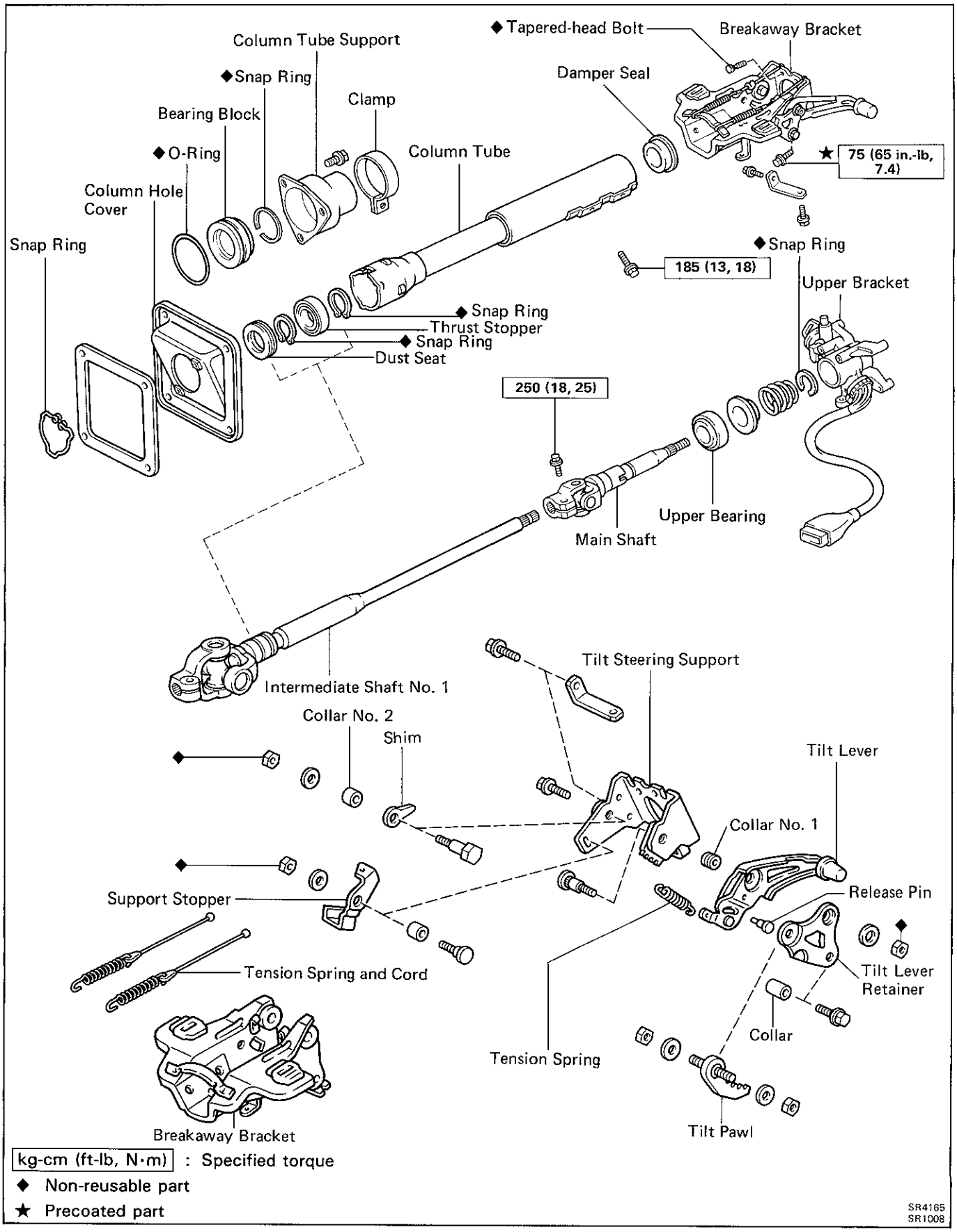
Tilt Steering Column

COMPONENTS

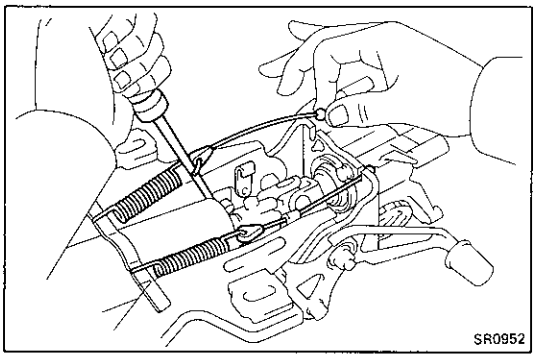


kg-cm (ft-lb, N·m) : Specified torque

◆ Non-reusable part

★ Precoated part

SR4165
SR1008



DISASSEMBLY OF STEERING COLUMN

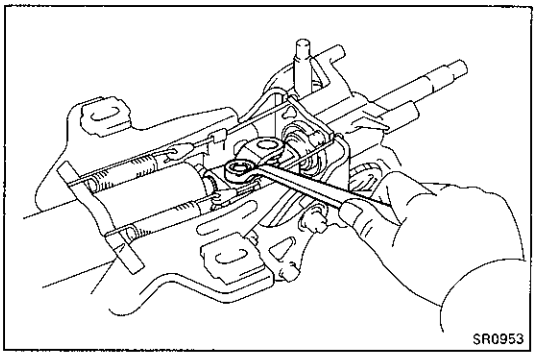
(See page SR-9)

1. REMOVE TENSION SPRINGS AND CORDS

(a) Fully tilt the main shaft upward.

