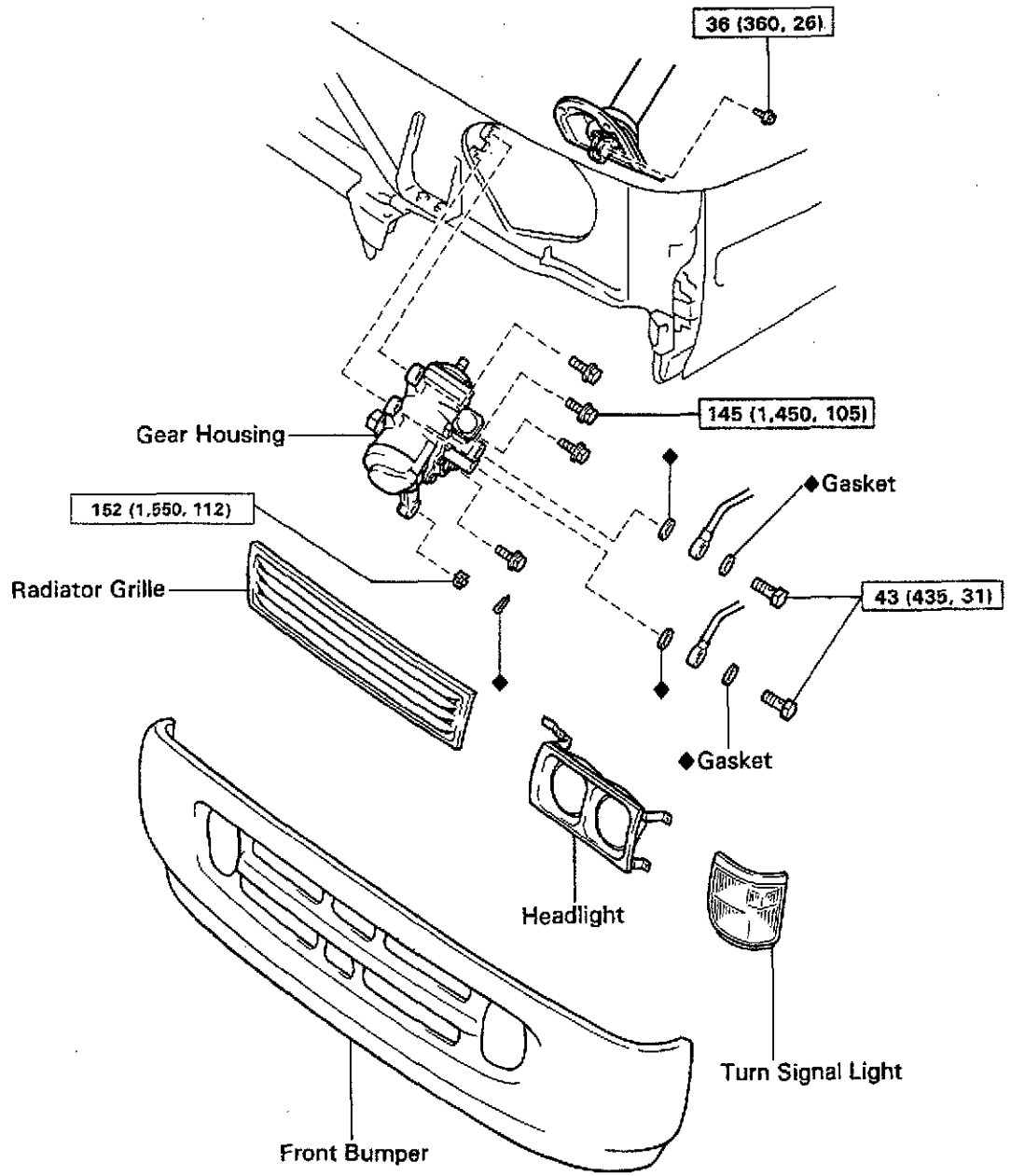
GEAR HOUSING

STEERING GEAR HOUSING REMOVAL AND INSTALLATION

SR0FH-01

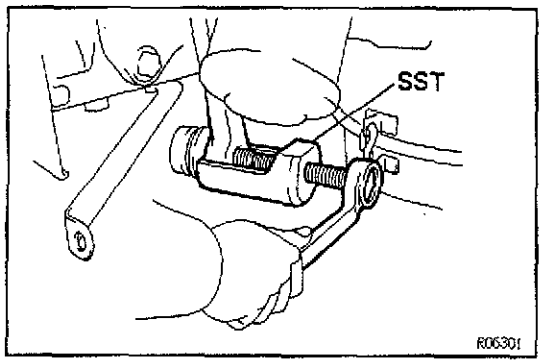
Remove and install the parts, as shown:



