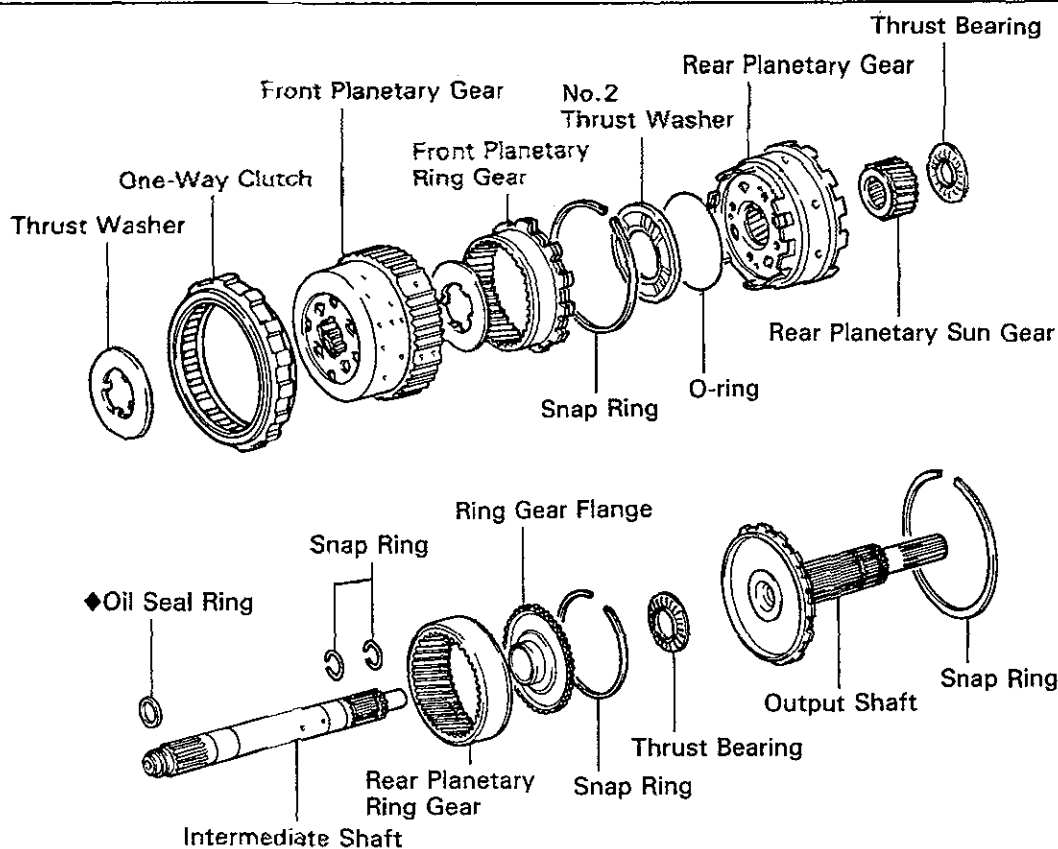


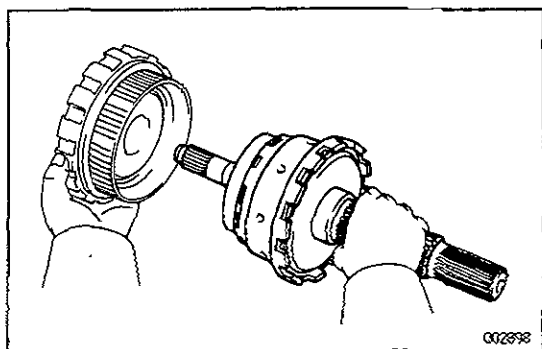
# FRONT AND REAR PLANETARY GEAR UNIT COMPONENTS

AT06E-01



◆ Non-reusable part

002992

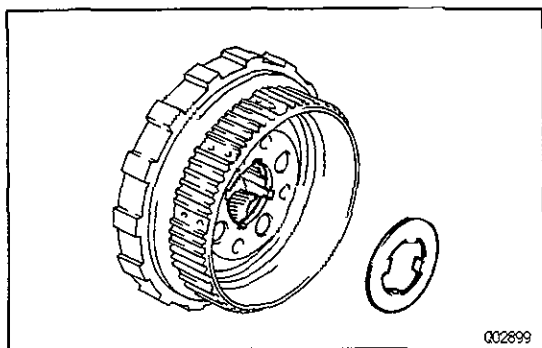


## FRONT AND REAR PLANETARY GEAR UNIT DISASSEMBLY

AT06F-01

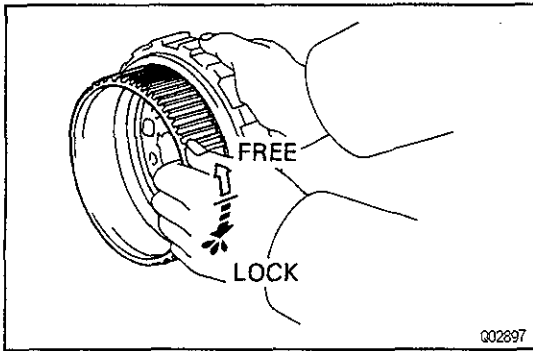
### 1. REMOVE REAR PLANETARY GEAR AND OUTPUT SHAFT ASSEMBLY

Remove the rear planetary gear and output shaft assembly from the front planetary gear.



### 2. REMOVE NO.1 REAR THRUST WASHER

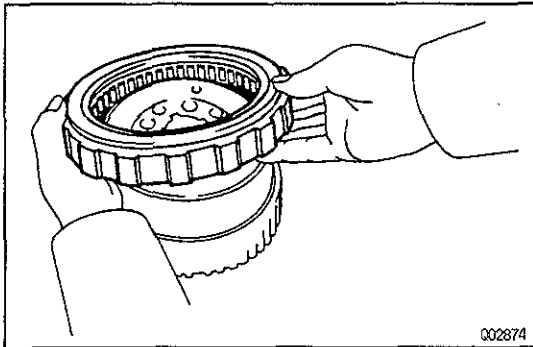
Remove the thrust washer from the rear side of the front planetary gear.