(b) Release the cord from the hook.

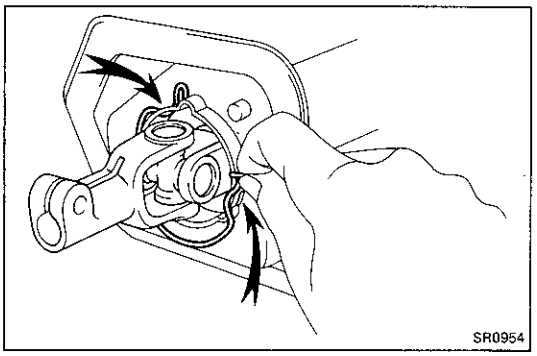
(c) Using a screwdriver, pry out the cord tip and remove the spring and cord.



2. DISCONNECT INTERMEDIATE SHAFT FROM MAIN SHAFT

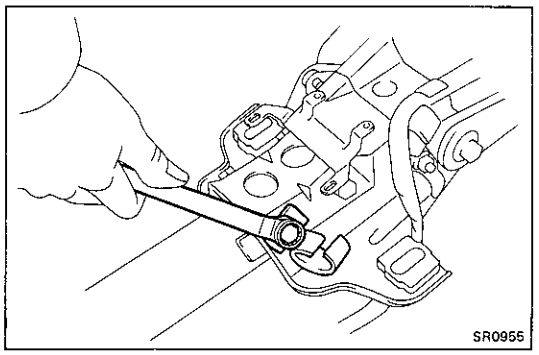
(a) Place matchmarks on the intermediate shaft and universal joint.

(b) Remove the bolt.



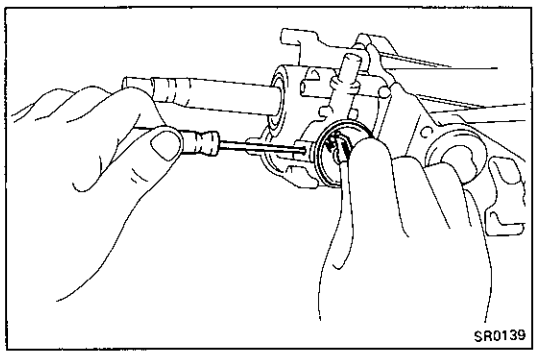
(c) Remove the snap ring.

(d) Pull out the intermediate shaft from the main shaft.



3. REMOVE COLUMN TUBE FROM BREAKAWAY BRACKET

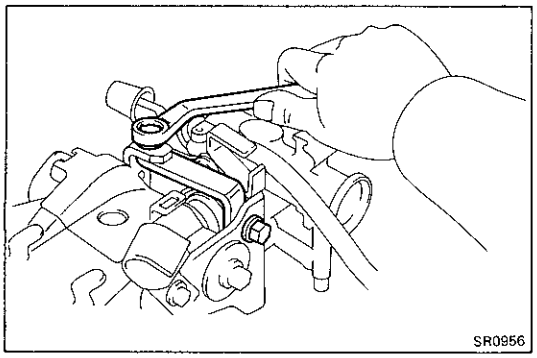
Remove the four bolts with a clamp.



4. REMOVE IGNITION KEY CYLINDER

(a) Place the ignition key at the "ACC" position.

(b) Push down the stop key with a thin rod, and pull out the key cylinder.



5. REMOVE UPPER BRACKET WITH MAIN SHAFT FROM BREAKAWAY BRACKET

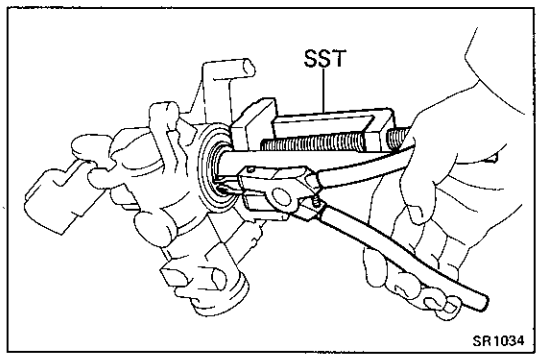
(a) Remove the support reinforcement with two bolts.

(b) Loosen the broken bolt by tapping the chisel.

(c) Remove the three bolts.

(d) Disconnect the upper bracket from the breakaway bracket.

6. REMOVE IGNITION SWITCH



7. REMOVE MAIN SHAFT FROM UPPER BRACKET

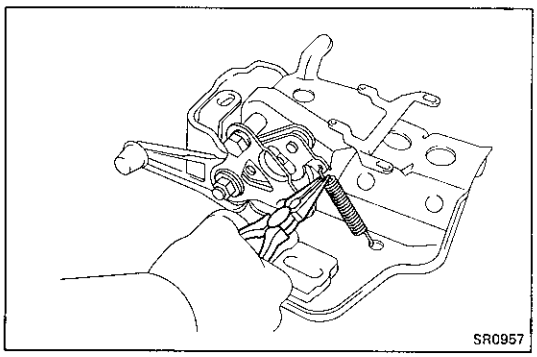
(a) Using SST, compress the main shaft and upper bracket.