N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

R06462

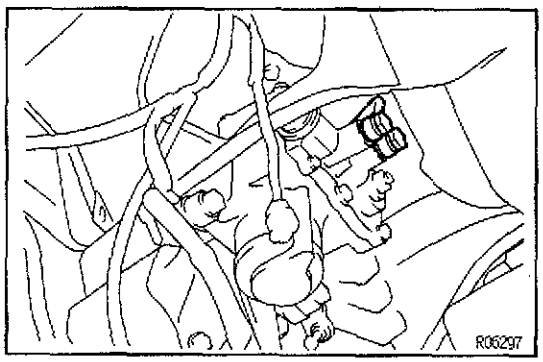


MAIN POINTS OF REMOVAL AND INSTALLATION

1. DISCONNECT DRAG LINK FROM PITMAN ARM

(a) Remove the cotter pin and nut.

(b) Using SST, disconnect the pitman arm from the drag link.
SST 09610–20012



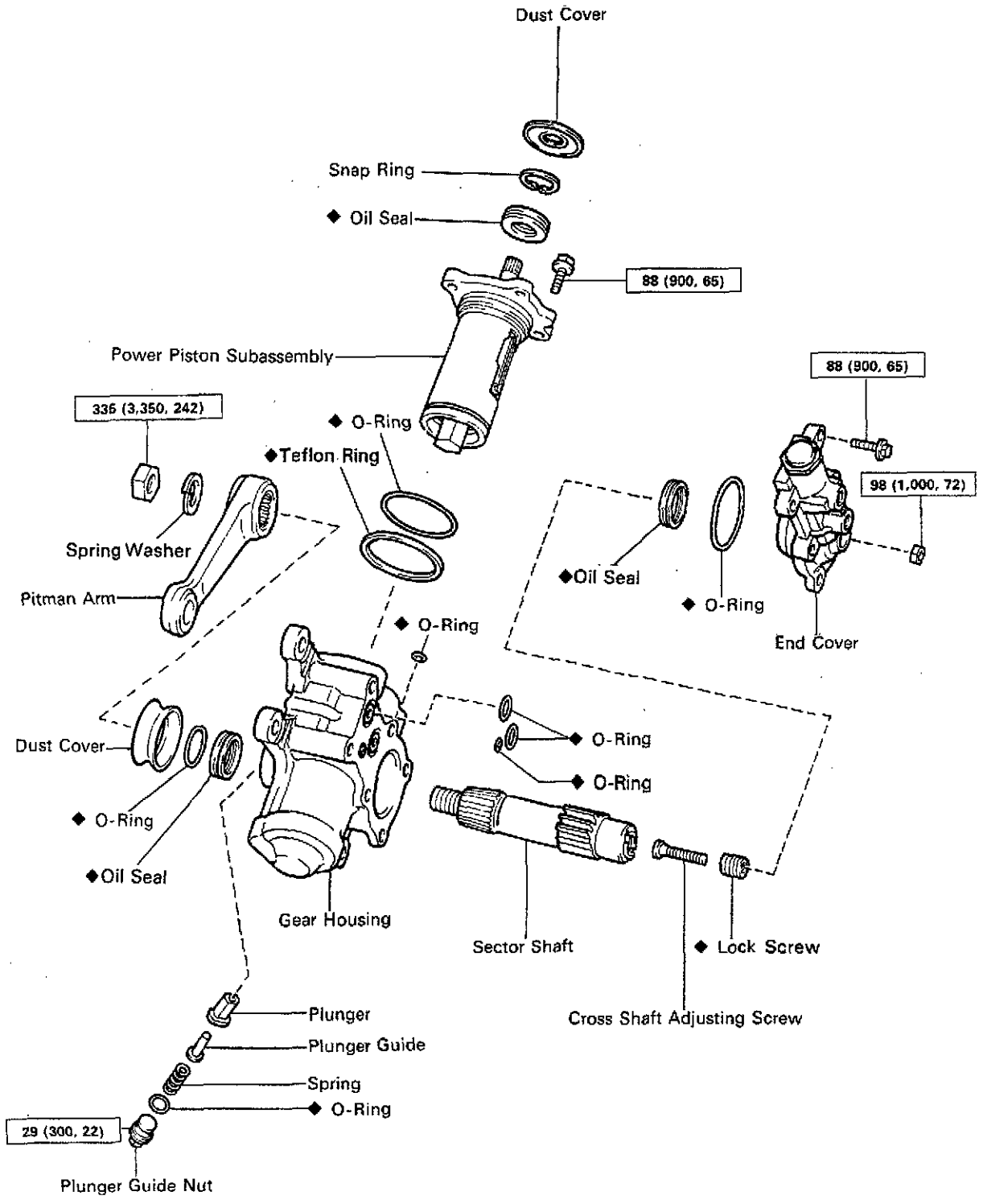
2. DISCONNECT AND CONNECT PRESSURE AND RETURN TUBES FROM/ TO GEAR HOUSING

Disconnect and connect the pressure and return tubes from/ to the gear housing.
Torque: 43 N·m (435 kgf·cm, 32 ft·lbf)

