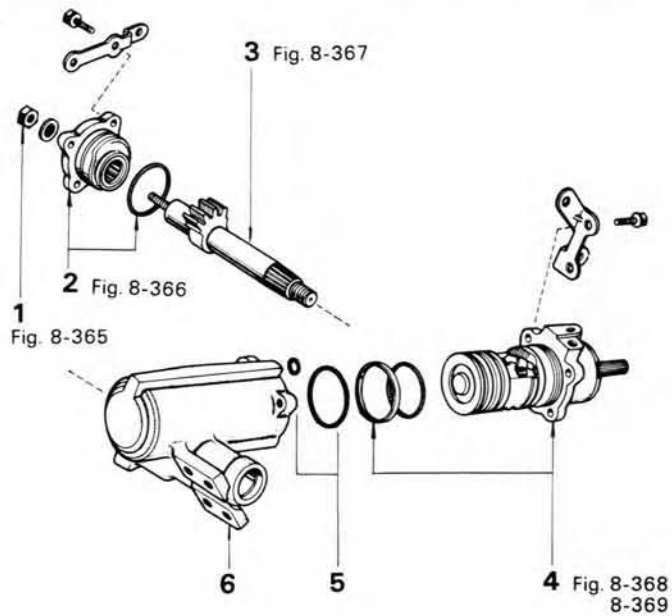
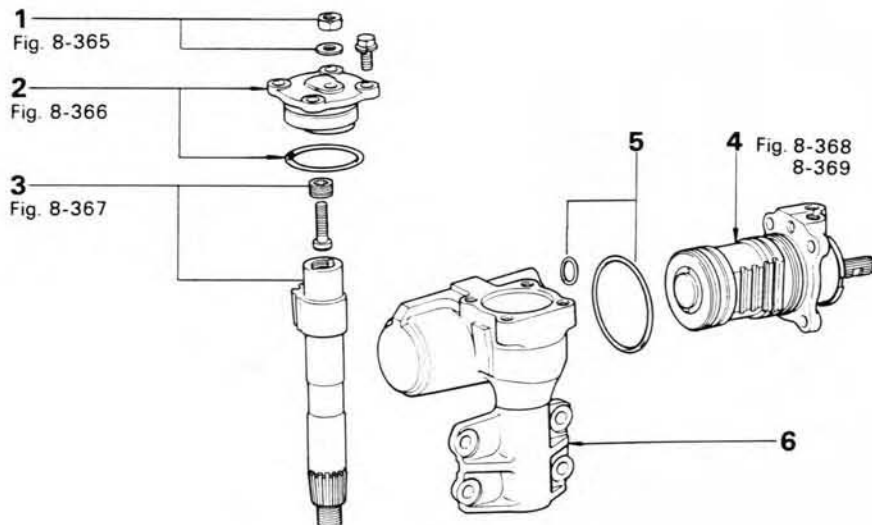


DISASSEMBLY

Disassemble the parts in the numerical order shown in the figure.

Fig. 8-364**FJ, BJ, HJ4 _ Series****FJ, HJ6 _ Series**

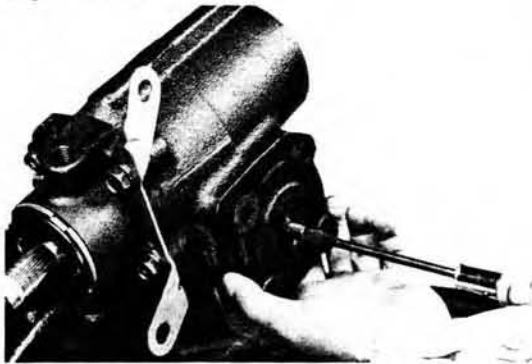
1. Lock Nut
2. End Cover & O Ring
3. Cross Shaft
4. Power Piston & Valve Body
5. O Ring
6. Housing

Fig. 8-365



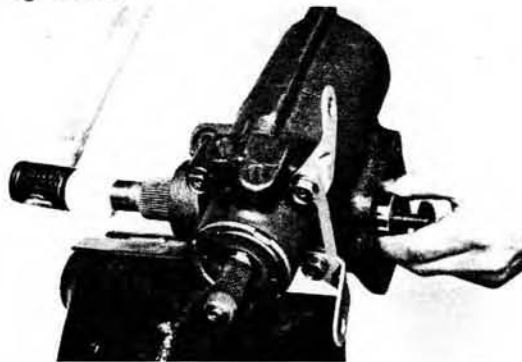
Clamp the gear housing in a vice.

Fig. 8-366



Tighten the adjusting screw until the end cover and O ring are removed from the housing.

Fig. 8-367



Remove the cross shaft by tapping the bottom end with a hammer.

Fig. 8-368



Hold the power piston with your finger and turn the worm shaft clockwise. Then pull out the valve body and power piston.

Fig. 8-369

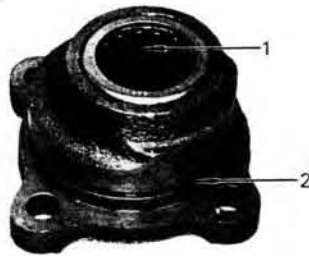


— Note —

Do not disassemble the valve body.

Do not remove the power piston nut from the worm shaft.

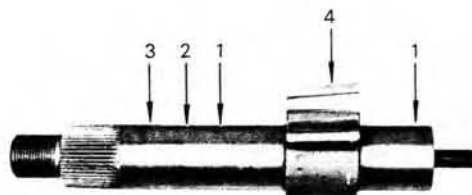
Fig. 8-370

**INSPECTION & REPAIR****End Cover**

Inspect the following for wear or damage.

1. Needle roller bearing
2. O ring groove

Fig. 8-371

**Cross Shaft**

Inspect the following for wear or damage.