SST 09950-20017

NOTICE: Do not tighten the SST too tightly.

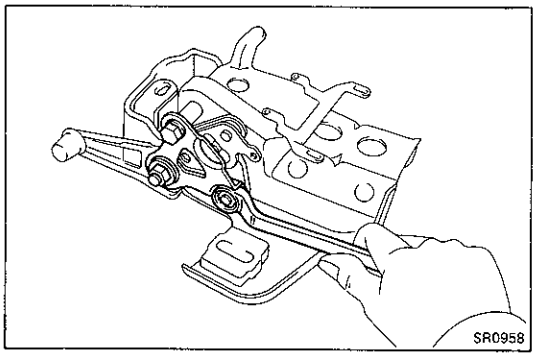
(b) Using snap ring pliers, remove the snap ring.

(c) Loosen SST and remove the main shaft, spring and collar from the upper bracket.



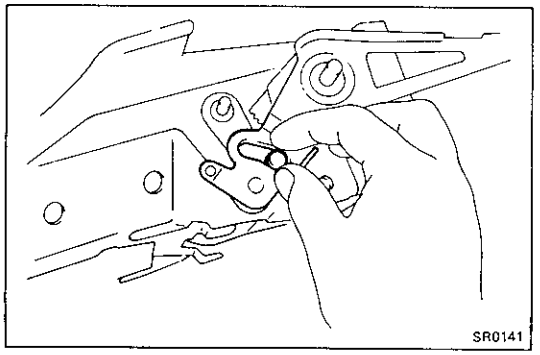
8. DISASSEMBLE TILT STEERING SUPPORT AND BREAKAWAY BRACKET

(a) Remove the tension spring.

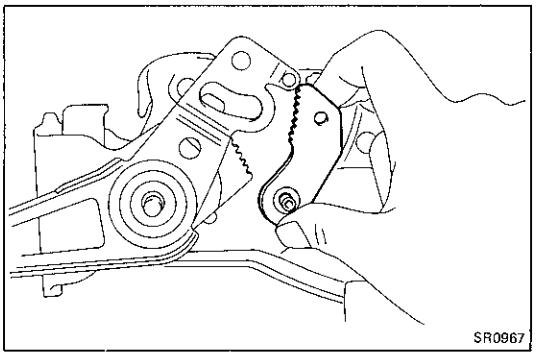


(b) Remove the two nuts and bolt.

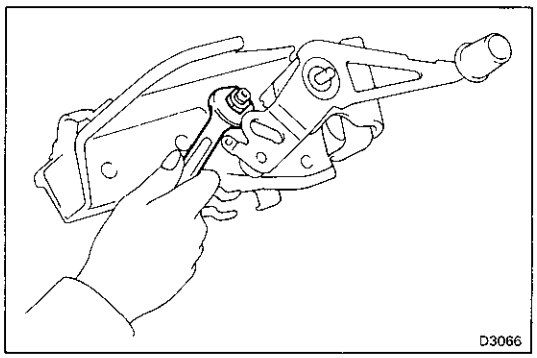
(c) Remove the tilt lever retainer and collar.



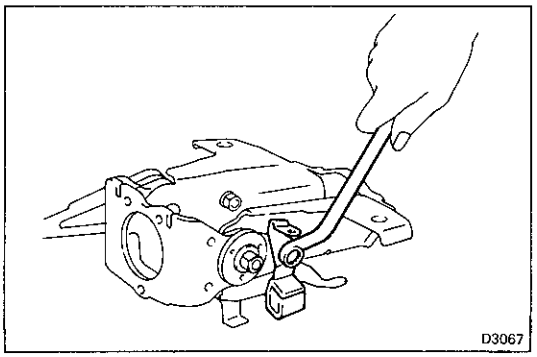
(d) Remove the release pin.



(e) Remove the tilt steering pawl.

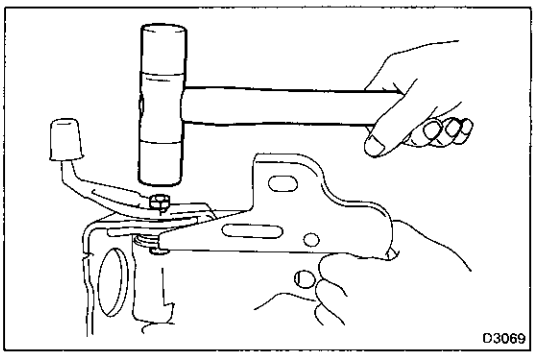


(f) Remove the tilt pawl set bolt.



(g) Remove the nut and support stopper bolt with a clamp.

(h) Remove the tilt lever set nut.

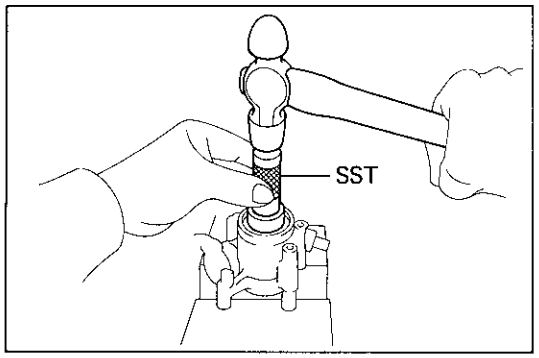


(i) Temporarily install the nut flat with the end of the bolt and tap it with a hammer.

(j) Remove the nut.