**3. CHECK OPERATION OF ONE-WAY CLUTCH**

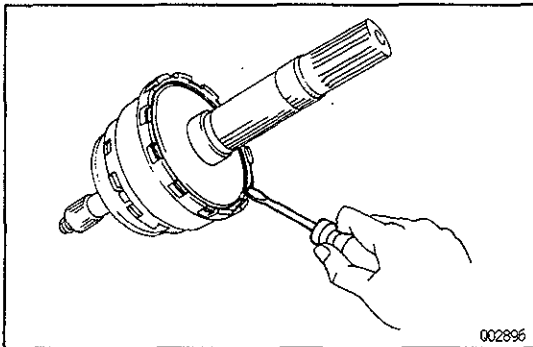
Hold the one-way clutch outer race and turn the front planetary gear. The front planetary gear should turn freely counterclockwise and should lock clockwise.

If operation is not as specified, replace the one-way clutch.



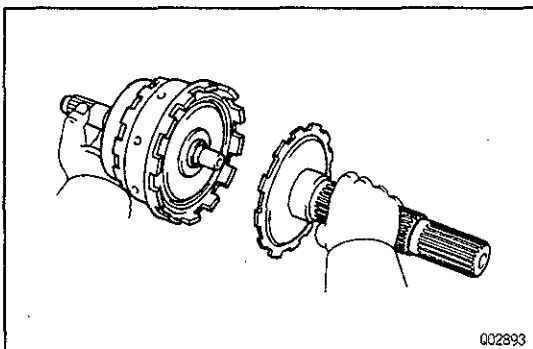
**4. REMOVE ONE-WAY CLUTCH**

Remove the one-way clutch from the front planetary gear.

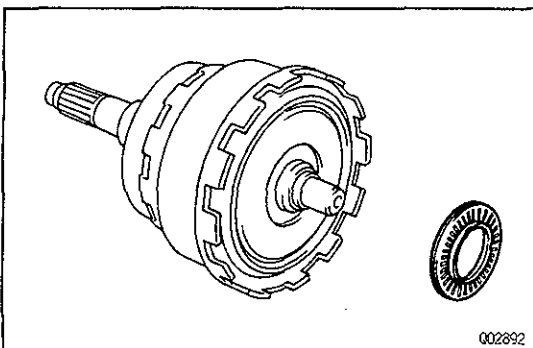


**5. REMOVE OUTPUT SHAFT**

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

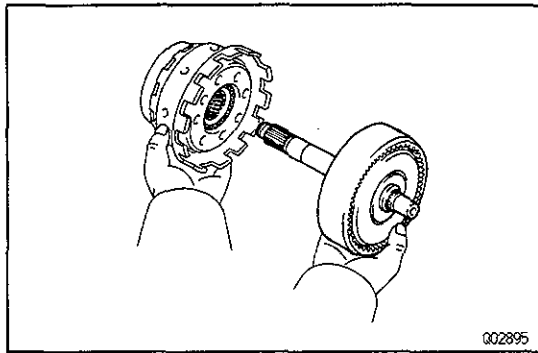


(b) Remove the output shaft from the rear planetary gear.