SR

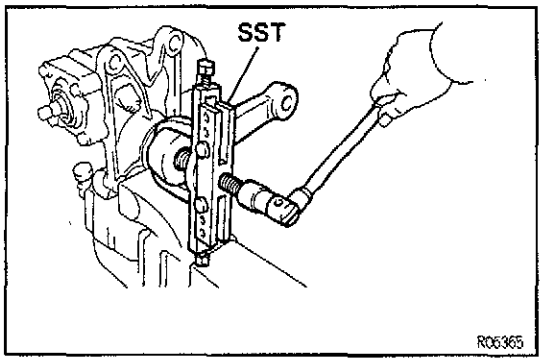
SR08X-02

COMPONENTS



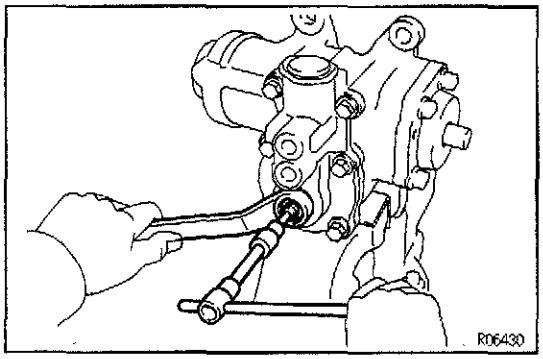
N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non-reusable part

R06521

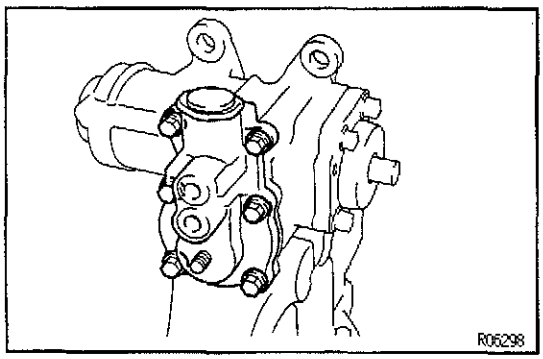


GEAR HOUSING DISASSEMBLY

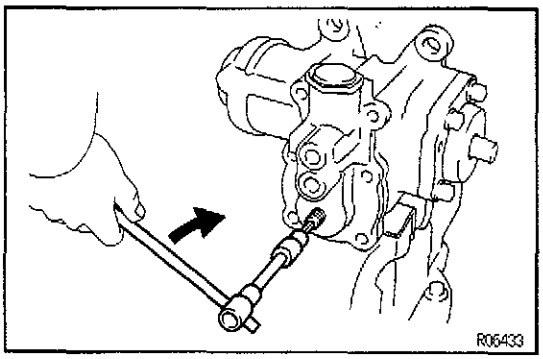
1. **MOUNT HOUSING ON STAND**
2. **REMOVE PITMAN ARM**
   Using SST, remove the pitman arm.
   SST 09610–20012



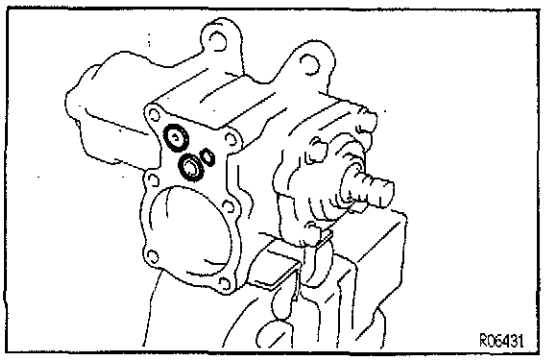
3. **REMOVE END COVER**
   (a) Using a hexagon wrench (6 mm), remove the lock nut.



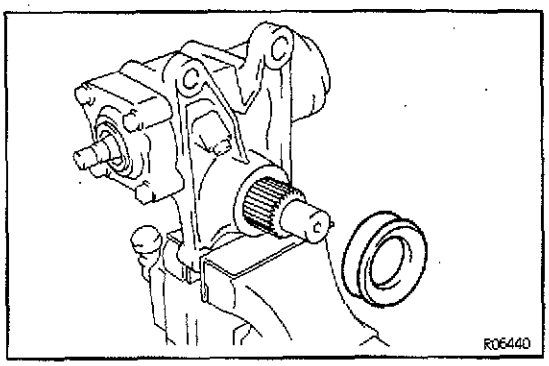
(b) Remove the 6 bolts.



(c) Using a hexagon wrench (6 mm), screw in the adjusting screw until the cover comes off.