(k) Remove the collar and shim.

(l) Remove the another set bolt, nut and collar.

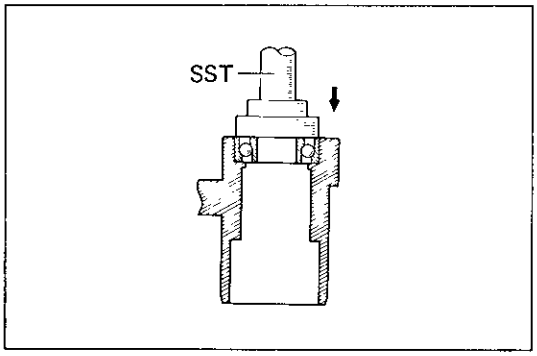


INSPECTION AND REPLACEMENT OF STEERING COLUMN

1. IF NECESSARY, REPLACE BEARING IN UPPER BRACKET

(a) Using SST and a hammer, remove the bearing.

SST 09620-30010 (09623-30010)

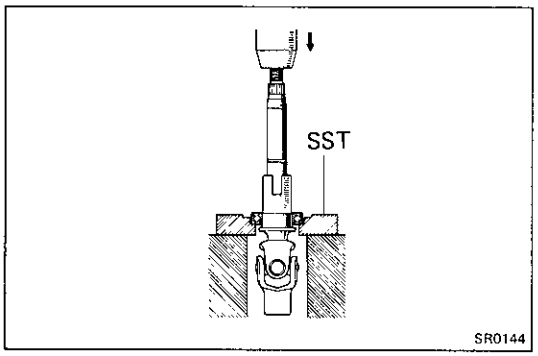


(b) Pack MP grease into the bearing.

(c) Using SST and a hammer, drive the bearing into the bracket.

SST 09620-30010 (09624-30010, 09631-00020)

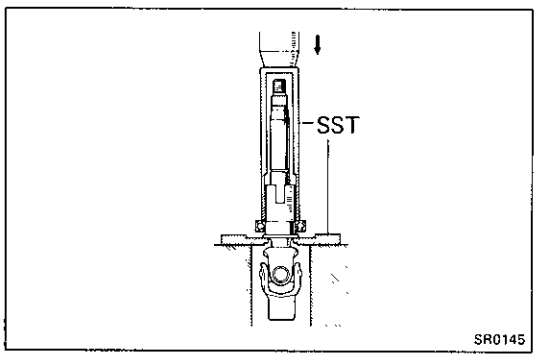
2. IF NECESSARY, REPLACE LOWER BEARING



(a) Using SST and a press, remove the lower bearing from the main shaft.

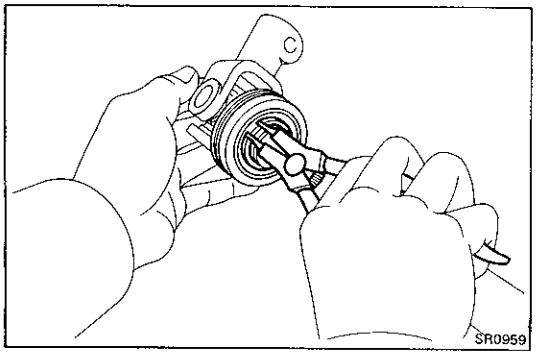
SST 09527-20011

(b) Pack MP grease into the bearing.



(c) Using SST and a press, assemble the lower bearing and main shaft.

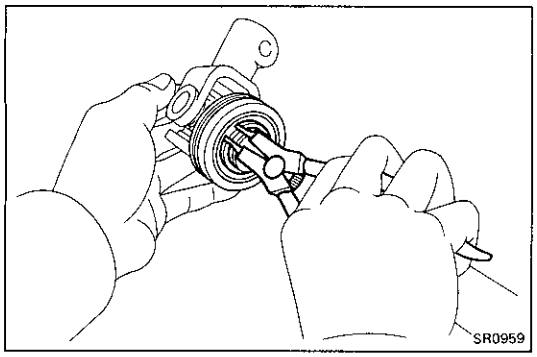
SST 09236-00101 (09237-00010) and 09612-22011



3. IF NECESSARY, REPLACE INTERMEDIATE SHAFT BEARING

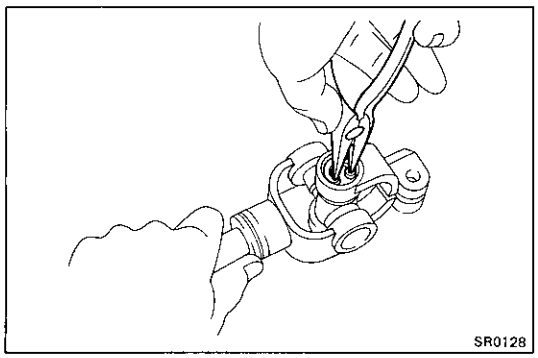
(a) Using snap ring pliers, remove the snap ring.

(b) Pull out the bearing from the intermediate shaft.



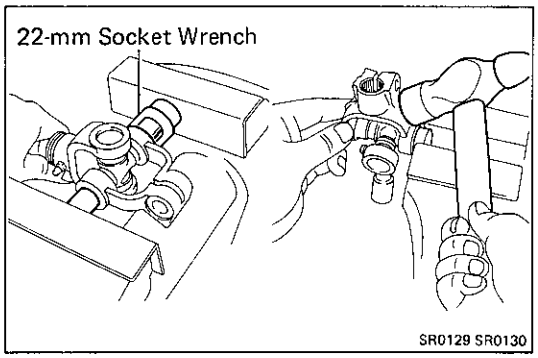
(c) Install the bearing.