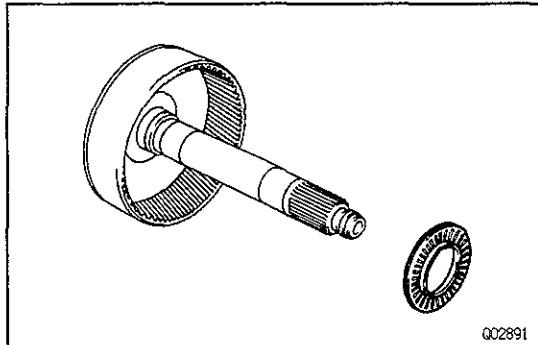


(c) Remove the thrust bearing and race from the rear side of the ring gear flange.

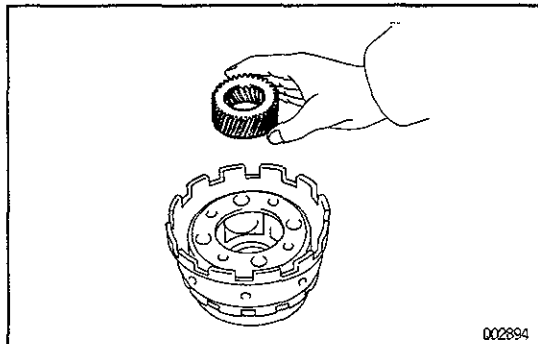
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**6. REMOVE REAR PLANETARY RING GEAR AND INTERMEDIATE SHAFT ASSEMBLY**

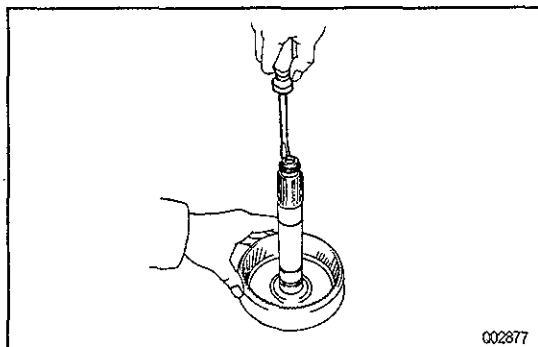
- (a) Remove the ring gear and intermediate shaft assembly from the rear planetary gear.



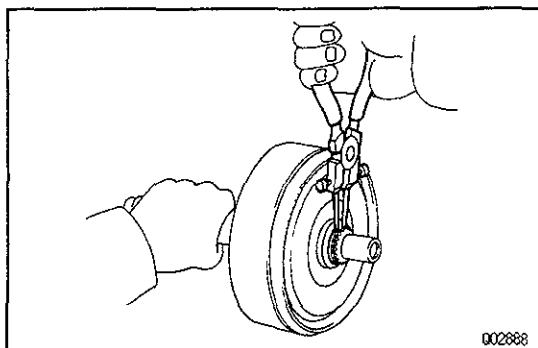
- (b) Remove the thrust bearing from the front side of the ring gear flange.

**7. REMOVE REAR PLANETARY SUN GEAR**

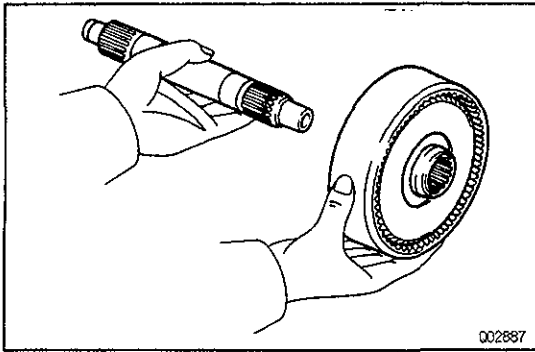
Remove the sun gear from the rear planetary gear.

**8. REMOVE OIL SEAL RING**

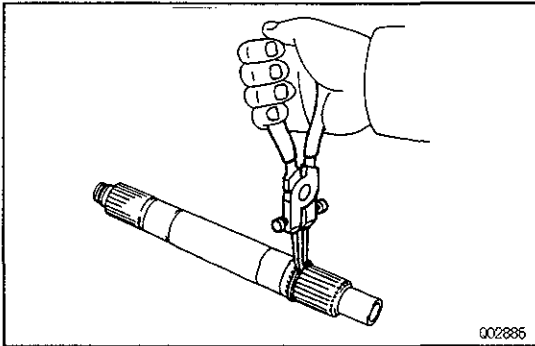
Using a small screwdriver, pry out the oil seal ring.