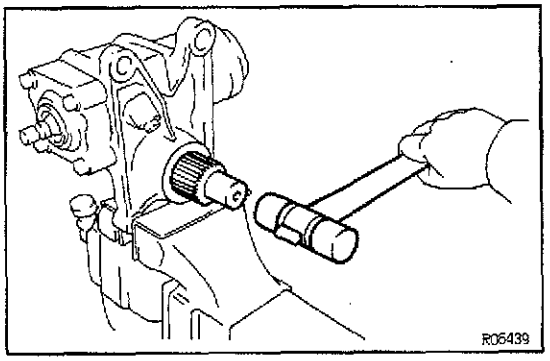


(d) Remove the 3 O–rings.

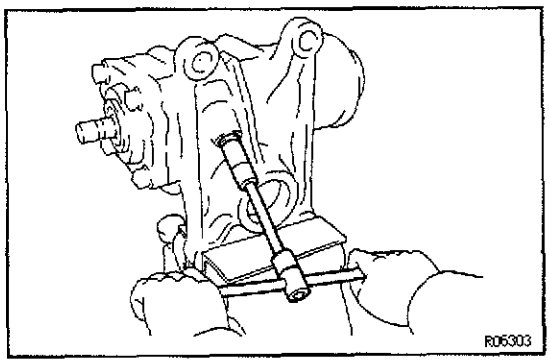


4. REMOVE SECTOR SHAFT

(a) Remove the dust cover.

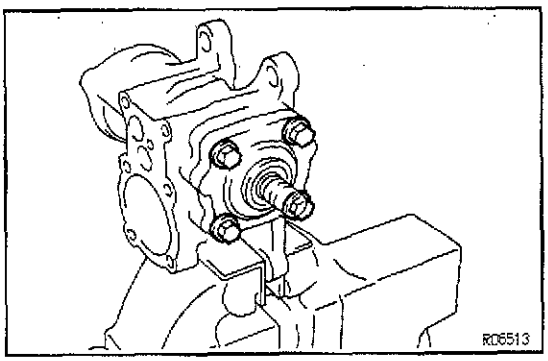


(b) Using a plastic hammer, tap on the sector shaft end and pull out the shaft.



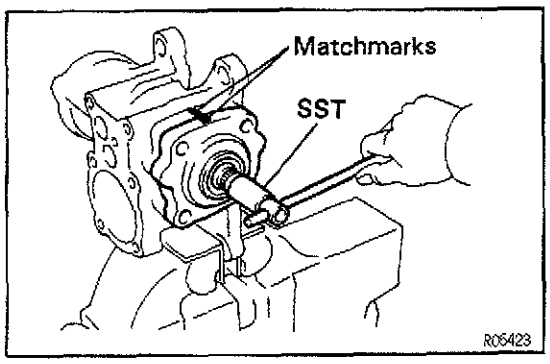
5. REMOVE PLUNGER GUIDE NUT

(a) Remove the plunger guide nut.
(b) Remove the spring, plunger guide and plunger.
(c) Remove the O–ring.

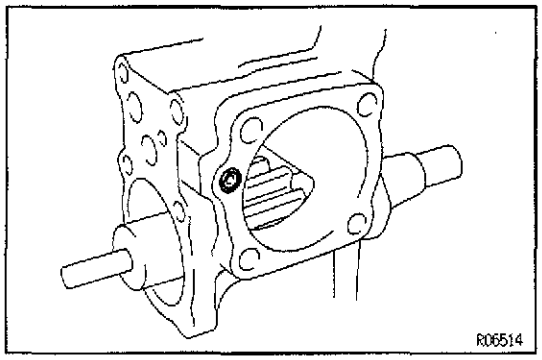


6. REMOVE POWER PISTON SUB ASSEMBLY

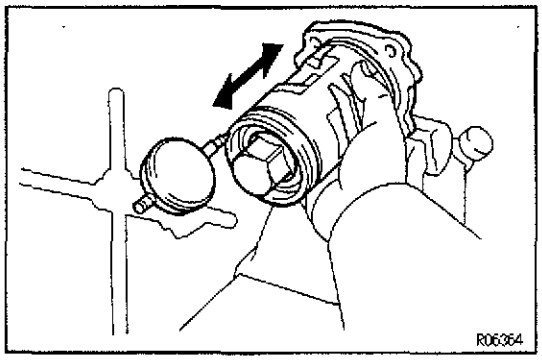
(a) Remove the worm shaft dust cover.
(b) Remove the 4 bolts.



(c) Place matchmarks on the top cover and the gear housing.
(d) Using SST, turn the worm shaft counterclockwise until the shaft is locked. Then turn worm shaft clockwise until the top cover is separated from the housing by holding the power piston with your finger.
SST 09616–00010



(e) Remove the O–Ring.



GEAR HOUSING INSPECTION AND REPLACEMENT

SROFK–01

1. CHECK BALL CLEARANCE

(a) Mount the top cover in a vise.