(d) Using snap ring pliers, install the snap ring.



4. IF NECESSARY, REPLACE SPIDER BEARING

(a) Using needle-nose pliers, remove the four snap rings.



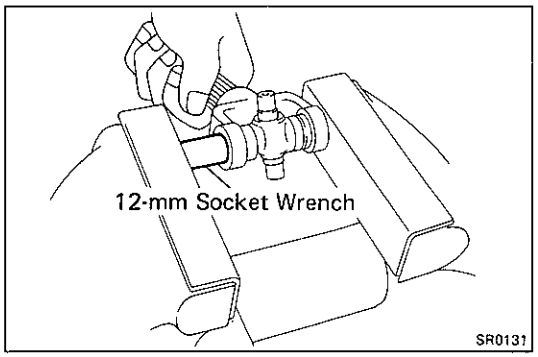
(b) Using a 12-mm and 22-mm socket wrench and vise, press out the yoke side outer race.

(c) Clamp the outer race in a vise and tap off the yoke with a hammer.

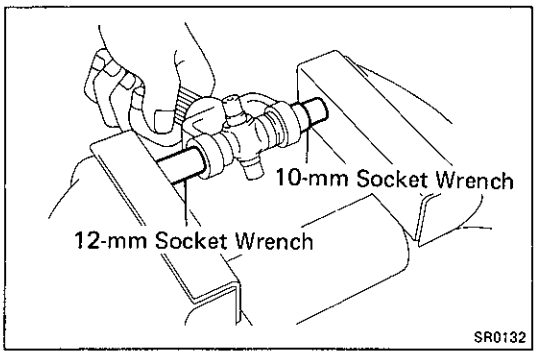
HINT: Remove the other bearing races in the same procedure.

(d) Apply molybdenum disulphide lithium base grease to the spider and bearings.

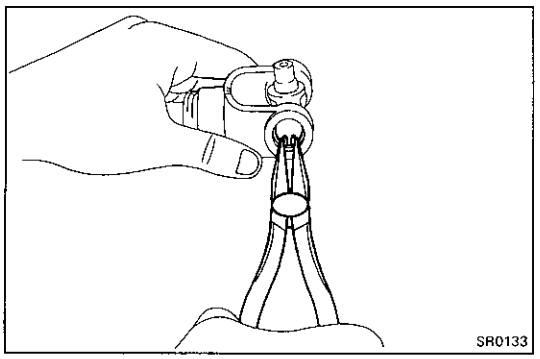
HINT: Be careful not to apply too much grease.



(e) Using a 12-mm socket wrench and vise, press the bearing outer race.



(f) Using a 10-mm and 12-mm socket wrench, adjust both bearings so that the snap ring grooves are at maximum and equal widths.



(g) Select two snap rings of the same thickness, which will allow 0 – 0.05 mm (0 – 0.0020 in.) of axial play.

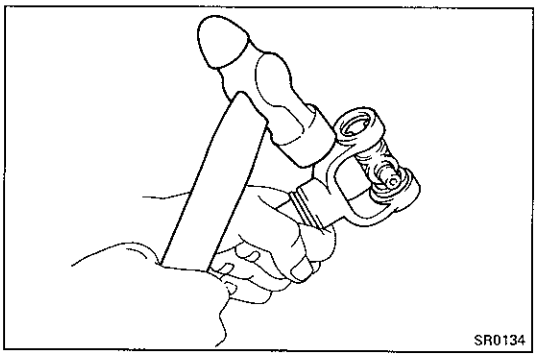
HINT: Do not reuse the snap rings.

Snap ring thickness

Mark	Thickness	mm (in.)
None	1.175 – 1.225	(0.0463 – 0.0482)
Brown	1.225 – 1.275	(0.0482 – 0.0502)
Blue	1.275 – 1.325	(0.0502 – 0.0522)

(h) Using needle-nose pliers, install the snap rings.

HINT: Install the bearing outer races in the yoke side using the same procedure.

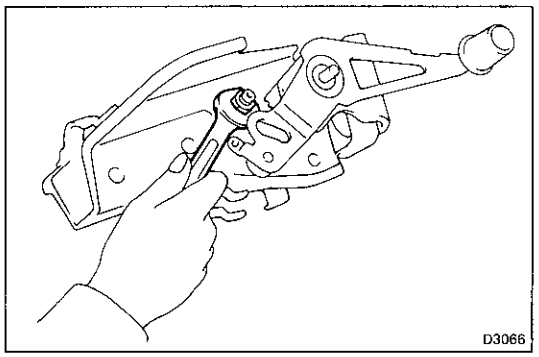


(i) Using a hammer, tap the shaft and yoke until the clearance between the bearing outer race and snap ring is zero.

(j) Check the spider bearing.

- Check that the spider bearing moves smoothly.
- Check the spider bearing axial play.

