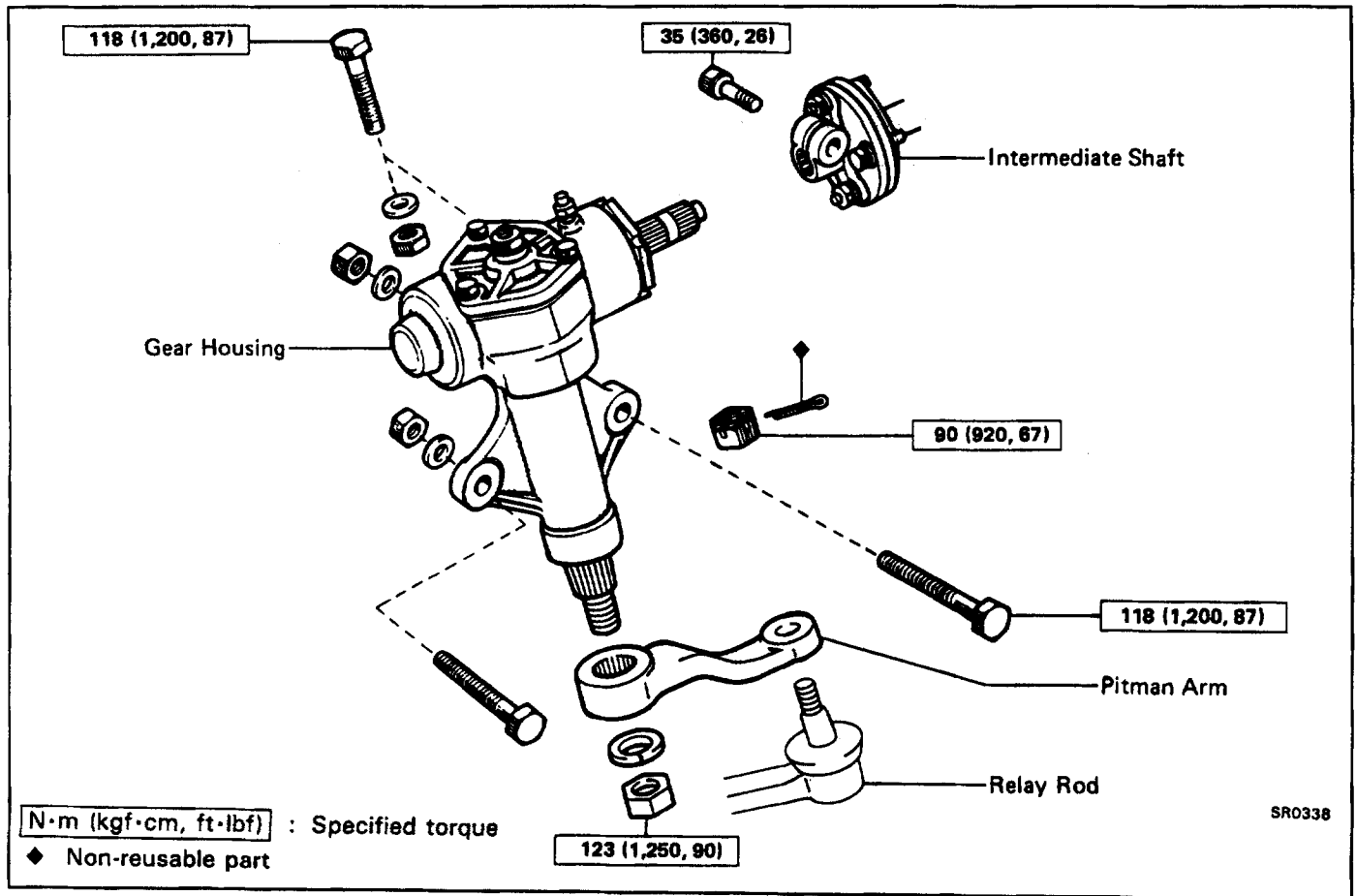
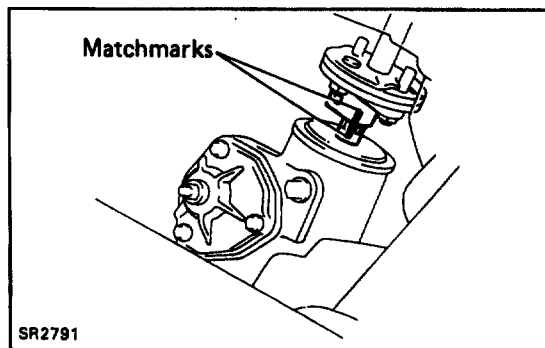