1. Needle roller bearing running surface
2. Teflon ring contact surface
3. Dust seal contact surface
4. Power piston nut gear tooth contact surface

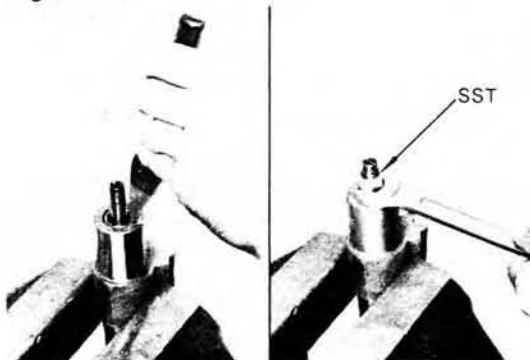
Fig. 8-372

**Adjust The Cross Shaft Adjusting Screw**

1. Measure the thrust clearance of the adjusting screw.

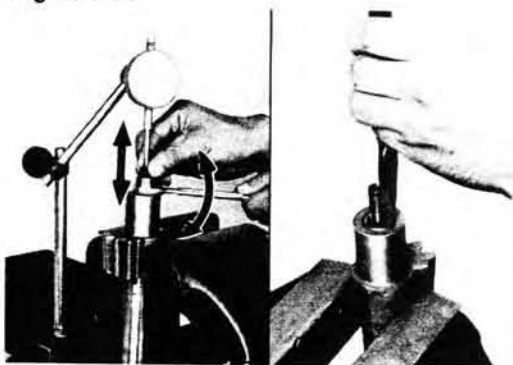
Clearance: 0.03–0.05 mm
(0.0012–0.0020 in.)

Fig. 8-373



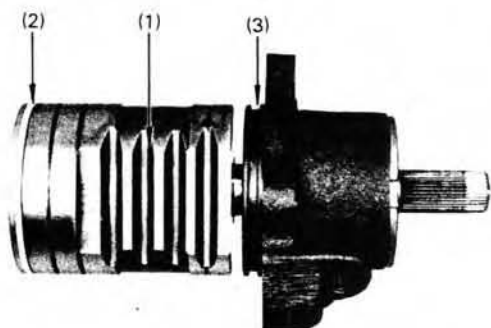
2. Unstake the lock nut.
3. Loosen the lock nut with SST
SST (09632-00030) of set [09630-00010]

Fig. 8-374



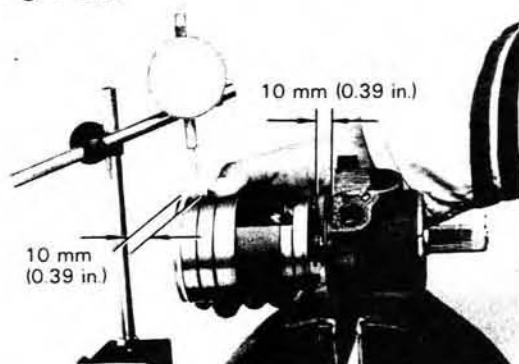
4. Adjust the clearance of the adjusting screw by turning the lock nut.
5. Stake the lock nut.

Fig. 8-375

**Power Piston Nut**

1. Inspect the following for wear or damage.
 - (1) Cross shaft gear tooth contact surface
 - (2) Teflon ring
 - (3) O ring groove

Fig. 8-376



2. Measure the ball clearance.

Clearance:

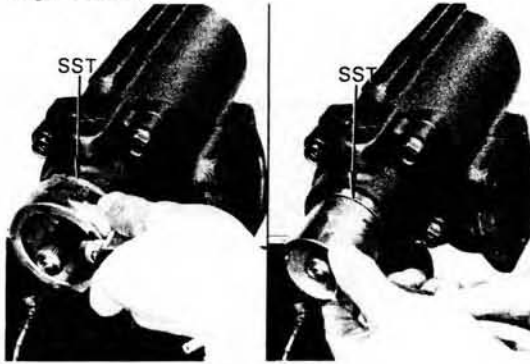
STD	0.02–0.06 mm (0.0008–0.0024 in.)
Limit	0.15 mm (0.0059 in.)

Fig. 8-377

**Adjusting Plug & Worm Bearing**

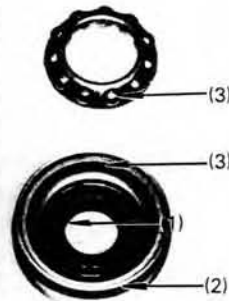
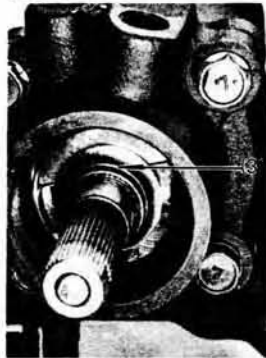
1. Support the valve body by installing it to the gear housing.

Fig. 8-378



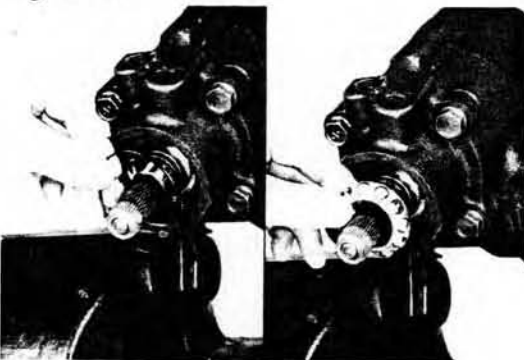
2. Remove the lock nut with SST.
SST (09631-00040) of set [09630-00010]
3. Remove the adjusting plug with SST.
SST (09631-00050) of set [09630-00010]

Fig. 8-379



4. Inspect the following for wear or damage.
 - (1) Oil Seal
 - (2) O ring contact surface
 - (3) Bearing

Fig. 8-380



5. Install the adjusting plug provisionally
 - (1) Use a new O ring.
 - (2) Install the bearing.

Fig. 8-381



- (3) Install the adjusting plug provisionally with SST.
SST (09631-00050) of set [09630-00010]
- (4) Remove the valve body and the power piston nut from the gear housing.