Bearing axial play: 0.05 mm (0.0020 in.) or less



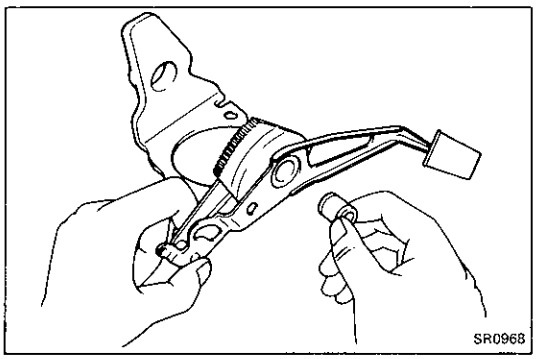
ASSEMBLY OF STEERING COLUMN

(See page SR-6)

1. COAT ALL RUBBING PARTS WITH MP GREASE

2. ASSEMBLE PAWL SET BOLT

   Torque: 185 kg-cm (13 ft-lb, 18 N·m)



3. ASSEMBLE TILT LEVER TO SUPPORT

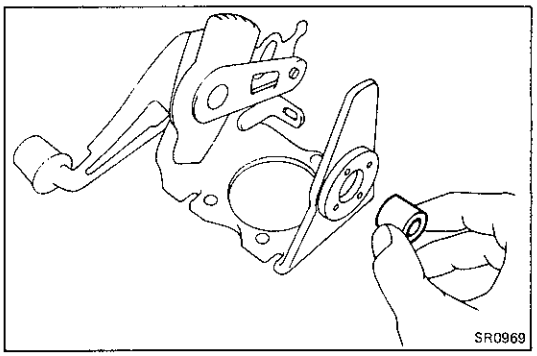
   (a) Select a collar No. 1 which will eliminate play.

Outer diameter	mm (in.)
17.989 – 17.996	(0.7082 – 0.7085)
17.996 – 18.003	(0.7085 – 0.7088)
18.003 – 18.010	(0.7088 – 0.7091)
18.010 – 18.017	(0.7091 – 0.7093)
18.017 – 18.024	(0.7093 – 0.7096)

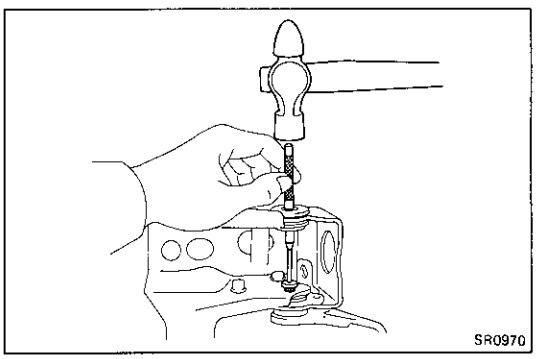
   (b) Install tilt lever and collar No. 1 to the support.

   (c) Select a collar No. 2 which will eliminate all play.

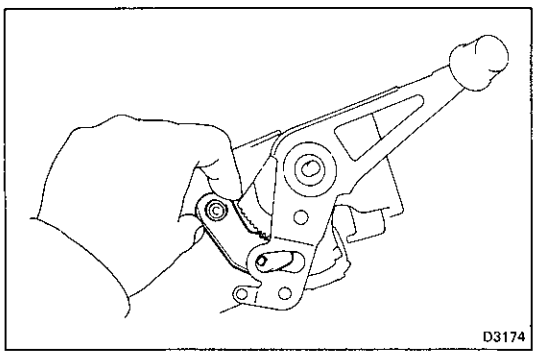
Outer diameter	mm (in.)
17.982 – 18.000	(0.7080 – 0.7087)
18.000 – 18.018	(0.7087 – 0.7094)



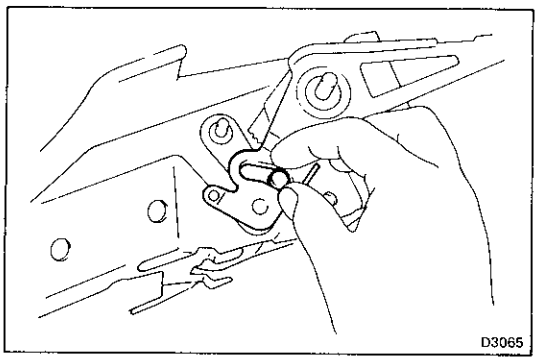
   (d) Install collar No. 2 to the support.



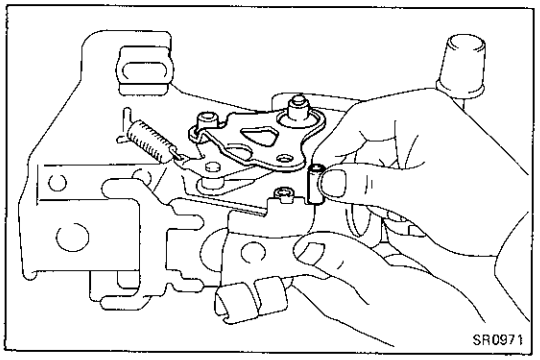
   (e) Drive in the serration bolt to the support.



   (f) Install the tilt pawl.

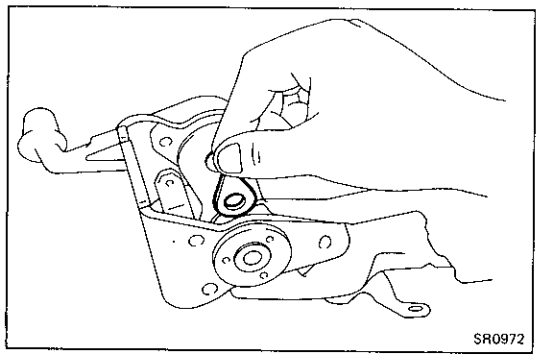


(g) Install the tension spring and the release pin.