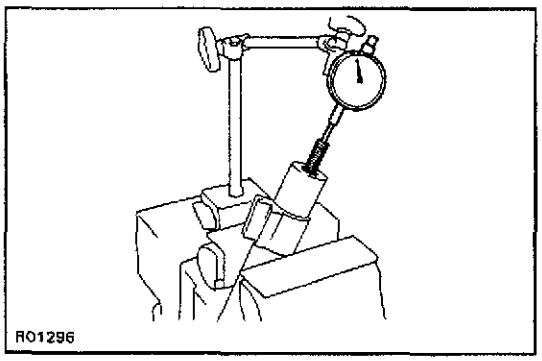
(b) Using a dial indicator, check the ball clearance by moving the power piston subassembly with your fingers.

Maximum ball clearance:

0.05 mm (0.0020 in.)

If clearance is excessive, replace the power piston subassembly.

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2. CHECK SECTOR SHAFT ADJUSTING SCREW THRUST CLEARANCE

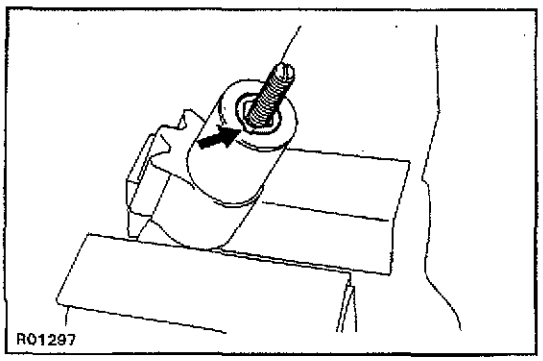
(a) Clamp the cross shaft in a vise.

(b) Using a dial indicator, measure the thrust clearance.

Thrust clearance:

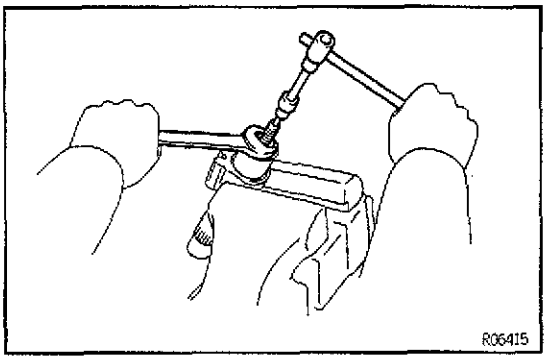
0 – 0.15 mm (0 – 0.0059 in.)

If thrust clearance is not correct, adjust the thrust clearance.

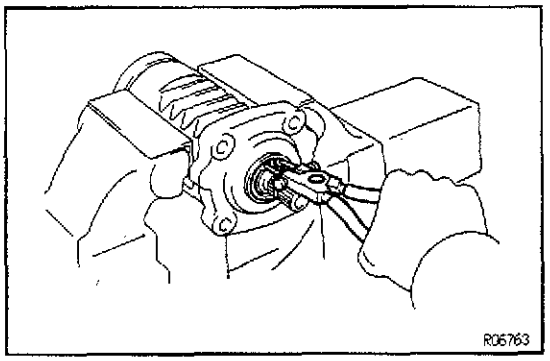


3. IF NECESSARY, ADJUST THRUST CLEARANCE

(a) Using a chisel and hammer, remove the lock nut stake.

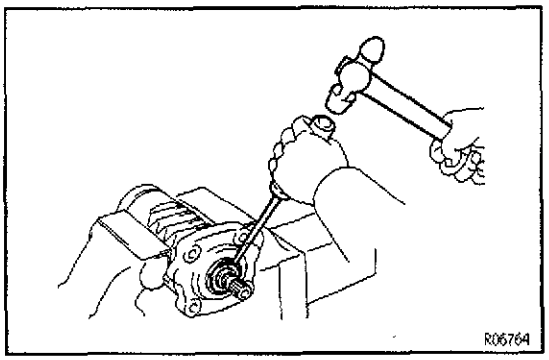


(b) Using a hexagon wrench (6 mm), remove the lock nut.
(c) Adjust the adjusting screw for correct thrust clearance and tighten a new lock nut.
(d) Stake the lock nut.