## GEAR HOUSING (2WD)

### MANUAL GEAR HOUSING REMOVAL AND INSTALLATION

Remove and install the parts, as shown.

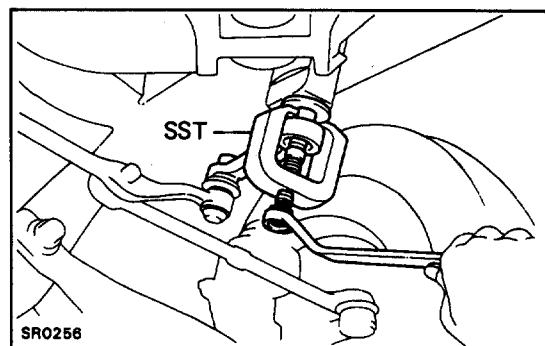




## MAIN POINT OF REMOVAL AND INSTALLATION

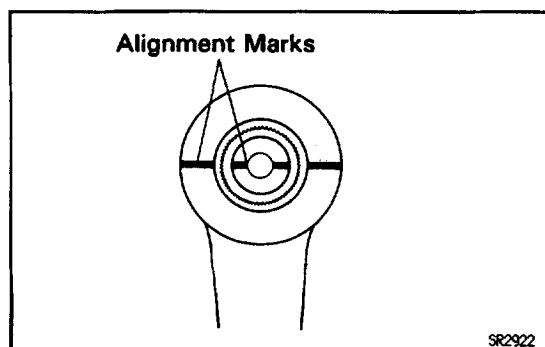
### 1. DISCONNECT INTERMEDIATE SHAFT

- (a) Loosen the column side set bolt.
- (b) Remove the gear side set bolt.
- (c) Place matchmarks on the flexible coupling and intermediate shaft.
- (d) Slide the shaft rearward to disconnect the shaft from the intermediate shaft.



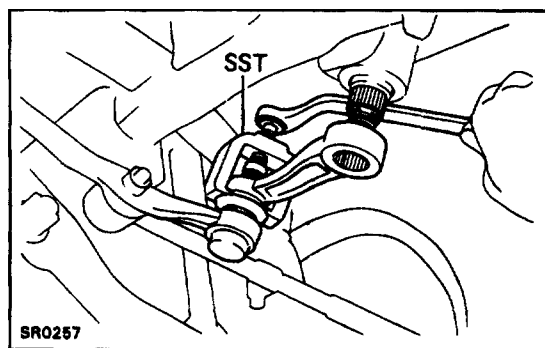
### 2. DISCONNECT PITMAN ARM FROM GEAR HOUSING

- (a) Loosen the pitman arm nut.
- (b) Using SST, disconnect pitman arm from the gear housing.  
SST 09610-55012