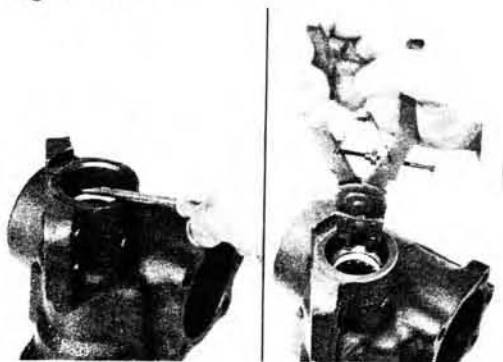
Fig. 8-382

**Gear Housing**

Inspect the following for wear or damage.

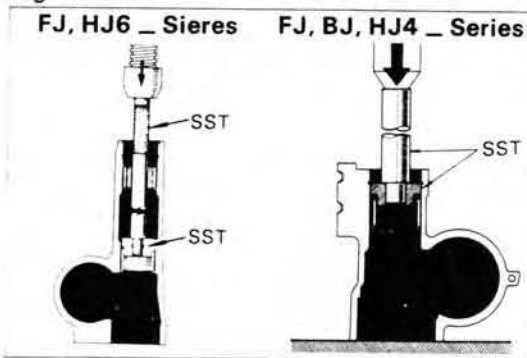
1. Needle roller bearing
2. Teflon ring
3. Dust seal

Fig. 8-383

**Replace The Needle Roller Bearing**

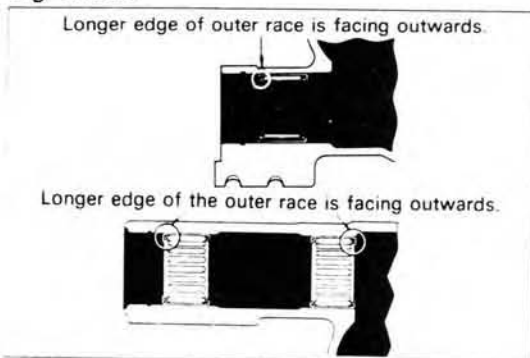
1. Remove the dust seal with a screwdriver.
2. Remove the snap ring.
3. Remove the teflon ring.

Fig. 8-384



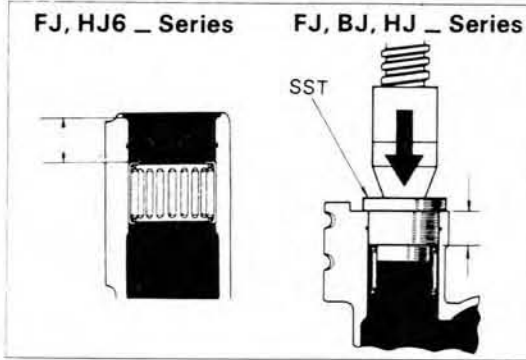
4. Remove the needle roller bearing with SST.
SST (09631-00080) of set [09630-00010]

Fig. 8-385



5. Install the needle roller bearing with the longer edge of the outer race facing outwards.

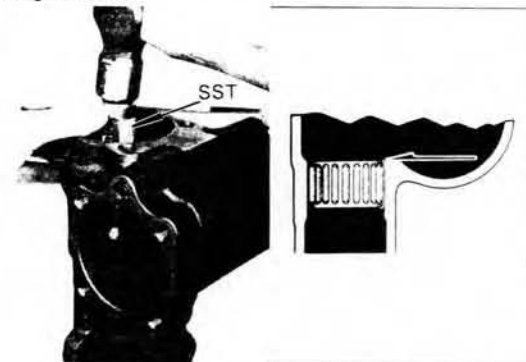
Fig. 8-386



6. Install the needle roller bearing with SST.
SST (09631-00090) of set [09630-00010]
[09631-60010] FJ, HJ6 _ series
FJ, HJ4 _ series

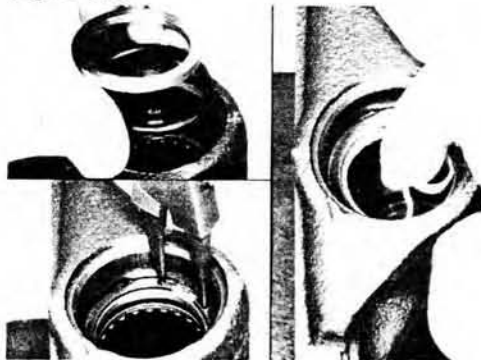
Installed position:**FJ, HJ6 _ Series****23.1 mm (0.909 in.)****FJ, HJ4 _ Series****23.6 mm (0.929 in.)**

Fig. 8-387



7. The bearing top end should be installed so that it aligns with the housing end surface.
SST (09631-00090) of set [09630-00010]

Fig. 8-388



8. Install the teflon ring and O ring
FJ, HJ6 _ series
(1) Install the O ring, spacer and snap ring.
(2) Form the teflon ring into a heart shape and install with your finger.

Fig. 8-389



FJ, HJ4 _ Series

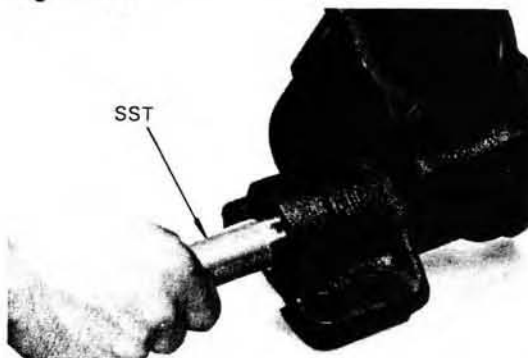
- (1) Install the teflon ring together the O ring to SST.
SST [09631-60010]
(2) Install SST together with the rings to the gear housing.
SST [09631-60010]

Fig. 8-390



- (3) Install the steel ring and the snap ring.
Confirm that the steel ring can be turned by hand.