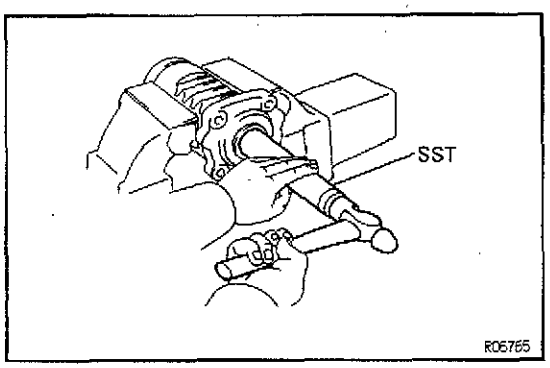


4. IF NECESSARY, REPLACE POWER PISTON SUB ASSEMBLY OIL SEAL

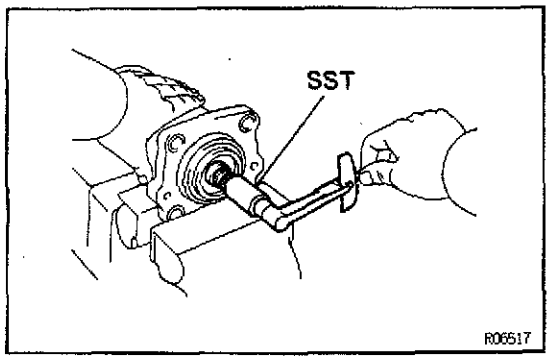
(a) Using snap ring pliers, remove the snap ring.



(b) Using a screwdriver, remove the oil seal.
NOTICE: Be careful not to scratch the worm shaft or the top cover.

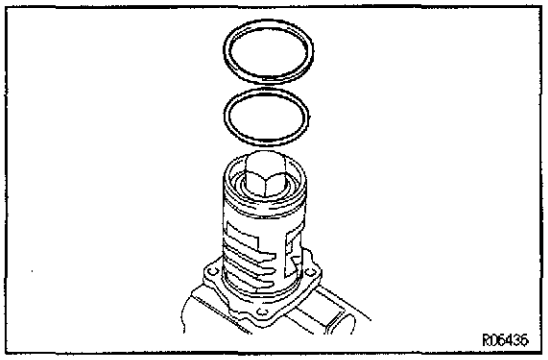


(c) Apply MP grease to the lip of a new oil seal.
(d) Using SST, install the oil seal.
SST 09612–22011
HINT: Be sure the direction of the oil seal.
(e) Using snap ring pliers, install the snap ring.



5. CHECK POWER PISTON SUBASSEMBLY PRELOAD

(a) Mount the gear housing in a vise.
(b) Using SST and a torque meter, check the preload with holding a power position with your hand.
SST 09616–00010
Preload (at turning):
0.6 N·m (6 kgf·cm, 5.2 in.·lbf) or less



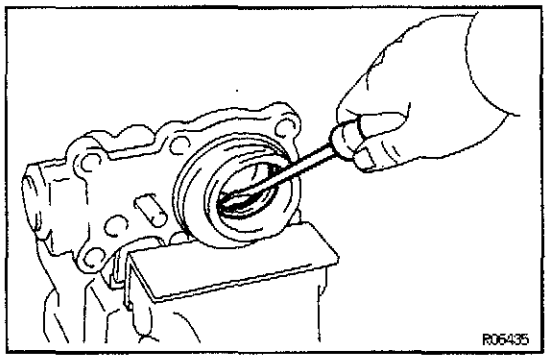
6. REPLACE POWER POSITION SUBASSEMBLY O–RING

(a) Using a screwdriver, remove the O–ring and teflon ring.

(b) Apply power steering fluid to a new O–ring and teflon ring.

(c) Install the new O–ring and teflon ring.

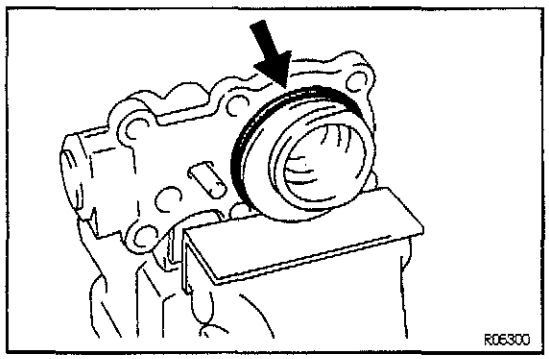
NOTICE: Be careful not to damage the teflon ring.



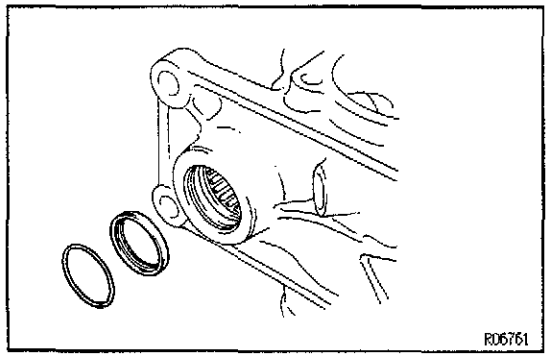
7. REPLACE END COVER OIL SEAL AND O–RING

(a) Using a screwdriver, pry out the oil seal.

SR



(b) Using a screwdriver, remove the O–ring.