### 3. CONNECT PITMAN ARM TO GEAR HOUSING

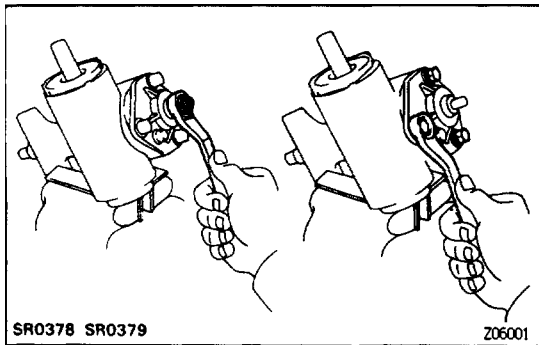
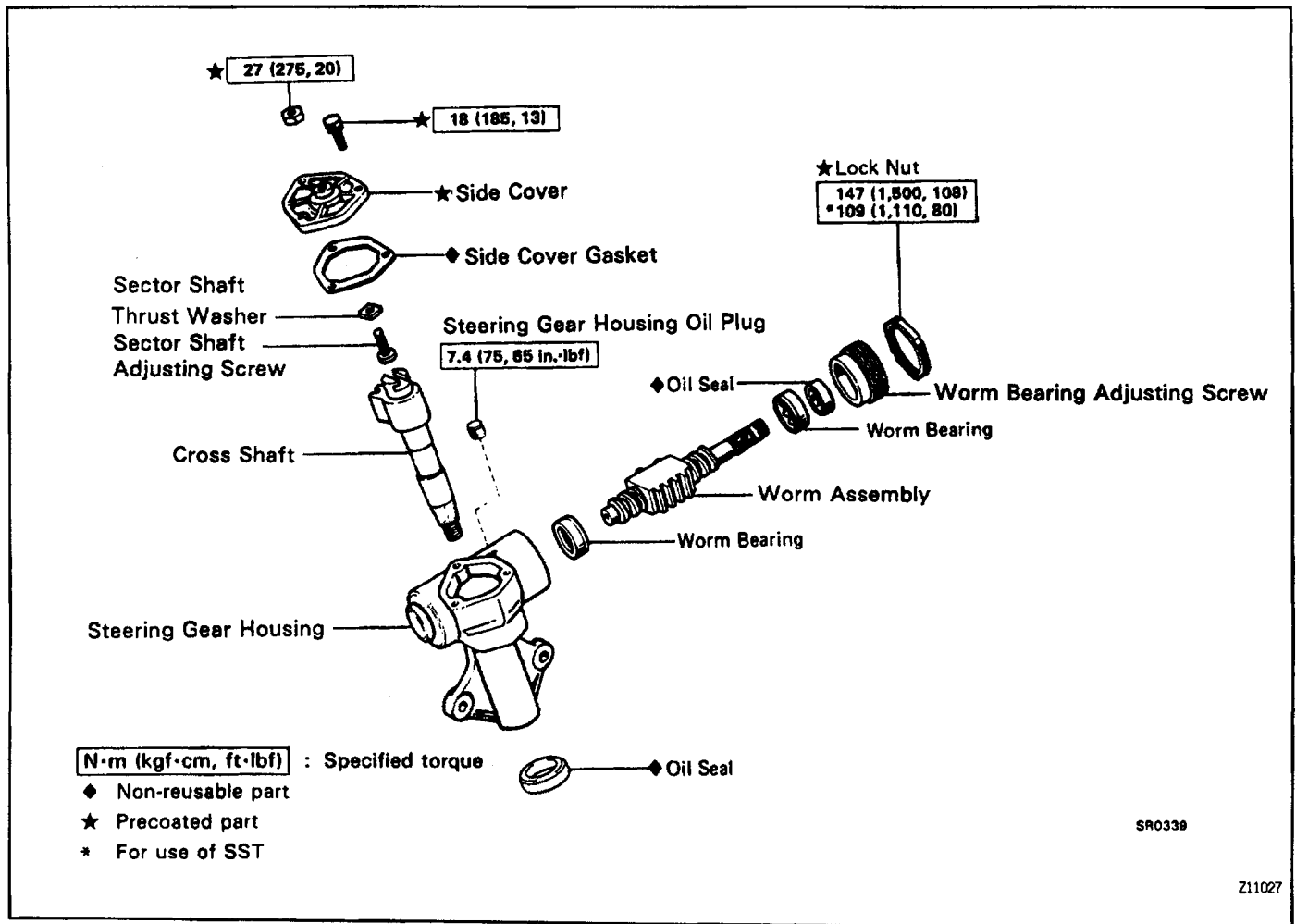
- (a) Align the alignment marks on the sector shaft and pitman arm and install the spring washer and arm.
- (b) Tighten the pitman arm nut.  
**Torque: 123 N·m (1,250 kgf·cm, 90 ft·lbf)**