(h) Assemble the collar and tilt lever retainer.

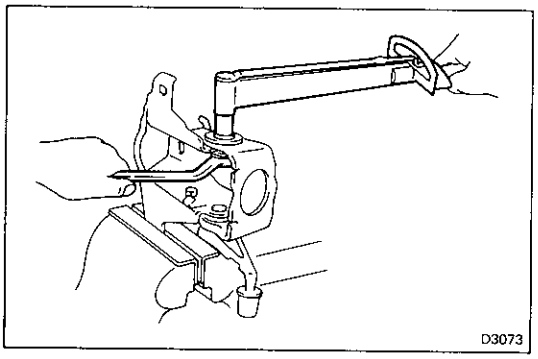
Torque: 185 kg-cm (13 ft-lb, 18 N·m)



4. INSTALL SHIM, BOLT AND NUT

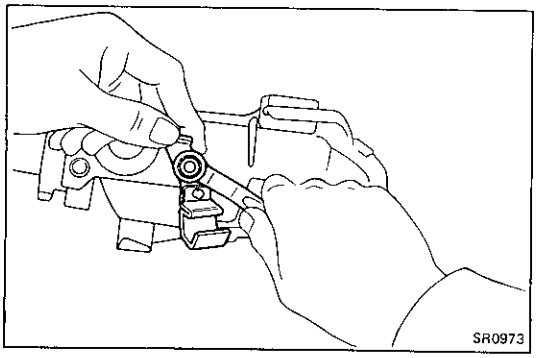
(a) Select a shim which fits snugly when pressed in by hand.

Mark	Thickness	mm (in.)
None	0.197 – 0.203	(0.0078 – 0.0080)
5	0.495 – 0.505	(0.0195 – 0.0199)
8	0.795 – 0.805	(0.0313 – 0.0317)
14	1.395 – 1.405	(0.0549 – 0.0553)
18	1.795 – 1.805	(0.0707 – 0.0711)



(b) Install the shim, bolt, washer and a lock nut.

Torque: 185 kg-cm (13 ft-lb, 18 N·m)

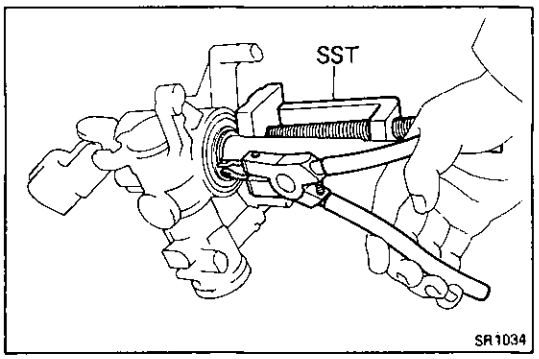


5. INSTALL TILT STEERING SUPPORT STOPPER BOLT

(a) Install the stopper bolt, bracket, washer and nut.

(b) Tighten the nut by holding the bracket as shown.

Torque: 100 kg-cm (7 ft-lb, 10 N·m)



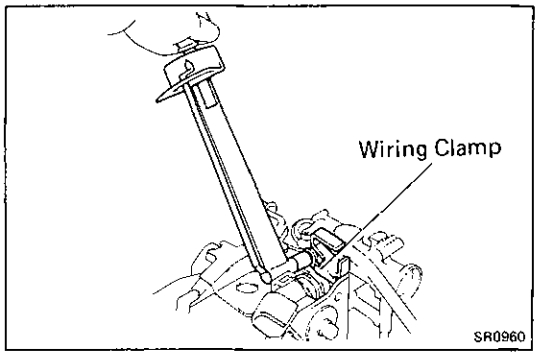
6. ASSEMBLE MAIN SHAFT AND UPPER BRACKET

(a) Assemble the collar, spring and main shaft, and insert them into the bracket.

(b) Using SST and snap ring pliers, install the snap ring by compressing the main shaft and upper bearing.

SST 09950-20017

NOTICE: Do not tighten the SST more than necessary.



7. ASSEMBLE UPPER BRACKET AND SUPPORT

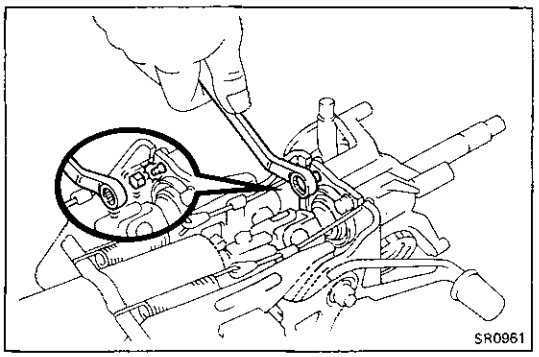
(a) Apply sealant to one or two threads of the bolt end.

Sealant: Part No. 08833-00070, Three bond 1324 or equivalent

HINT: This adhesive will not harden while exposed to air. It will act as a sealer or binding agent only when applied to threads, etc. and the air is cut off.