**9. REMOVE REAR PLANETARY RING GEAR AND FLANGE ASSEMBLY**

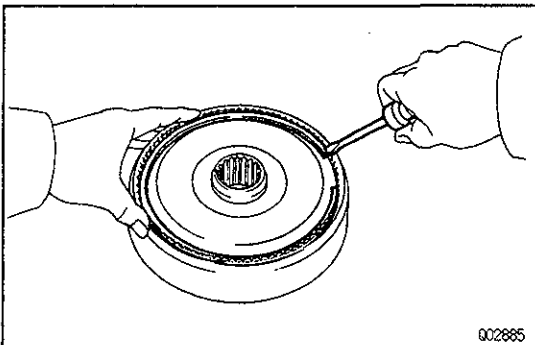
- (a) Using snap ring pliers, remove the snap ring from the rear side of the intermediate shaft.



- (b) Remove the ring gear and flange assembly from the intermediate shaft.

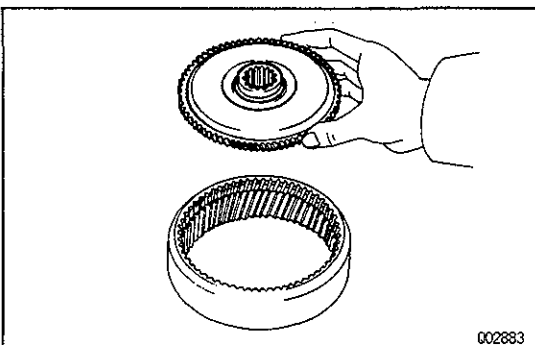


- (c) Using snap ring pliers, remove the snap ring from the front side of the intermediate shaft.

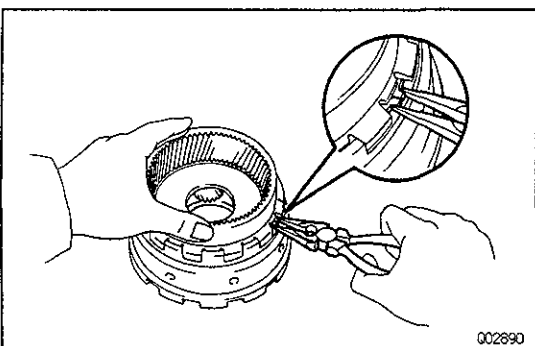


#### **10. REMOVE REAR PLANETARY RING GEAR FLANGE**

- (a) Using a small screwdriver, remove the snap ring.

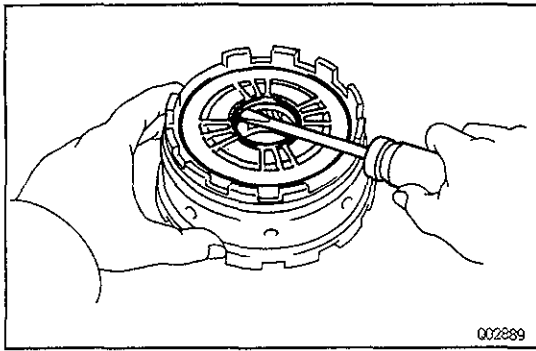


- (d) Remove the ring gear flange from the rear planetary ring gear.



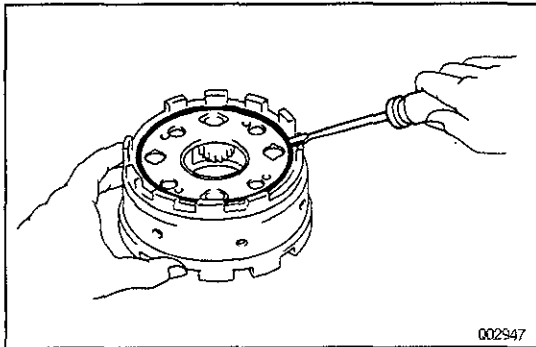
#### **11. REMOVE FRONT PLANETARY RING GEAR**

Using needle nose pliers, pry out the ring gear while compressing the snap ring.

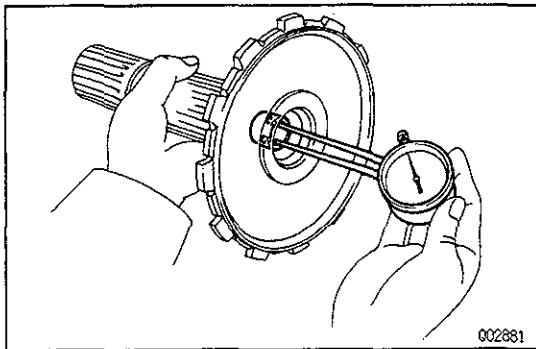
**12. REMOVE NO.2 THRUST WASHER**

Remove the thrust washer from the rear planetary gear.