Fig. 8-391



9. Rub SST along the inside of the teflon ring so that it will fit smoothly over the cross shaft.
SST (09631-00060) of set [09630-00010]

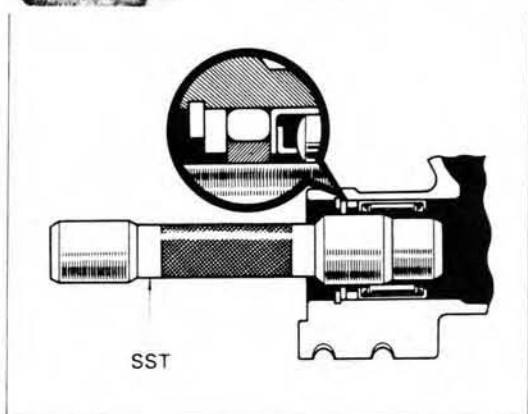
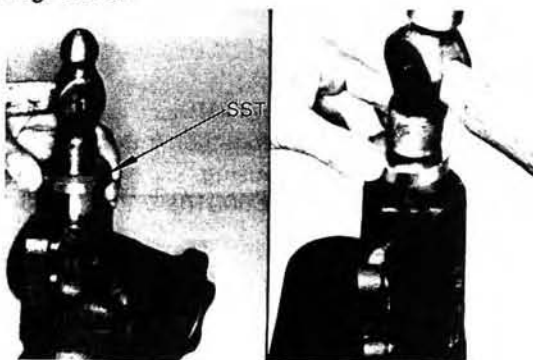


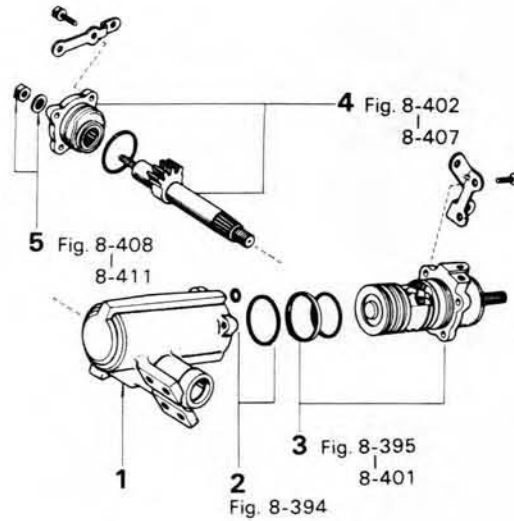
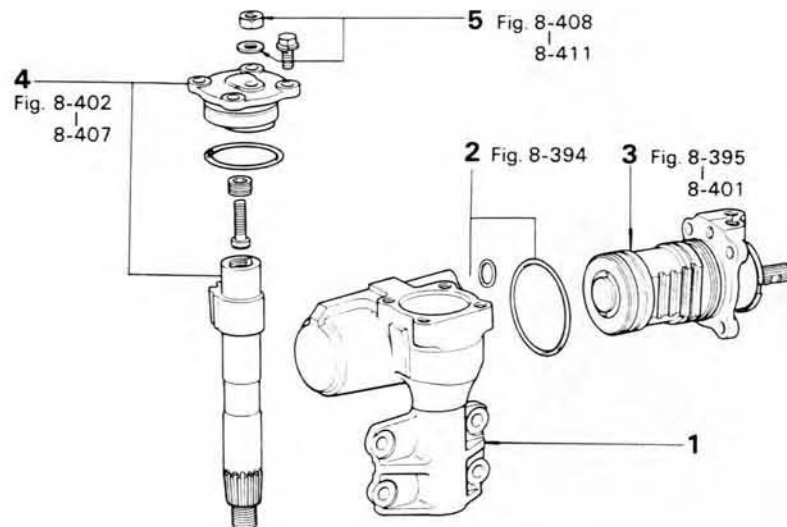
Fig. 8-392



10. Install the dust seal with SST.
SST (09631-00010) of set [09630-00010]
FJ, HJ6 — series
[09631-60010] FJ, HJ4 — series

ASSEMBLY

Assemble the parts in the numerical order shown in the figure.

Fig. 8-393**FJ, BJ, HJ4 — Series****FJ, HJ6 — Series**

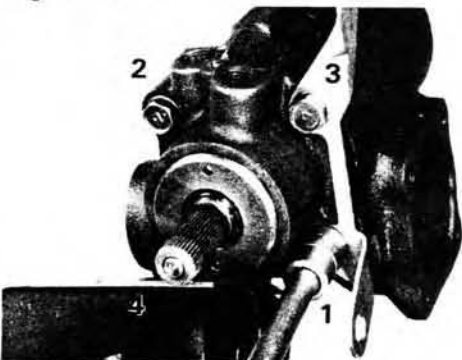
1. Housing
2. O Ring
3. Power Piston & Valve Body
4. End Cover, O Ring & Cross Shaft
5. Lock Nut & Seal Washer

Fig. 8-394



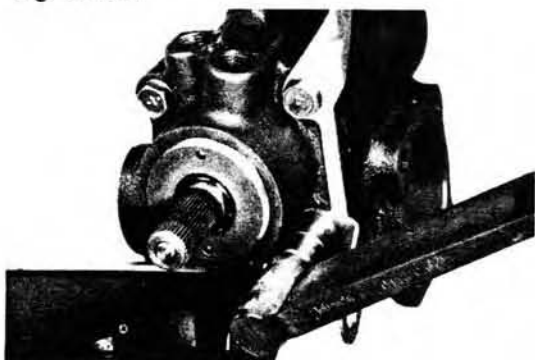
Fit the O ring accurately.