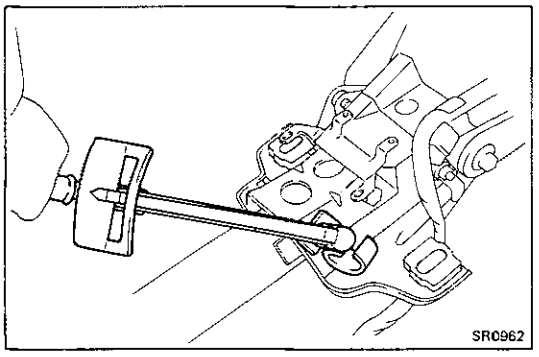
(b) Install the two bolts; one with a wiring clamp.

Torque: 75 kg-cm (65 in.-lb, 7.4 N·m)



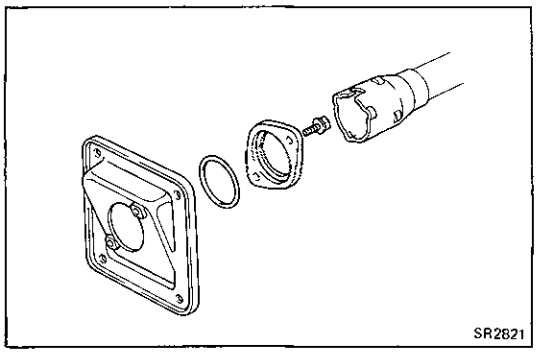
(c) Install the break down bolt and tighten until the bolt head breaks off.

(d) Install the support reinforcement.



8. INSTALL BREAKAWAY BRACKET TO COLUMN TUBE

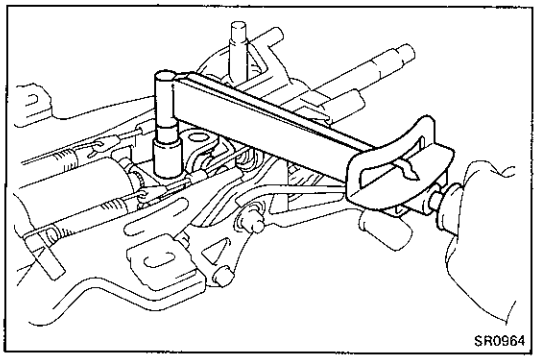
Torque: 185 kg-cm (13 kg-cm, 18 N·m)



9. INSTALL COLUMN HOLE COVER TO COLUMN TUBE

Install the following parts on the column.

- Hole cover plate
- New O-ring
- Column hole cover

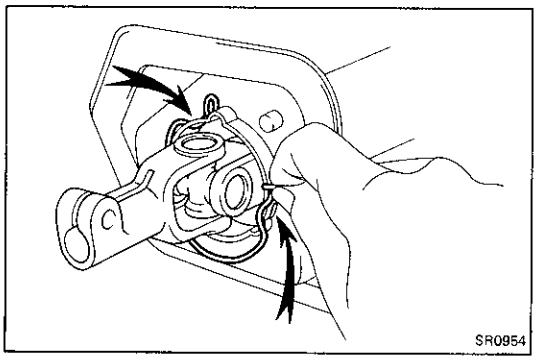


10. CONNECT MAIN SHAFT AND INTERMEDIATE SHAFT

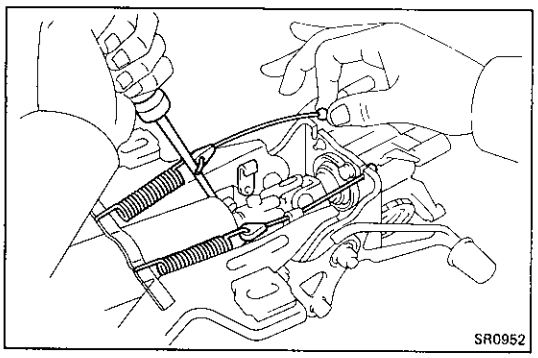
(a) Align the marks on the joint yoke and intermediate shaft and tighten the bolt.

Torque: 250 kg-cm (18 ft-lb, 25 N·m)

HINT: Be careful not to push out the damper seal while installing the intermediate shaft.



(b) Install the snap ring.



11. INSTALL TWO SPRINGS AND TWO CORDS

(a) Connect the tension spring and cord, and hook the spring to the hanger.

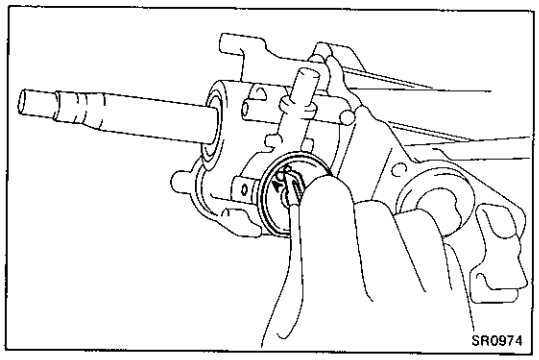
(b) Pry the spring end and hook the cord end to the support.

(c) Hook the cord to the cord guides.

12. CHECK OPERATION OF TILT STEERING LEVER AND SUPPORT

(a) Check that there is no axial or horizontal play at the end of the main shaft.

(b) Check that the main shaft locks securely in all six positions.



13. INSTALL IGNITION SWITCH

(a) Turn the ignition key plate to the "ACC" position and install the key cylinder into the upper bracket.

(b) Install the ignition switch.