### 4. DISCONNECT PITMAN ARM FROM RELAY ROD

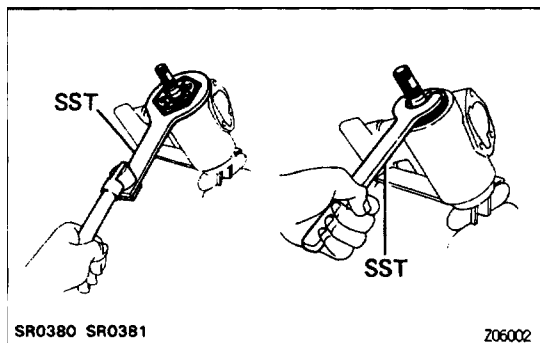
- Using SST, disconnect the pitman arm from the relay rod.  
SST 09611-22012

## COMPONENTS

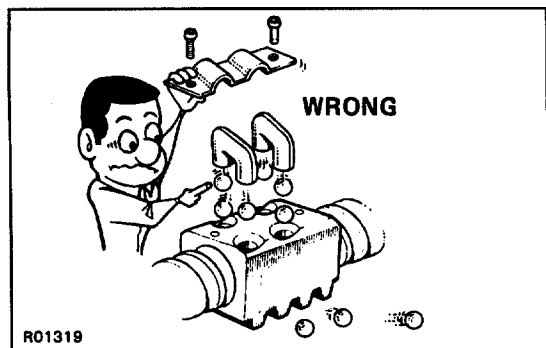


## MANUAL GEAR HOUSING DISASSEMBLY

1. **REMOVE STEERING GEAR HOUSING OIL PLUG AND DRAIN GEAR OIL**
2. **REMOVE SIDE COVER AND CROSS SHAFT**
  - (a) Remove the adjusting screw lock nut and 3 bolts.
  - (b) Remove the side cover by turning the adjusting screw clockwise with a screwdriver.
  - (c) Pull out the cross shaft and adjusting screw from the gear housing.



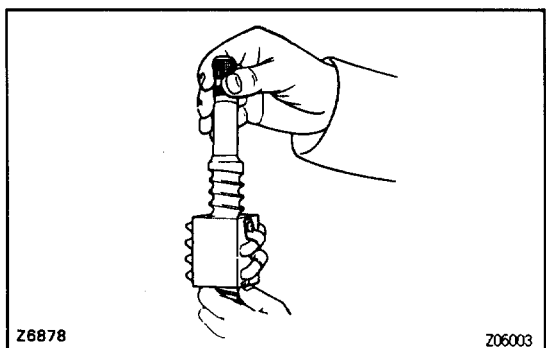
3. **REMOVE LOCK NUT**  
Using SST, remove the lock nut.  
SST 09617-22020
4. **REMOVE WORM BEARING ADJUSTING SCREW**  
Using SST, remove the adjusting screw.  
SST 09616-30011



## 5. REMOVE WORM ASSEMBLY

Pull the worm assembly out of the gear housing.

**NOTICE:** Do not disassemble the ball nut from the worm assembly.

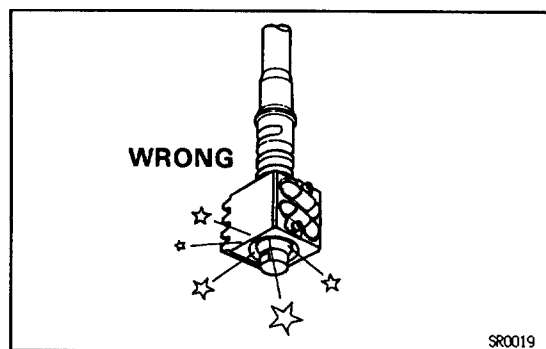


## MANUAL GEAR HOUSING INSPECTION AND REPLACEMENT

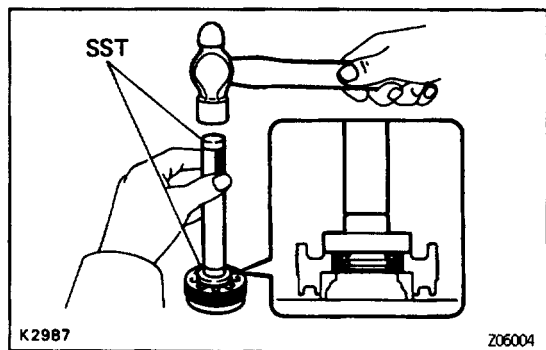
### 1. INSPECT WORM AND BALL NUT

- Check the worm and ball nut for wear or damage.
- Check that the nut rotates smoothly down the shaft by its own weight.