Fig. 8-395



Tighten the bolts diagonally and evenly in two or three rotations.

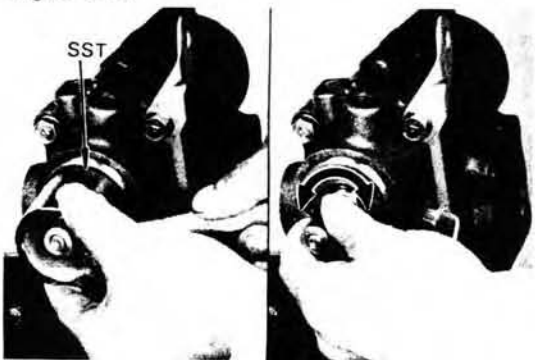
Fig. 8-396



Tighten the valve body.

Tightening torque: 4.0 – 5.5 kg-m
(29 – 39 ft-lb)

Fig. 8-397



Adjust the preload of the worm shaft.

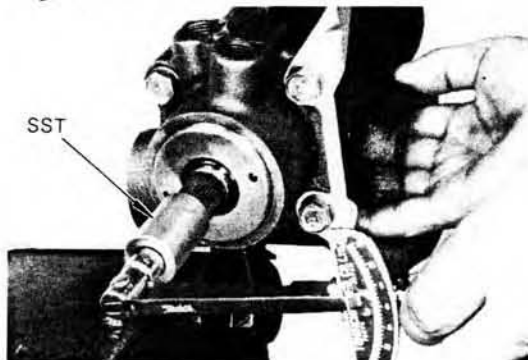
1. Tighten the adjusting plug with SST.
SST (09631-00050) of set [09630-00010]
2. Turn the worm shaft to check the turning condition.

Fig. 8-398



3. Loosen the adjusting plug with SST to adjust the preload.
SST (09631-00050) of set [09630-00010]

Fig. 8-399



4. Insert SST into the serrated section of the worm shaft, and measure the preload with a torque meter.
SST [09616-00010]

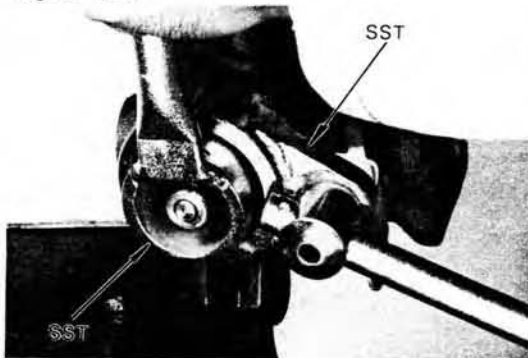
Preload (starting):

4.0 – 6.5 kg-cm
(3.5 – 5.6 in.-lb)

— Note —

Hold the power piston nut to prevent it from turning.

Fig. 8-400

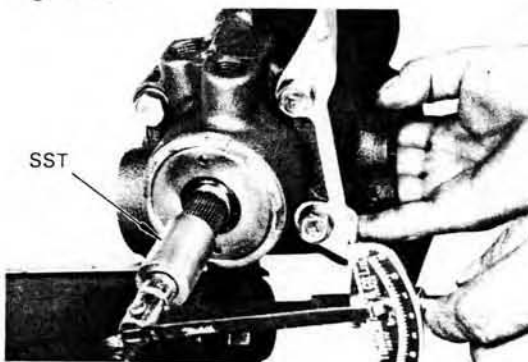


5. Tighten the lock nut with SST.
SST (09631-00050) of set [09630-00010]
(09631-00040) of set [09630-00010]

Tightening torque:

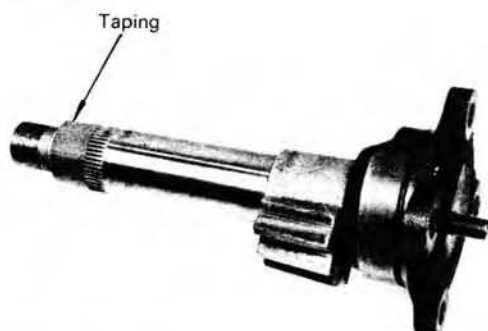
4.5 – 5.5 kg-m
(33 – 39 ft-lb)

Fig. 8-401



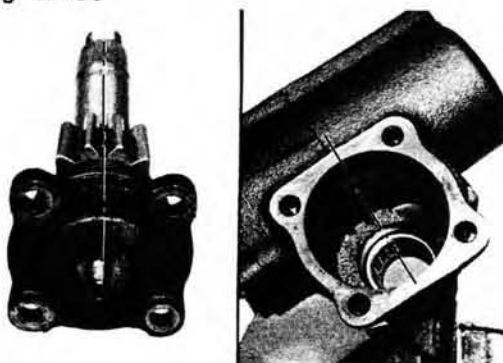
6. Recheck the preload.
Check to see that both the right and left rotations are identical.
SST [09616-00010]

Fig. 8-402



Wrap vinyl tape around the spline area of the cross shaft and loosen the adjusting screw fully.

Fig. 8-403



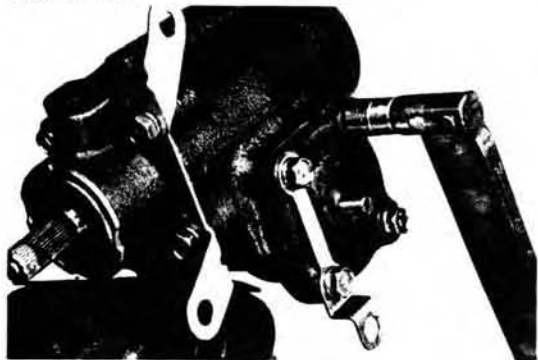
Align the cross shaft gear center with that of the power piston nut gear.