**NOTICE:** Do not damage the No.2 thrust washer.

**13. REMOVE O-RING**

Using a small screwdriver, remove the o-ring from the rear planetary gear.



## FRONT AND REAR PLANETARY GEAR UNIT INSPECTION

AT08G-01

**1. INSPECT BUSHING OF OUTPUT SHAFT**

Using a dial indicator, measure the inside diameter.

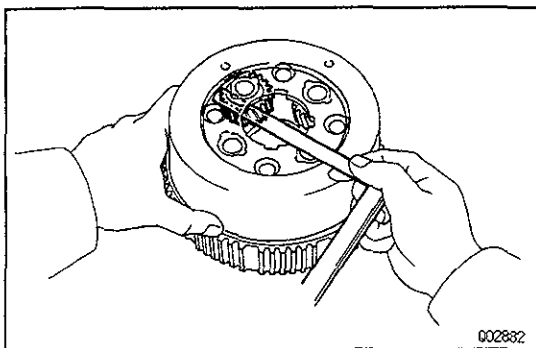
**Standard inside diameter:**

17.000–17.018 mm (0.6693–0.6700 in.)

**Maximum inside diameter:**

17.07 mm (0.6720 in.)

If the inside diameter is greater than maximum, replace the output shaft.

**2. INSPECT PLANETARY PINION GEAR THRUST CLEARANCE**

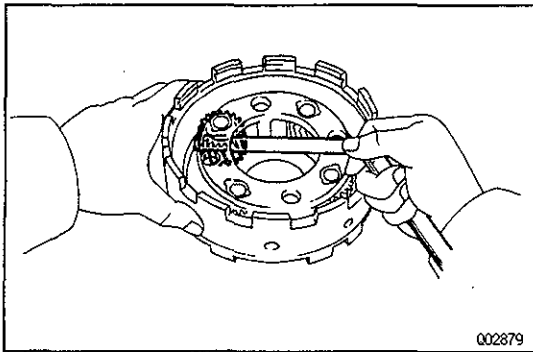
Using a feeler gauge, measure the thrust clearance between the pinions and carrier.

**Standard clearance:**

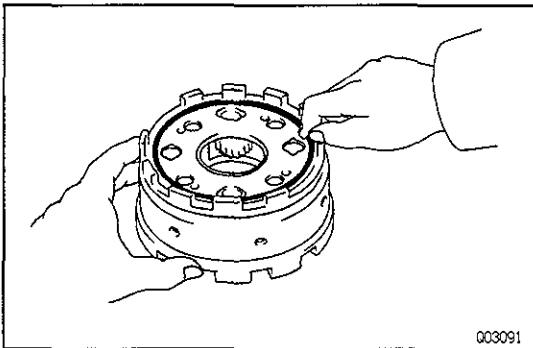
0.20–0.50 mm (0.0079–0.0197 in.)

**Maximum clearance:**

0.75 mm (0.0295 in.)



If the thrust clearance is greater than maximum, replace the planetary gear.

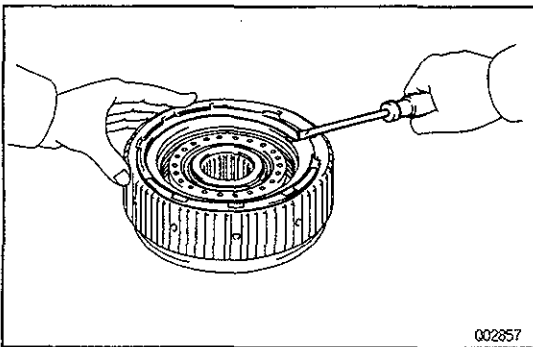


## FRONT AND REAR PLANETARY GEAR UNIT ASSEMBLY

AT08H-01

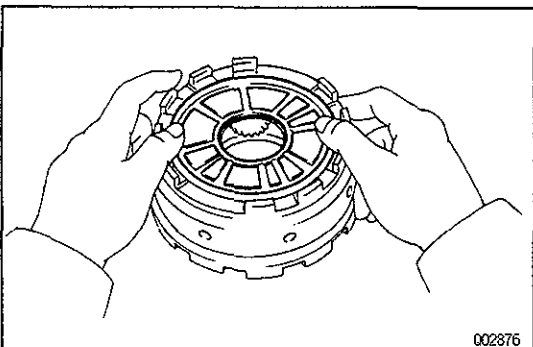
### 1. INSTALL O—RING

Coat a new O—ring with ATF, and install it to the rear planetary gear.