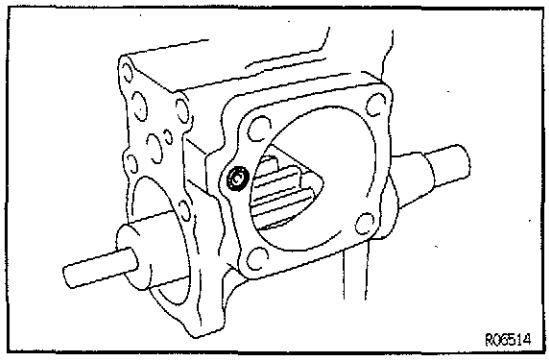


(c) Using a screwdriver, remove the O–ring and oil seal.

(d) Apply power steering fluid to a new O–ring and oil seal.

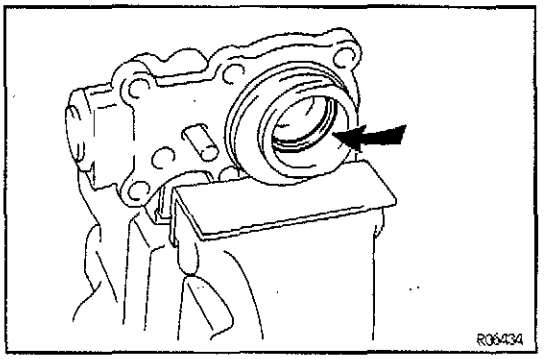
(e) Install the new O–ring and oil seal.

NOTICE: Be careful the direction of the oil seal.

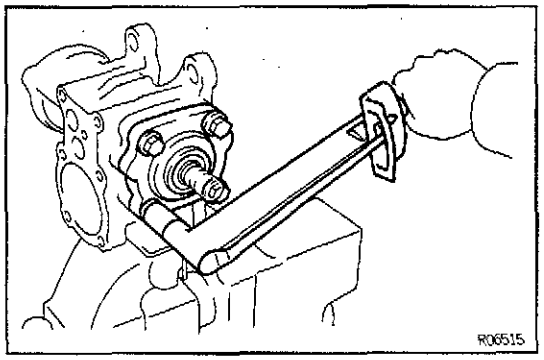


(f) Apply power steering fluid to a new O–ring.

(g) Install the new O–ring.



(h) Apply power steering fluid to a new oil seal.
(i) Install the new oil seal.
NOTICE: Be careful the direction of the oil seal.

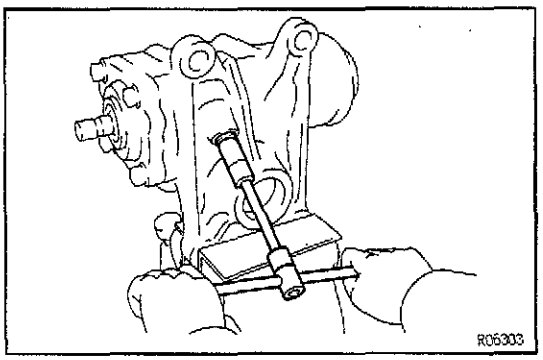


GEAR HOUSING ASSEMBLY

SR0FL-01

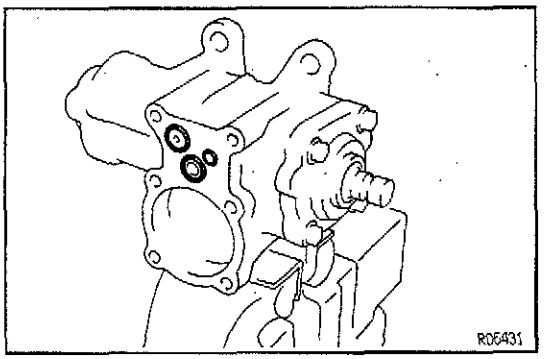
1. INSTALL POWER PISTON SUBASSEMBLY

(a) Apply power steering fluid to a new O-ring.
(b) Install the new O-ring to the gear housing and power piston subassembly.
(c) Install and torque the 4 bolts.
Torque: 88 N·m (900 kgf·cm, 65 ft·lbf)



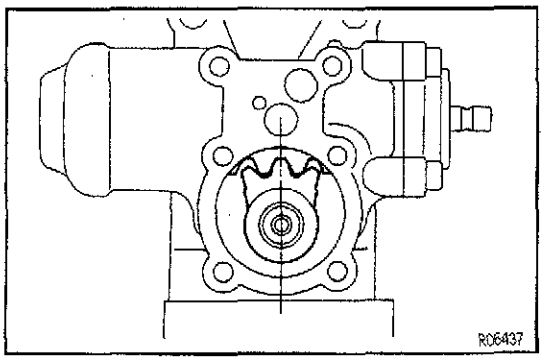
2. INSTALL PLUNGER GUIDE NUT

(a) Install the plunger, plunger guide and spring.
(b) Install a new O-ring to the plunger guide nut and install the plunger guide nut .
Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)

