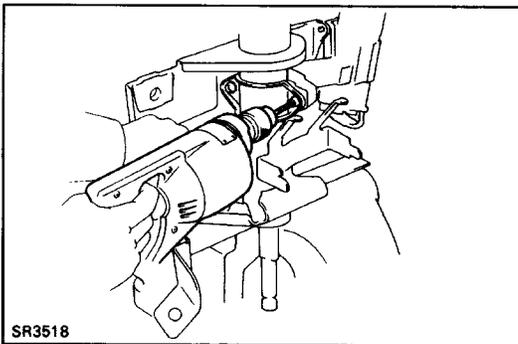


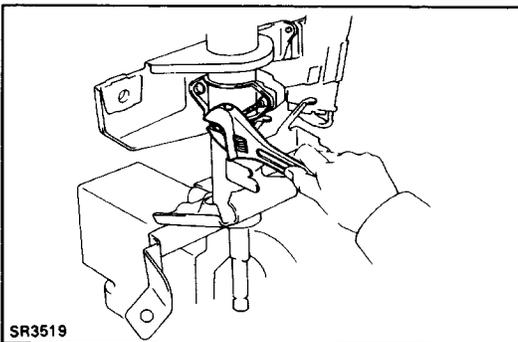
DISASSEMBLY OF STEERING COLUMN

1. REMOVE IGNITION KEY CYLINDER ILLUMINATION
2. REMOVE INTERMEDIATE SHAFT
3. REMOVE WIRING HARNESS CLAMP
4. (USA)
REMOVE PROTECTOR

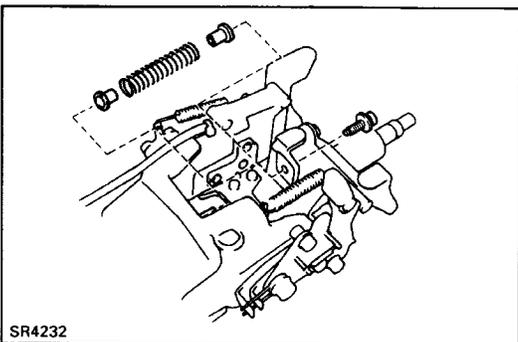


5. REMOVE UPPER BRACKET

- (a) Using a centering punch, mark the center of the tapered-head bolts.
- (b) Using a 3–4 mm (0.12–0.16 in.) drill, drill into the tapered-head bolts.

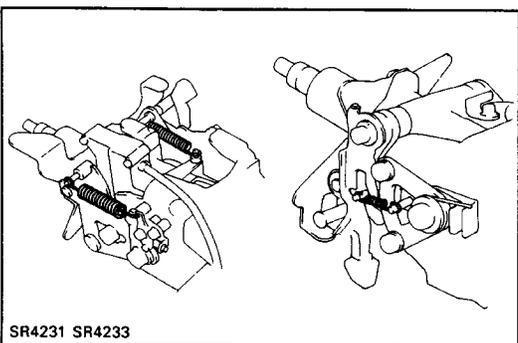


- (c) Using a screw extractor, remove the tapered-head bolts.
- (d) Remove the two bolts, and separate the upper bracket and the column tube.

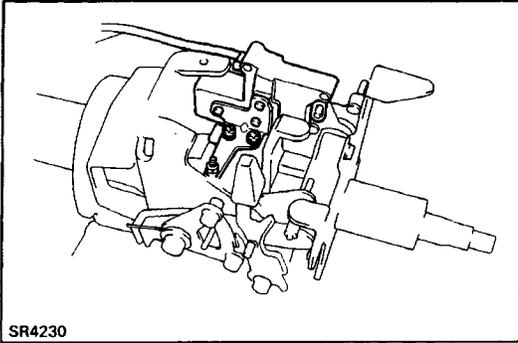


6. REMOVE COMPRESSION SPRING

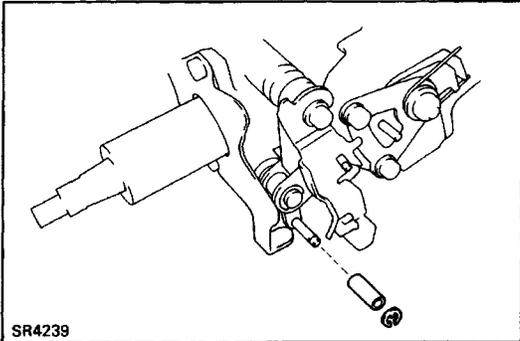
- (a) Using a torx wrench, remove the bolt and spring. Torx wrench: T30 (Part No. 09042-00010 or locally manufactured tool)
- (b) Remove the two bushings from the spring.