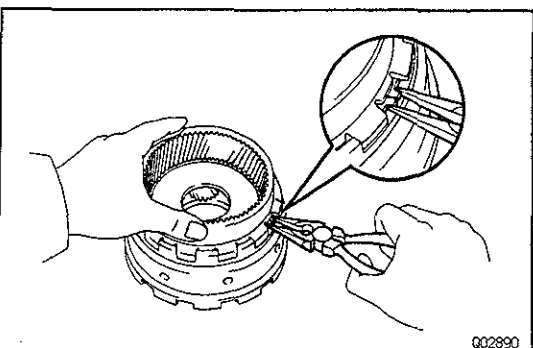


### 2. INSTALL NO.2 THRUST WASHER

Coat the thrust washer with petroleum jelly, and install it onto the rear planetary gear.



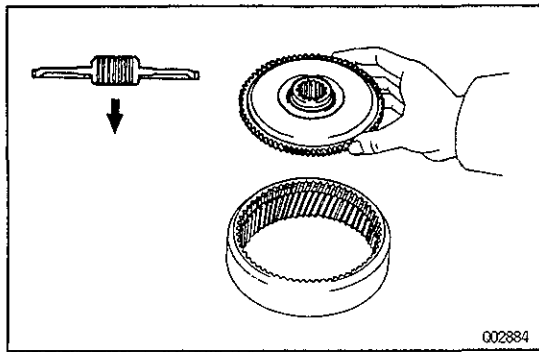
**HINT:** Securely fit the lips of the thrust washer into the holes of the rear planetary gear.



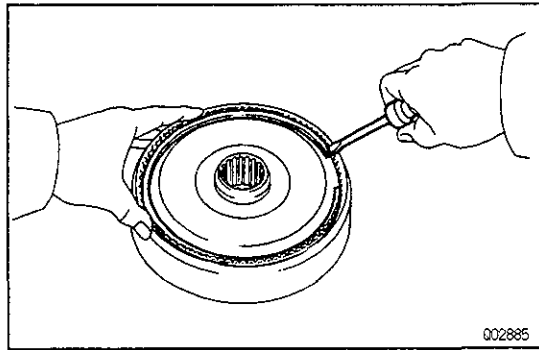
### 3. INSTALL FRONT PLANETARY RING GEAR

- Align the snap ring end with the wide cutout portion of the rear planetary gear.
- Using needle nose pliers, compress the snap ring and then install the ring gear.
- Check that the snap ring is installed into the groove of the rear planetary gear.

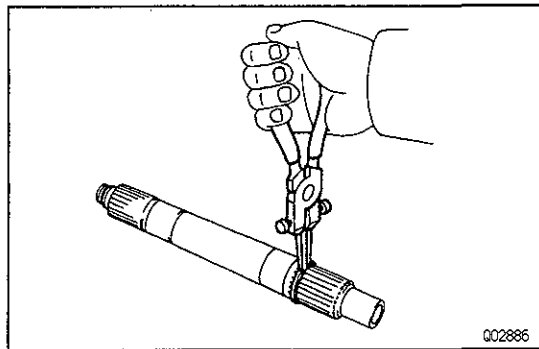
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- 4. INSTALL REAR PLANETARY RING GEAR FLANGE**
- (a) Install the ring gear flange to the rear planetary ring gear.

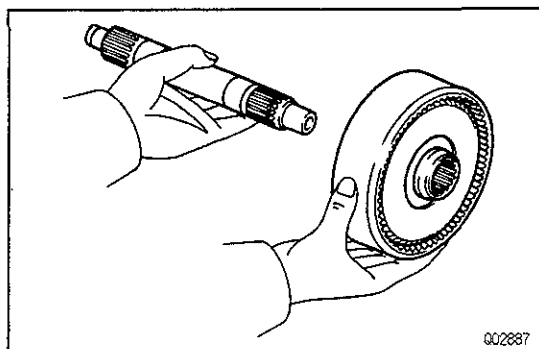


- (b) Using a small screwdriver, install the snap ring.

