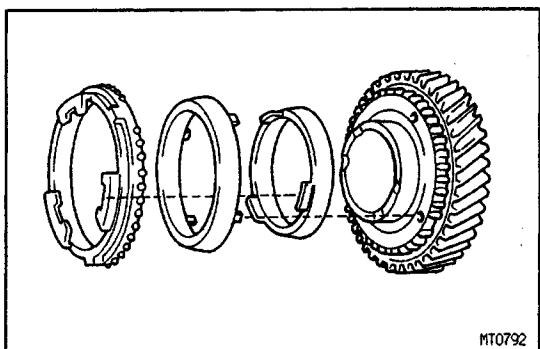


#### 4. MEASURE FIRST GEAR THRUST CLEARANCE

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

**Standard clearance:**

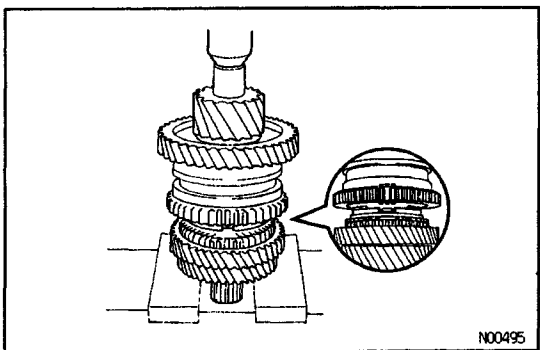
**0.10–0.35 mm (0.0039–0.0138 in.)**



#### 5. INSTALL SPACER, NEEDLE ROLLER BEARING, SYNCHRONIZER RINGS, SECOND GEAR AND THIRD DRIVEN GEAR

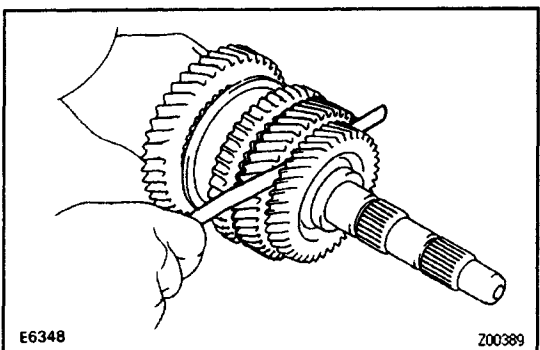
- Install the spacer.
- Apply MP grease to the needle roller bearing.
- Place the synchronizer rings (for 2nd gear) on the gear.

**NOTICE:** Do not install the synchronizer ring for 1st gear.



- Install the 2nd gear.
- Using a press, install the 3rd driven gear.

**NOTICE:** Align the clutch hub grooves with the projections on the synchronizer ring.

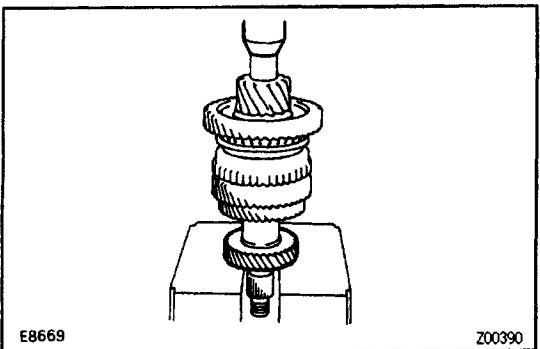


#### 6. MEASURE SECOND GEAR THRUST CLEARANCE

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

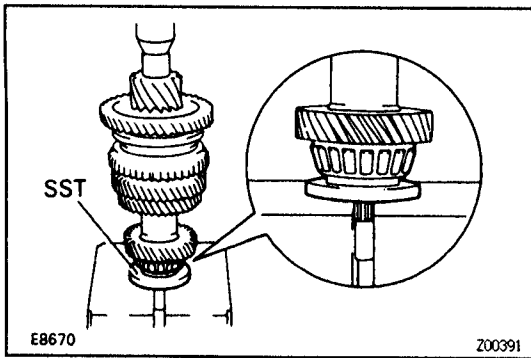
**Standard clearance:**

**0.10–0.45 mm (0.0039–0.0177 in.)**



#### 7. INSTALL SPACER AND FOURTH DRIVEN GEAR

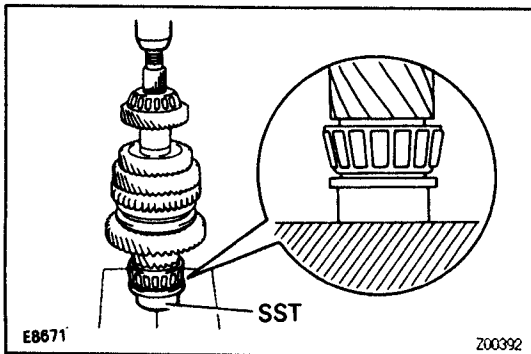
- Install the spacer.
- Using a press, install the 4th driven gear.



### 8. INSTALL OUTPUT SHAFT REAR BEARING

Using SST and a press, install the bearing.

SST 09506-30012



### 9. INSTALL OUTPUT SHAFT FRONT BEARING

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

SST 09316-60010 (09316-00070)