If a problem is found, repair or replace the worm.



**NOTICE:** Do not allow the ball nut to hit the end of the worm shaft.



### 2. INSPECT WORM BEARING AND OIL SEAL

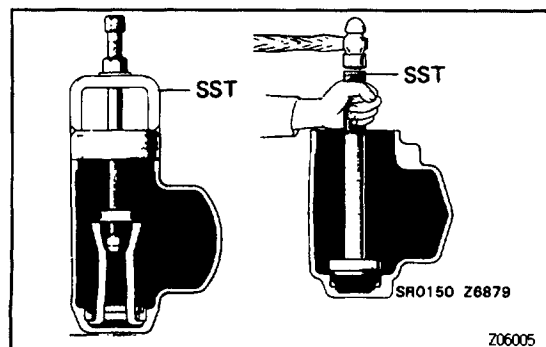
Check for wear or damage.

If a problem is found, replace the bearings, bearing races and oil seal.

### 3. IF NECESSARY, REPLACE OIL SEAL

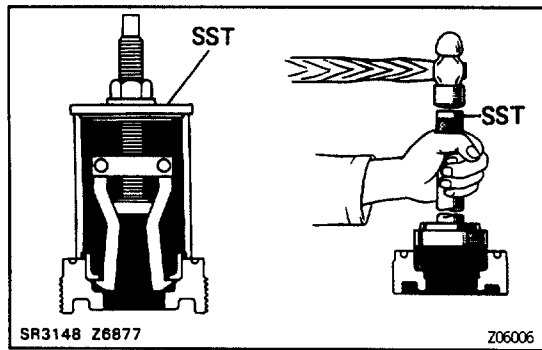
- Remove the oil seal with a screwdriver.
- Using SST, install a new oil seal.

SST 09620-30010 (09627-30010, 09631-00020)



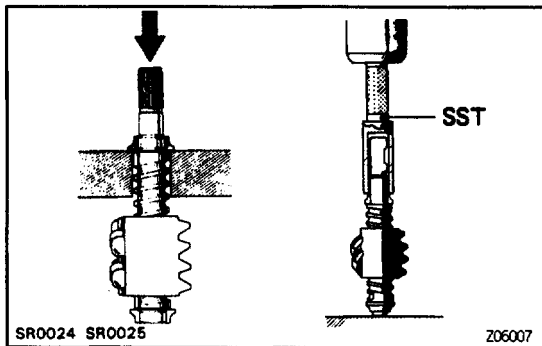
### 4. IF NECESSARY, REPLACE OUTER RACE IN GEAR HOUSING

- Using SST, remove the outer race from the housing.  
SST 09620-65014 (09612-01030)
- Using SST, install a new outer race into the housing.  
SST 09620-30010 (09626-30010, 09631-00020)



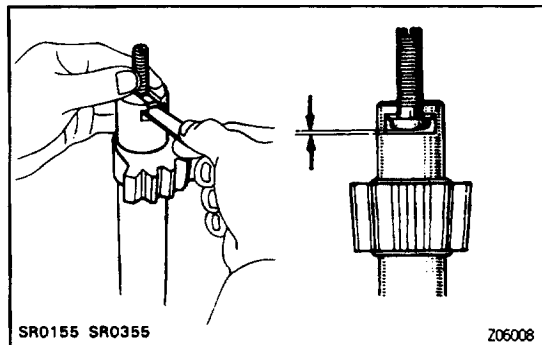
## 5. IF NECESSARY, REPLACE OUTER RACE IN ADJUSTING NUT

- Remove the oil seal with a screwdriver.
- Using SST, remove the outer race from the nut.  
SST 09612-30012
- Using SST, install a new oil race into the nut.  
SST 09620-30010 (09626-30010, 09631-00020)
- Using SST, install a new oil seal into the nut.  
SST 09620-30010 (09627-30010, 09631-00020)