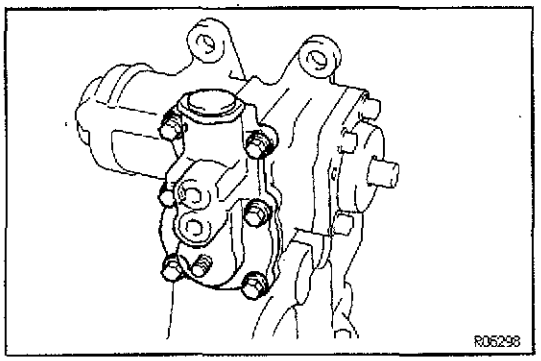


3. INSTALL SECTOR SHAFT AND END COVER

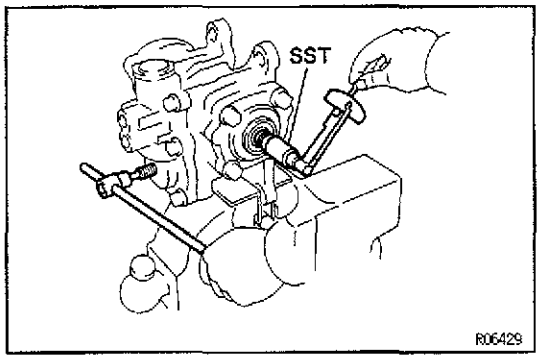
(a) Install the 3 new O-rings to the gear housing.



(b) Assemble the sector shaft to the end cover.
HINT: Fully loosen the adjusting screw.
(c) Set the worm gear at the center of the gear housing.
(d) Insert and push the sector shaft into the gear housing so that the center teeth mesh together.
NOTICE: Determine center position of gear housing.



(e) Tighten the 6 bolts in a diagonal pattern.
Torque: 88 N·m (900 kgf·cm, 65 ft·lbf)
NOTICE:
- Be careful not to drop the pin bulb and bush.
- Be careful not to damage the end cover.

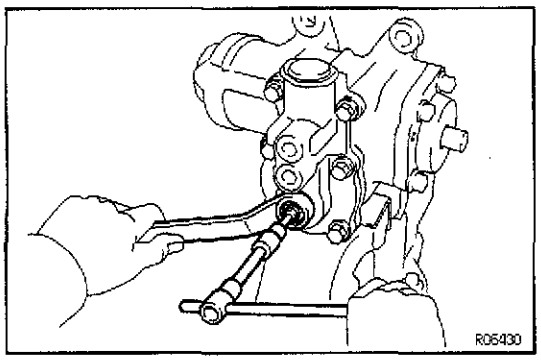


4. ADJUST TOTAL PRELOAD

(a) Install SST with a torque meter on the worm shaft.
SST 09616–00010

(b) Turn the adjusting screw while measuring the preload until it is correct.
Total preload:
Add worm bearing preload:
0.4–0.6 N·m (4.5–6.0 kgf·cm, 3.9–5.2 in.·lbf)

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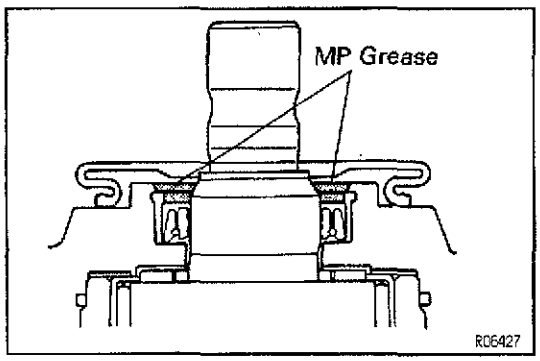


5. INSTALL AND TIGHTEN LOCK NUT

Using a hexagon wrench (6 mm), torque the lock nut while holding the adjusting screw.
Torque: 98 N·m (1,000 kgf·cm, 72 ft·lbf)

6. RECHECK TOTAL PRELOAD

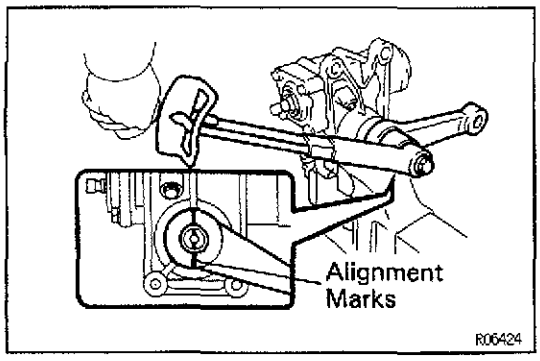
Total preload:
0.9 N·m (9 kgf·cm, 7.8 in.·lbf) or less



7. INSTALL DUST COVER

(a) Apply MP grease the dust cover.

(b) Install the dust cover.



8. INSTALL PITMAN ARM

(a) Align the marks on the pitman arm and the sector shaft.

(b) Install and torque the pitman arm set nut.
Torque: 335 N·m (3,350 kgf·cm, 242 ft·lbf)