Fig. 8-404



Never turn the cross shaft, as this may cause O ring damage.

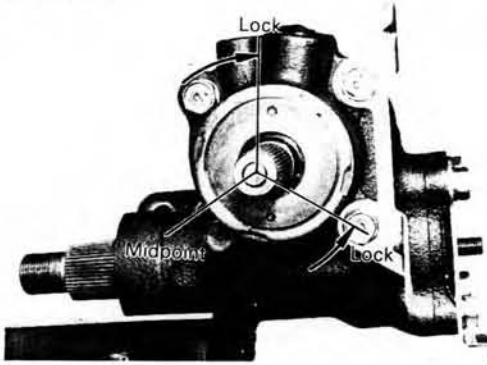
Fig. 8-405



Tighten the end cover diagonally and evenly in two or three rotations.

**Tightening torque: 4.0–5.5 kg-m
(29–39 ft-lb)**

Fig. 8-406



Adjust the cross shaft preload.

1. Set worm shaft to midpoint position. Determine total number of the worm shaft turns and return from full lock by half that number.

Fig. 8-407



2. Insert SST into the serrated section of the worm shaft.

Turn the adjusting screw, and measure preload with a torque meter.

SST [09616-00010]

Preload (starting):

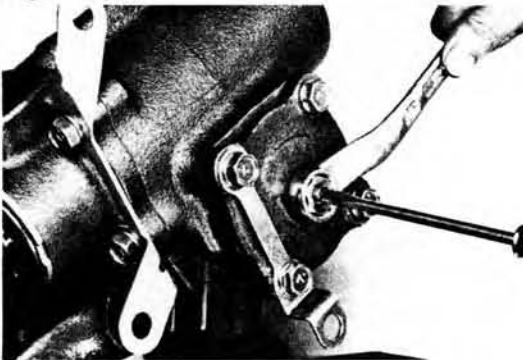
Worm shaft preload plus
 2 – 3 kg-cm
 (1.8 – 2.6 in.-lb)

Fig. 8-408



3. Use a new seal washer.

Fig. 8-409



4. Tighten the lock nut.

Tightening torque:
 4.0 – 5.5 kg-m
 (29 – 39 ft-lb)

Fig. 8-410



5. Recheck the preload.
Check to see that both the right and left
rotations are identical.
SST [09616-00010]

Fig. 8-411



6. Stake at three points.

INSTALLATION

Install the parts in the numerical order shown in the figure.

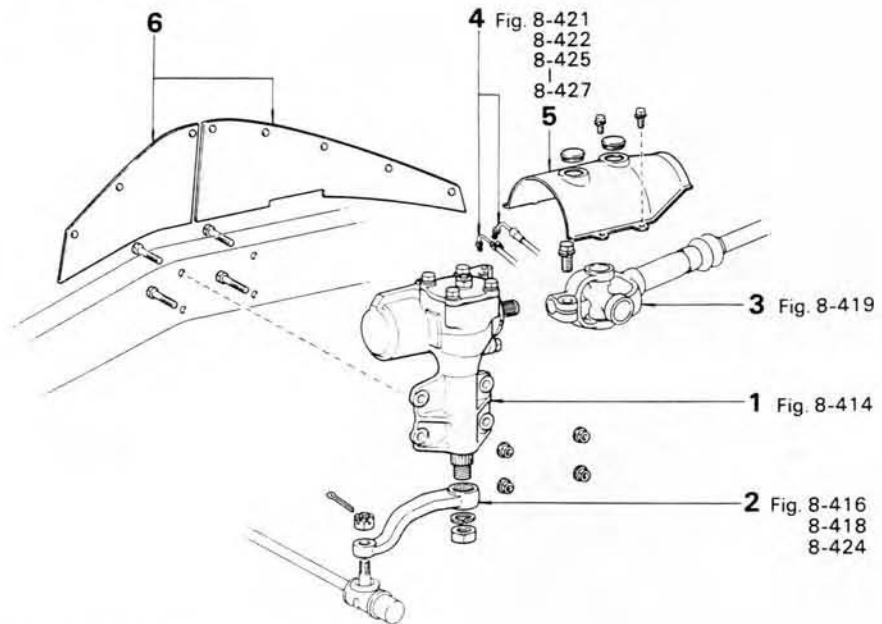
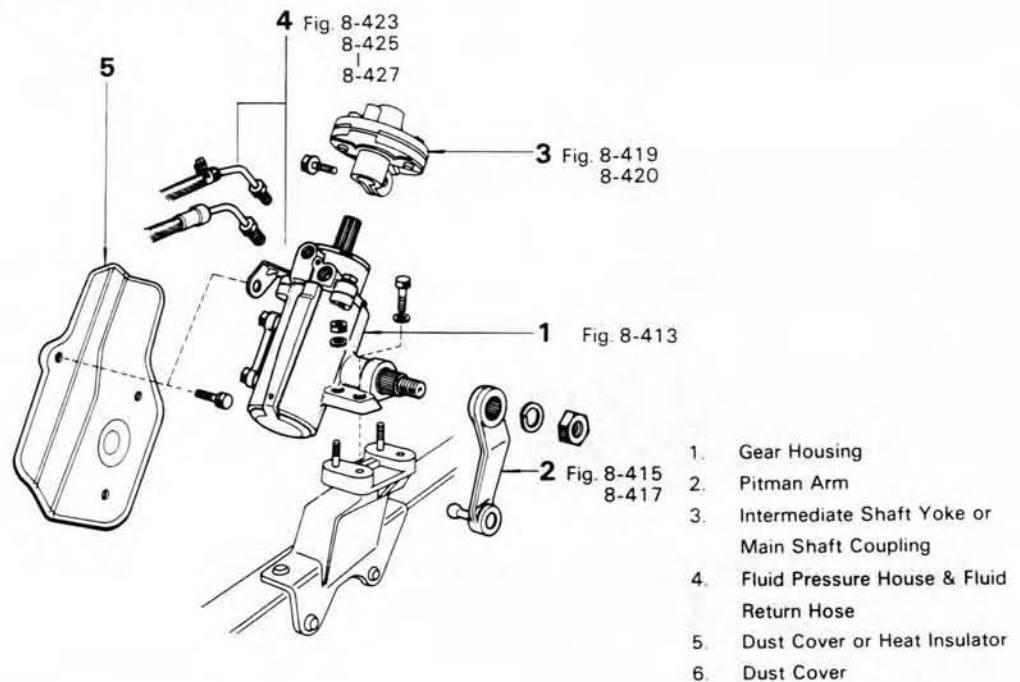
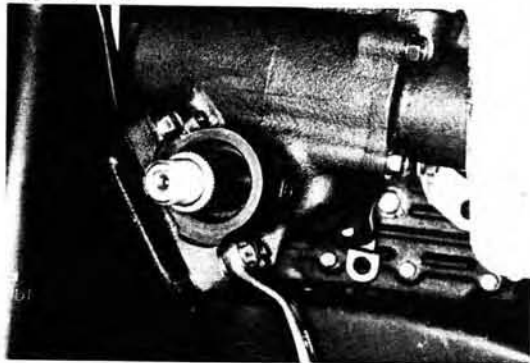
Fig. 8-412**FJ, HJ6 — Series****FJ, BJ, HJ4 — Series**