## 6. IF NECESSARY, REPLACE INNER RACE ON WORM ASSEMBLY

- Using a press, remove the inner races from the shaft.
- Using SST, press new inner races onto the shaft.  
SST 09620-30010 (09623-30010)



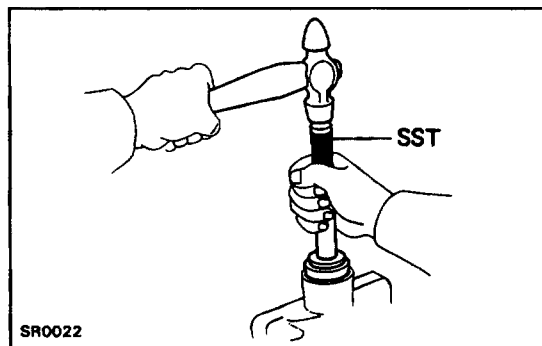
## 7. INSPECT CROSS SHAFT

Measure shaft thrust clearance with a feeler gauge.

**Maximum clearance:**

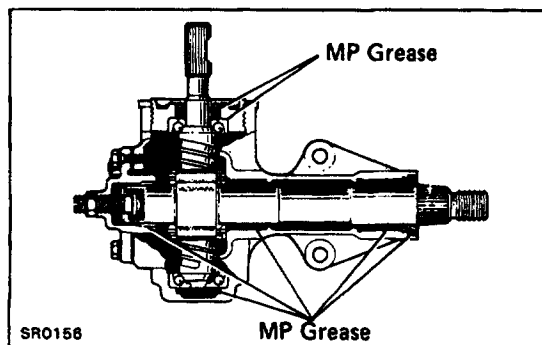
**0.05 mm (0.0020 in.) or less**

If necessary, install a new thrust washer which will provide the minimum clearance between the cross shaft and the adjusting screw.



## 8. IF NECESSARY, REPLACE OIL SEAL

- Remove the oil seal with a screwdriver from the gear housing.
- Using SST and a hammer, install a new oil seal.  
SST 09630-00012 (09631-00020, 09631-00090)

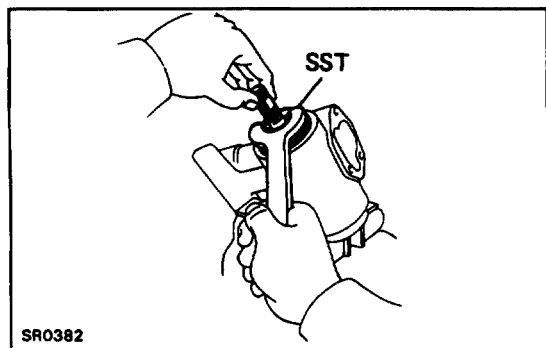


## MANUAL GEAR HOUSING ASSEMBLY

### 1. APPLY MP GREASE TO BUSHING, NEEDLE ROLLER BEARING AND OIL SEALS

### 2. INSTALL WORM SHAFT INTO GEAR HOUSING

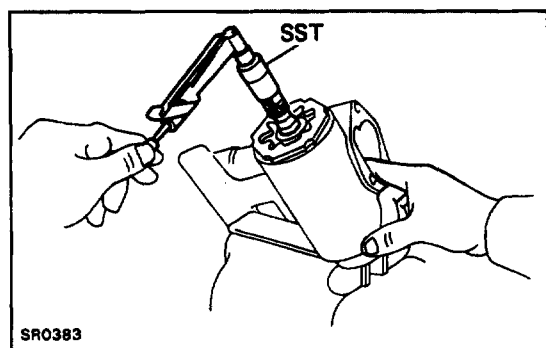
Place the worm bearing on the shaft and install the shaft into the housing.



### 3. INSTALL AND ADJUST WORM BEARING ADJUSTING SCREW

- (a) Using SST, gradually tighten the adjusting screw until it is snug.