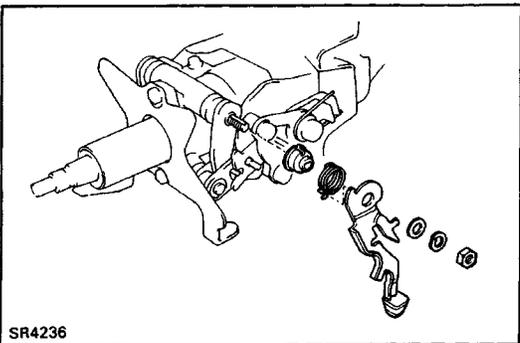
7. REMOVE THREE TENSION SPRINGS



SR4230

8. REMOVE TILT STEERING GEAR WITH MOTOR

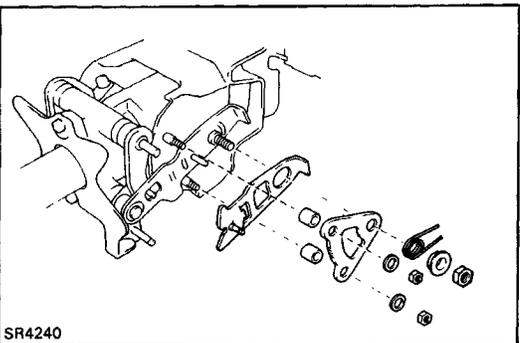
SR4239

9. REMOVE E-RING AND COLLAR

SR4236

10. REMOVE TILT MEMORY LEVER, TORSION SPRING AND SPACER

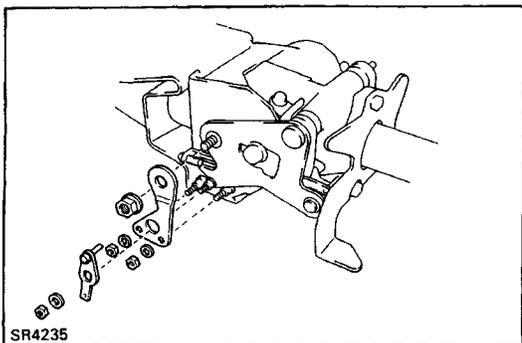
- (a) Remove the nut and two washers.
- (b) Remove the tilt memory lever, torsion spring and spacer.



SR4240

11. REMOVE SPACER, TORSION SPRING, NO. 1 AND NO. 2 TILT MEMORY PLATES AND COLLARS

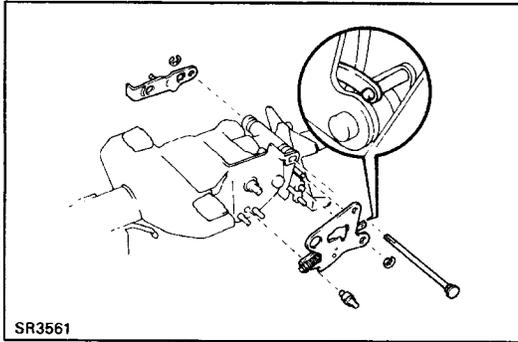
- (a) Remove the three nuts and two washers.
- (b) Remove the spacer, torsion spring, No. 1 and No. 2 tilt memory plates.
- (c) Remove the two collars.



SR4235

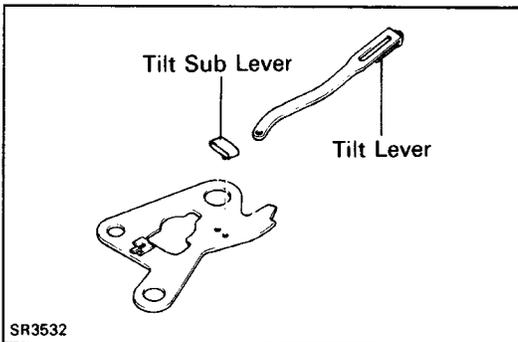
12. REMOVE TILT RELEASE LEVER AND TILT LEVER RETAINER

- (a) Remove the four nuts and three washers.
- (b) Remove the tilt release lever and tilt lever retainer.