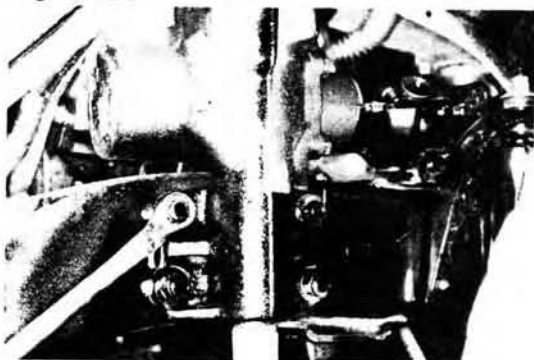
Fig. 8-413



Tighten the gear housing set bolts and nuts.

**Tightening torque: 5.5 – 8.8 kg-m
(40 – 63 ft-lb)**

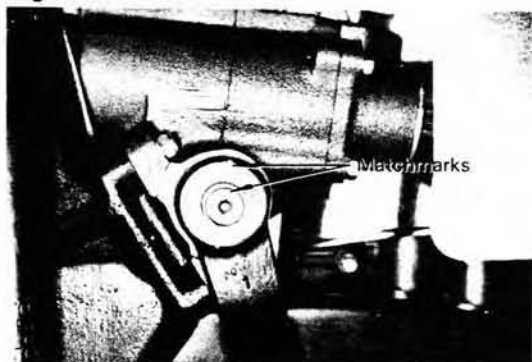
Fig. 8-414



Tighten the gear housing set bolts and nuts.

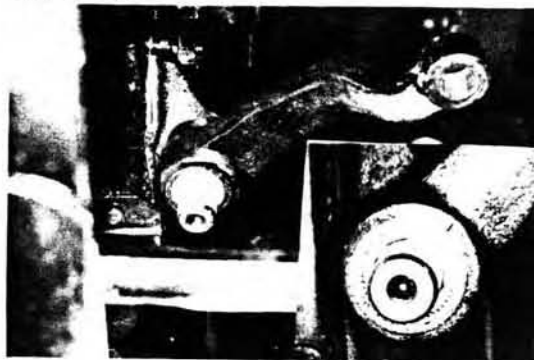
**Tightening torque: 5.5 – 8.8 kg-m
(40 – 63 ft-lb)**

Fig. 8-415



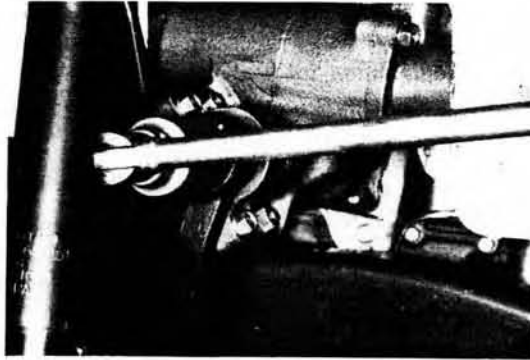
Align the matchmarks on the pitman arm and the cross shaft.

Fig. 8-416



Align the matchmarks on the pitman arm and the cross shaft.

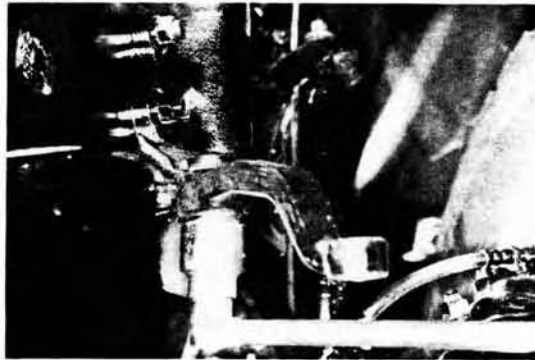
Fig. 8-417



Tighten the pitman arm set nut.