SST 09616-30020

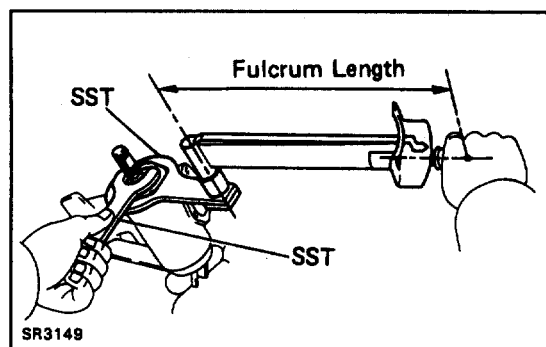


- (b) Using a torque meter and SST, measure the bearing preload in both directions. Turn the adjusting screw until the preload is correct.

**Preload (Starting):**

**0.3-0.5 N·m (3-5 kgf·cm, 2.6-4.3 in·lbf)**

SST 09616-00010



- (c) Apply sealant to the lock nut.

**Sealant:**

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

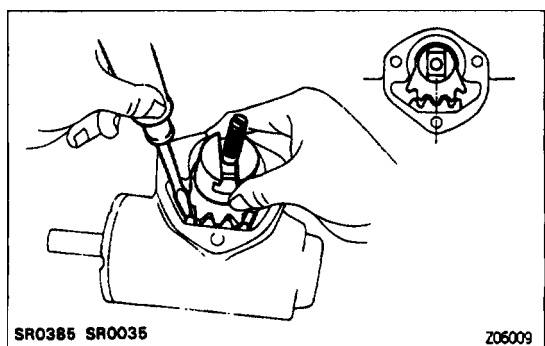
- (d) Hold the adjusting screw in position with SST and tighten the lock nut with SST.

**Torque: 147 N·m (1,500 kgf·cm, 108 ft·lbf)**

SST 09616-30011 09617-22020

**HINT:**

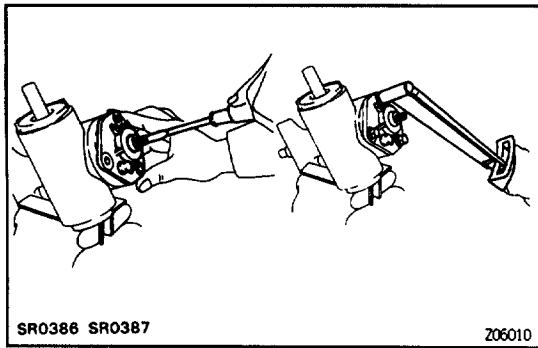
- Check that the bearing preload is still correct.
- Use a torque wrench with a fulcrum length of 425 mm (16.73 in.).



### 4. INSTALL CROSS SHAFT

- (a) Install the adjusting screw and thrust washer onto the cross shaft.

- (b) Set the ball nut at the center of the worm shaft. Install the cross shaft into the gear housing so that the center teeth mesh together.



## 5. INSTALL SIDE COVER

- Install the side cover a new gasket.
- Using a screwdriver, loosen the adjusting screw as far as possible.
- Apply sealant to the bleeder plug side cover bolt.

### Sealant:

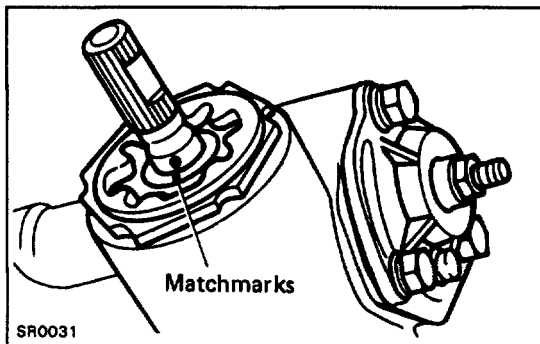
**Part No.08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent**

- Torque the 3 cover bolts.

**Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)**

## 6. PLACE WORM ASSEMBLY IN NEUTRAL POSITION

- Count the total shaft rotations and turn the shaft back half of that number.
- The worm shaft is now in neutral position.
- Place matchmarks on the worm assembly and housing to show neutral position.



## 7. ADJUST TOTAL PRELOAD

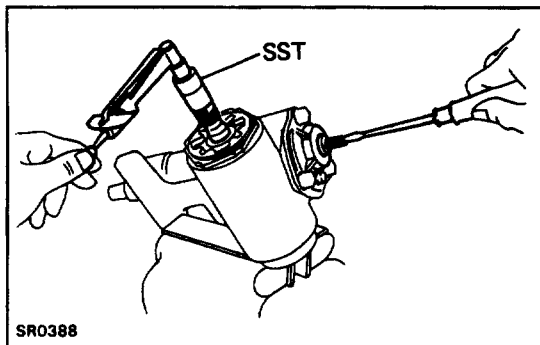
Using a torque meter and SST, turn the adjusting screw while measuring the preload until it is correct.

**HINT:** Be sure that the worm assembly is in neutral position.

### Preload (Starting):

**0.8-1.0 N·m (8-10.5 kgf·cm, 6.9-9.1 in·lbf)**

**SST 09616-00010**



## 8. TIGHTEN CROSS SHAFT ADJUSTING SCREW LOCK NUT

- Apply sealant to the lock nut.

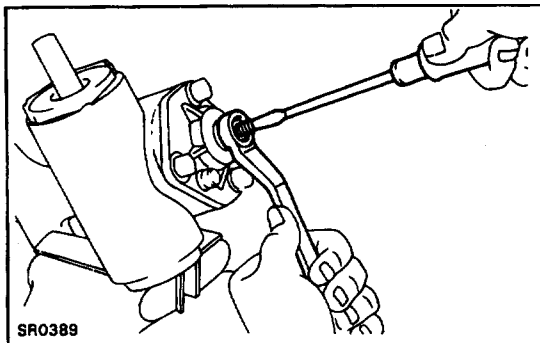
### Sealant:

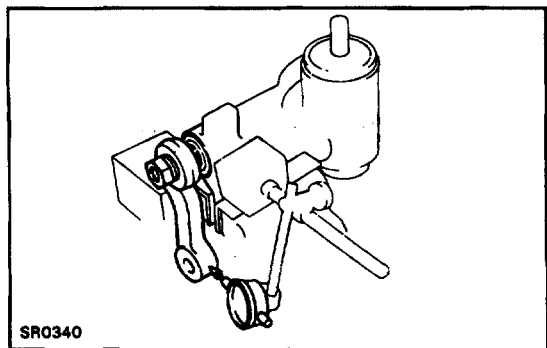
**Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent**

- Hold the screw with a screwdriver while tightening the lock nut.
- Torque the lock nut.

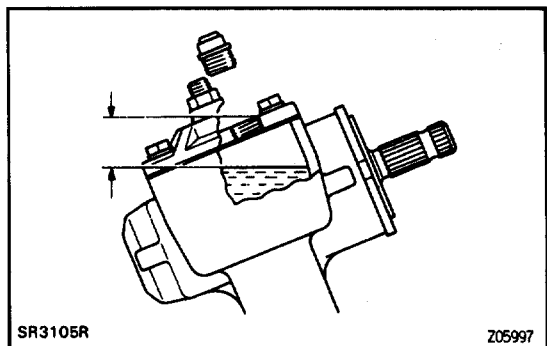
**Torque: 27 N·m (275 kgf·cm, 20 ft·lbf)**

**HINT:** Check that the preload is still correct.



**9. MEASURE CROSS SHAFT BACKLASH**

Install a dial indicator. Check that the sector shaft has no backlash within 100 degrees of the left and right sides from neutral position.

**10. REPLENISH WITH GEAR OIL**

Oil type:

API GL-4, SAE 90

Capacity:

380-400 cc (23.2-24.4 cu in.)

Oil level: (at installation)

18-28 mm (0.71-1.10 in.) from top

**11. INSTALL BLEEDER PLUG**

Torque: 7.4 N·m (75 kgf·cm, 65 in.·lbf)