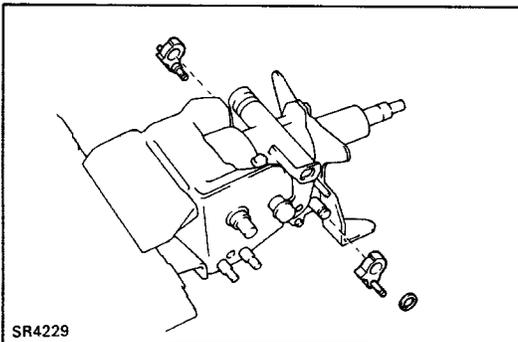


13. REMOVE BOLT, TILT LEVER RETAINERS AND TILT STEERING STOPPER

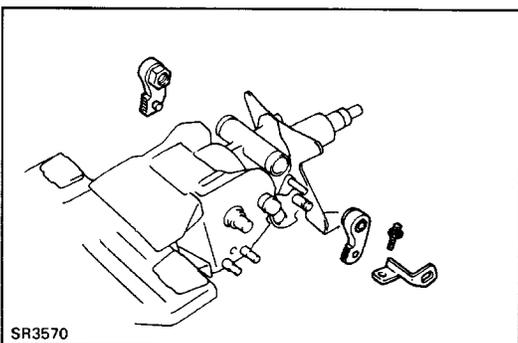
- (a) Remove the two E-rings.
- (b) Pull out the bolt.
- (c) Remove the two tilt lever retainers and tilt steering stopper.



- (d) Remove the tilt lever and tilt sub lever from the tilt lever retainer.

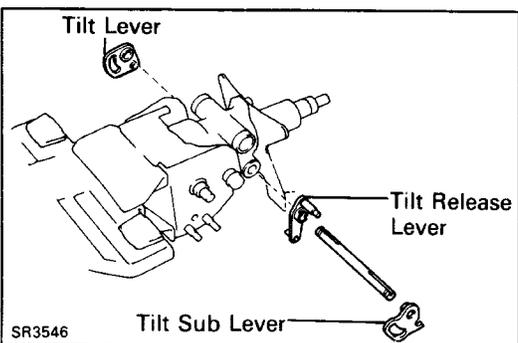


14. REMOVE SPACER AND PAWL STOPPERS



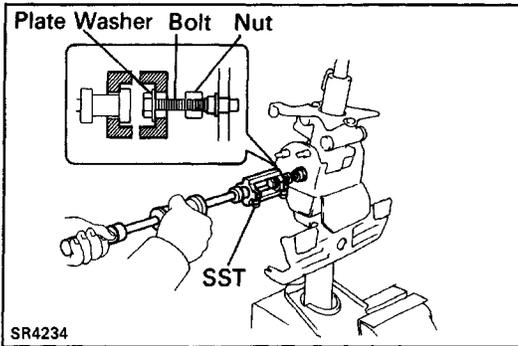
15. REMOVE TILT LEVER BRACKET AND TILT PAWLS

- (a) Remove the bolt and tilt lever bracket.
- (b) Remove the two tilt pawls.



16. REMOVE TILT LEVER, TILT SUB LEVER, TILT RELEASE LEVER AND TILT LEVER LOCK SHAFT

- (a) Remove the tilt lever, tilt sub lever, and tilt release lever.
- (b) Pull out the tilt lever lock shaft.



17. REMOVE UPPER COLUMN TUBE

(a) Set SST, the nut (10 mm diameter, 1.25 mm pitch), plate washer (36 mm outer diameter) and bolt (10 mm diameter, 1.25 mm pitch, 50 mm length) as shown.

And then remove the two tilt steering bolts.

SST 09910-00015 (09911-00011, 09912-00010)

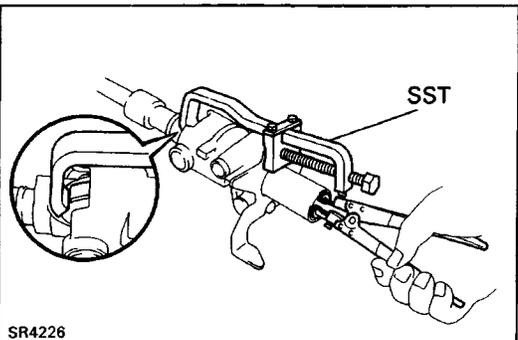
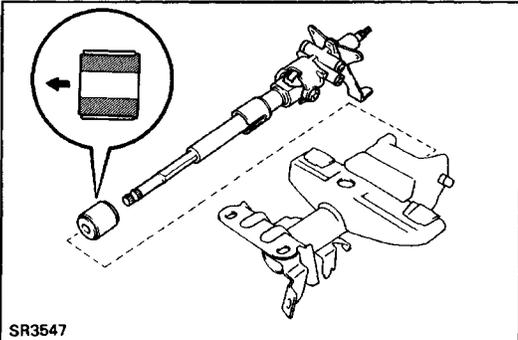
(Reference) Nut 90170-10004