Tightening torque:**16.5 – 19.5 kg-m
(120 – 141 ft-lb)**

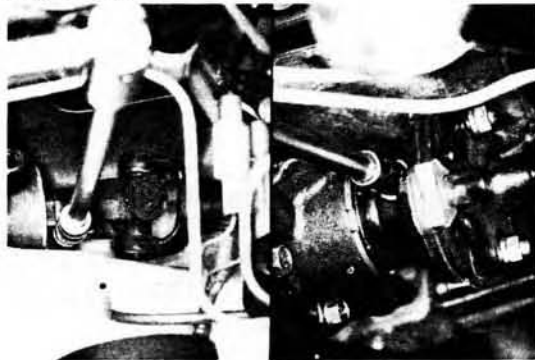
Fig. 8-418



Tighten the pitman arm set nut.

Tightening torque:**16.5 – 19.5 kg-m
(120 – 141 ft-lb)**

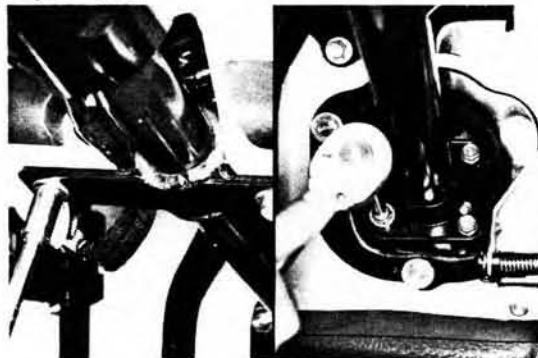
Fig. 8-419



Tighten the coupling set bolt.

**Tightening torque: 3.0 – 4.5 kg-m
(22 – 32 ft-lb)**

Fig. 8-420



Install the steering column tube.

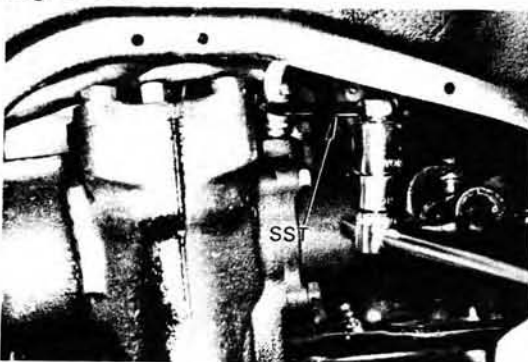
Fig. 8-421



Connect the pressure hose with SST.
SST [09631-22020]

Tightening torque: 4.0 – 5.0 kg-m
(29 – 36 ft-lb)

Fig. 8-422



Connect the pressure hose with SST.
SST [09631-22020]

Tightening torque: 4.0 – 5.0 kg-m
(29 – 36 ft-lb)

Connect the return pipe with SST.
SST [09631-22020]

Tightening torque: 3.2 – 4.2 kg-m
(24 – 30 ft-lb)

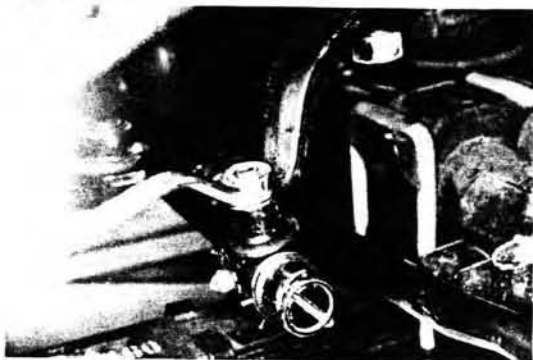
Fig. 8-423



Connect the return hose with SST.
SST [09631-22020]

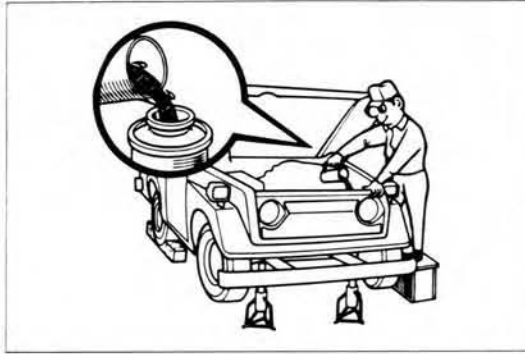
Tightening torque: 3.2 – 4.2 kg-m
(24 – 30 ft-lb)

Fig. 8-424



Connect the relay rod.

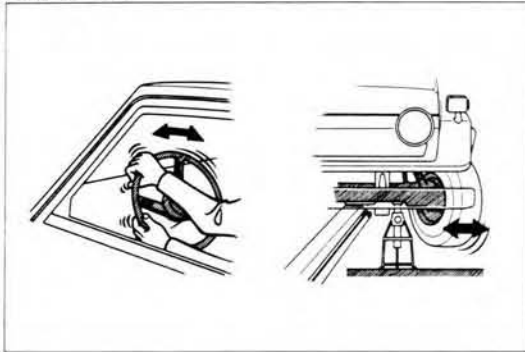
Fig. 8-425



Fill with fluid.

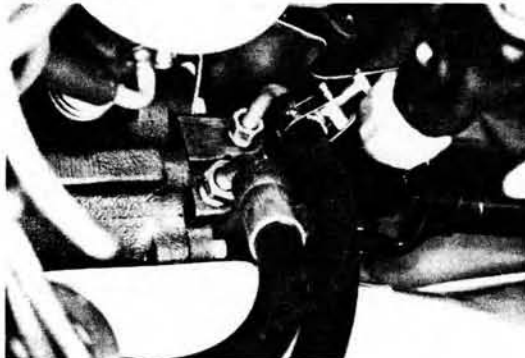
Fluid: ATF type Dexron
Capacity: Gear housing 330 cc
(20.1 cu in.)

Fig. 8-426



Bleed the system.

Fig. 8-427



Boost the fluid pressure to check for fluid leakage.