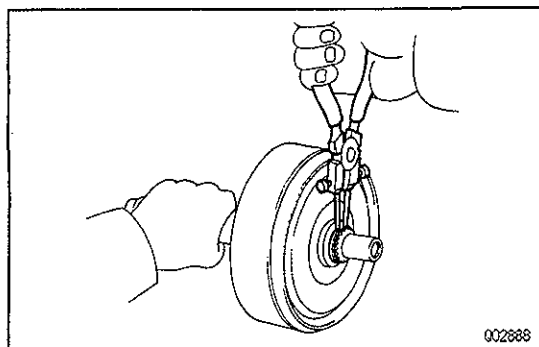


**5. INSTALL REAR PLANETARY RING GEAR AND FLANGE ASSEMBLY**

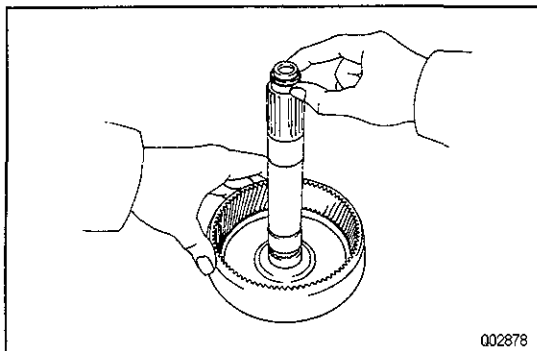
- (a) Using snap ring pliers, install the snap ring on the front side of the intermediate shaft.



- (b) Install the ring gear and flange assembly.

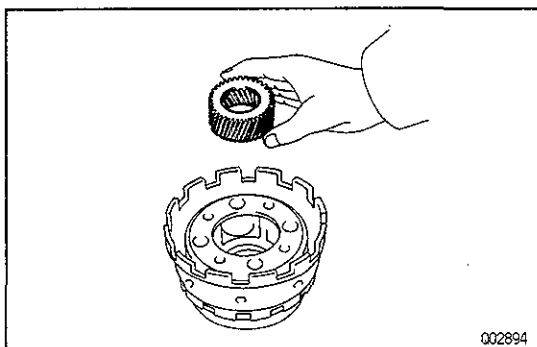


- (c) Using snap ring pliers, install the snap ring on the rear side of the intermediate shaft.



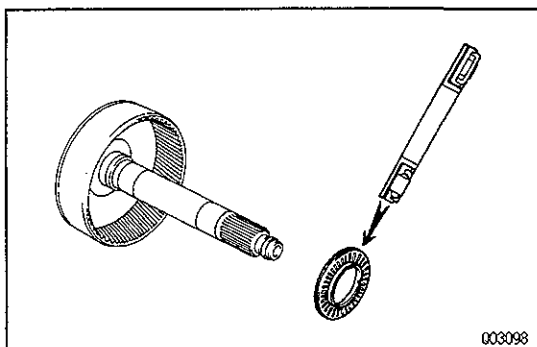
## 6. INSTALL OIL SEAL RING

Coat a new oil seal ring with ATF, and install it on the intermediate shaft.



## 7. INSTALL REAR PLANETARY SUN GEAR

Install the sun gear to the rear planetary gear.



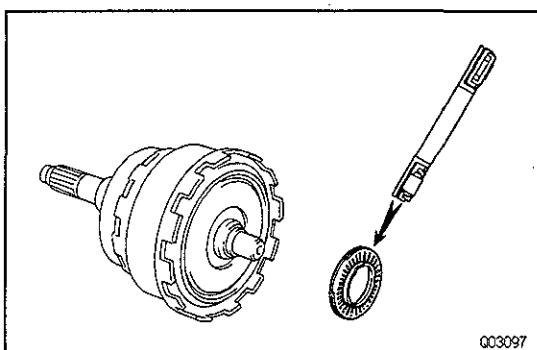
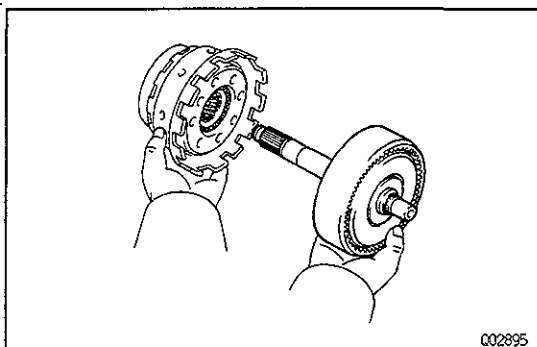
## 8. INSTALL REAR PLANETARY RING GEAR AND INTERMEDIATE SHAFT ASSEMBLY

- Coat the thrust bearing with petroleum jelly.
- Install the thrust bearing onto the front side of the ring gear flange.

HINT: Race and bearing diameter

Diameter	mm (in.)	Inside	Outside
Bearing		32.8 (1.291)	52.0 (2.047)

- Install the ring gear and intermediate shaft assembly to the rear planetary gear.