Plate washer 90201-10201

Bolt 91111-51050

(b) Remove the upper column tube from the lower column tube.

(c) Remove the collar from the main shaft.



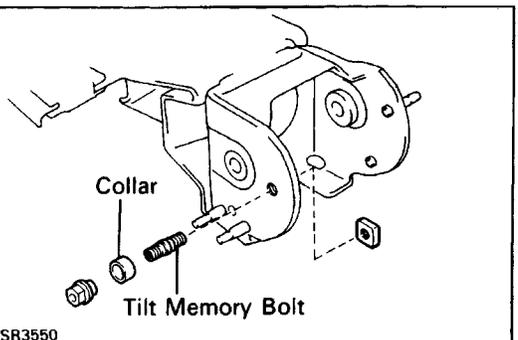
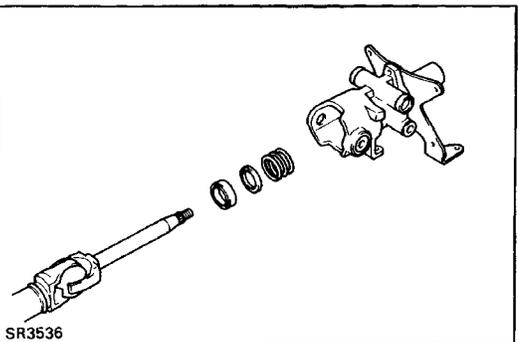
18. REMOVE MAIN SHAFT

(a) Using SST to compress the main shaft spring, remove the snap ring with snap ring pliers.

SST 09950-20017

(b) Remove the main shaft from the column tube.

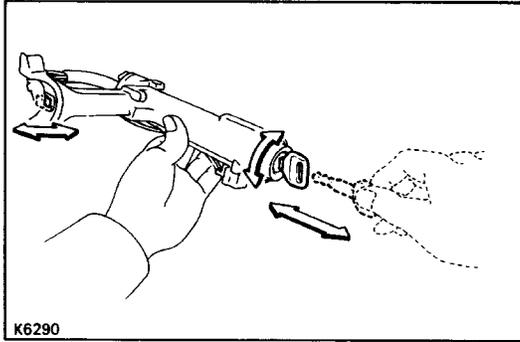
(c) Remove the spring, thrust collar and bearing.



19. REMOVE COLLAR AND TILT MEMORY BOLT

(a) Remove the nut and collar.

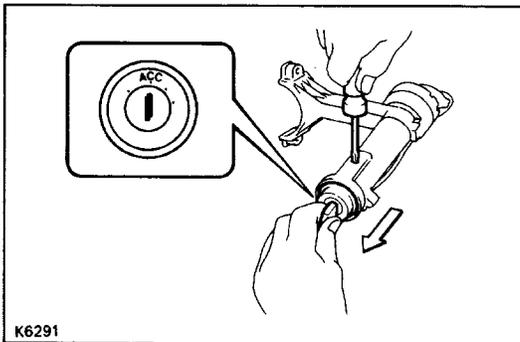
(b) Using a hexagon wrench, remove the tilt memory bolt and square nut.



INSPECTION AND REPLACEMENT OF STEERING COLUMN

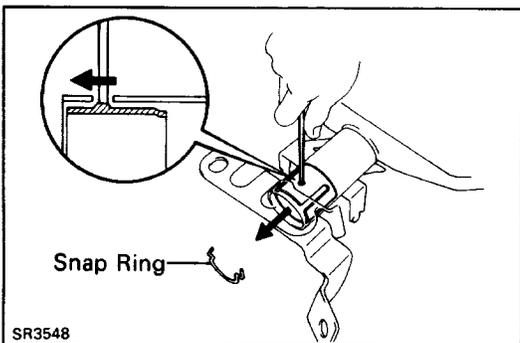
1. INSPECT KEY CYLINDER

Check that the steering lock mechanism operates properly.