## 9. INSTALL OUTPUT SHAFT

- Coat the race and thrust bearing with petroleum jelly.
- Install the thrust bearing onto the rear side of the ring gear flange.

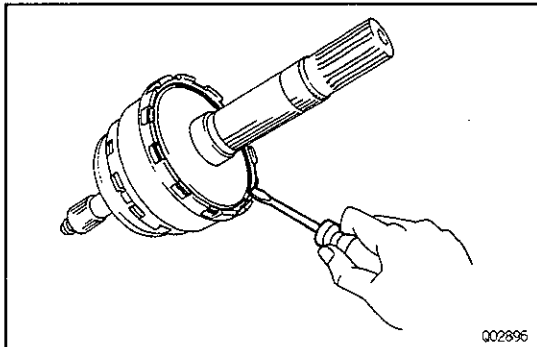
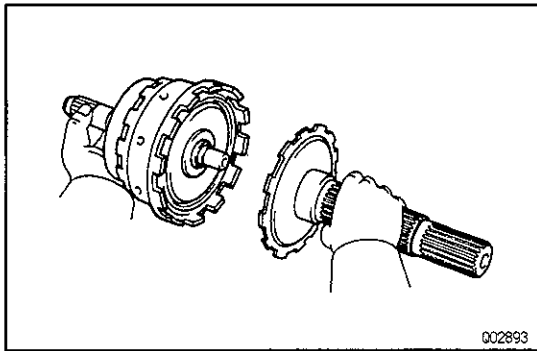
HINT: Race and bearing diameter

Thickness	mm (in.)	Inside	Outside
Bearing		32.8 (1.291)	52.0 (2.047)

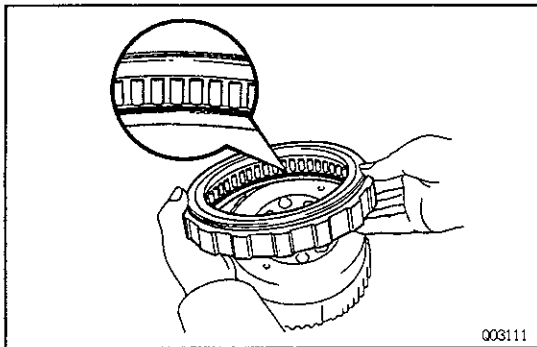
- Install the output shaft to the rear planetary gear.



AT



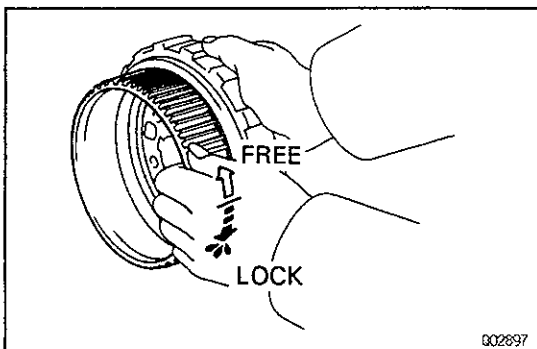
- (d) Using a screwdriver, install the snap ring.  
 HINT: Be sure the end gap of the snap ring is not aligned with the cutout portion of the rear planetary gear.



#### 10. INSTALL ONE-WAY CLUTCH

- (a) Position the one-way clutch on the front planetary gear, facing the flange side of the one-way clutch downward.  
 (b) Install the one-way clutch outer race and turn the front planetary gear. The front planetary gear should turn freely counterclockwise and should lock clockwise.

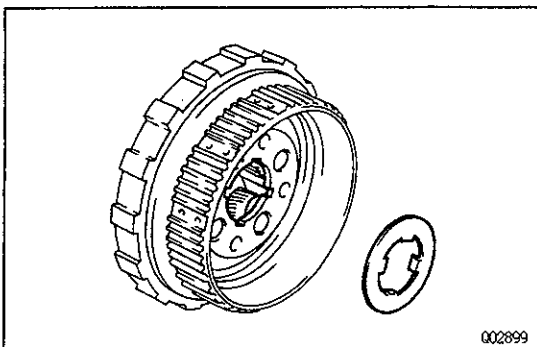
If operation of not as specified, replace the one-way clutch.



#### 11. CHECK OPERATION OF ONE-WAY CLUTCH

Hold the one-way clutch outer race and turn the front planetary gear. The front planetary gear should turn freely counterclockwise and should lock clockwise.

If operation is not as specified, replace the one-way clutch.



#### 12. INSTALL NO.1 REAR THRUST WASHER

Coat the thrust washer with petroleum jelly, and install it onto the rear side of the front planetary gear. Securely fit the claws of the thrust washer into the grooves of the front planetary gear.