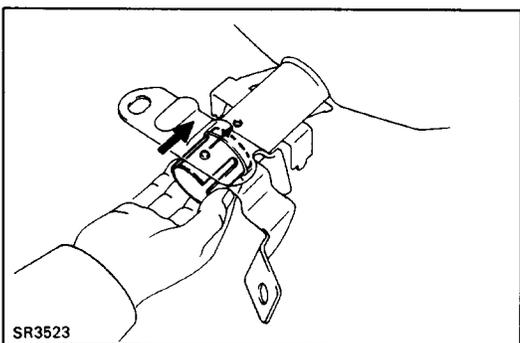
2. IF NECESSARY, REPLACE KEY CYLINDER

- (a) Place the ignition key at the ACC position.
- (b) Push down the stop pin with a thin rod, and pull out the key cylinder.
- (c) Make sure the ignition key is at the ACC position.
- (d) Install a new key cylinder.



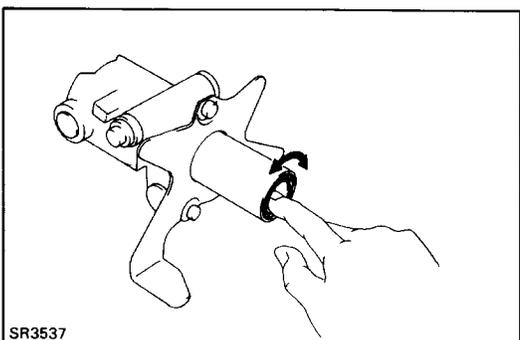
3. IF NECESSARY, REPLACE MAIN SHAFT BUSHING

- (a) Remove the snap ring.
- (b) Using a screwdriver, remove the bushing.



- (c) Align the holes of the tube and projections of a new bushing, and install the bushing to the column tube.

- (d) Install the snap ring.

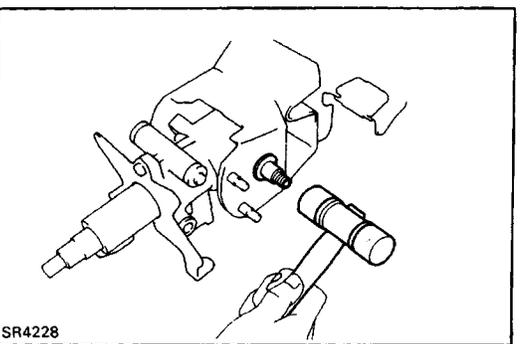
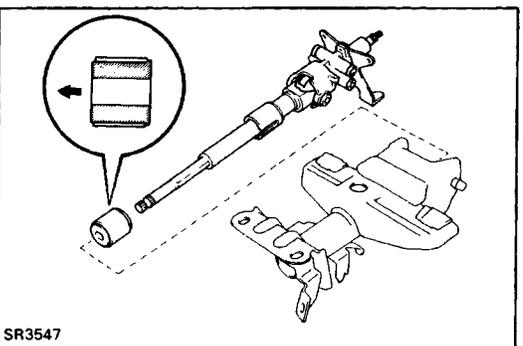
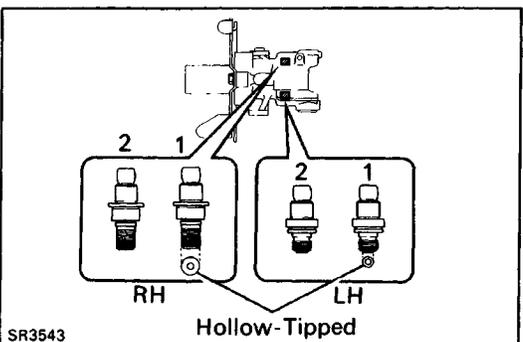
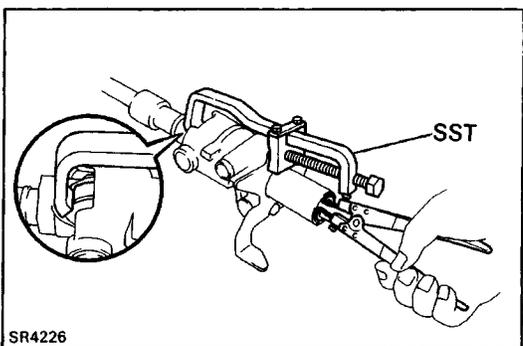
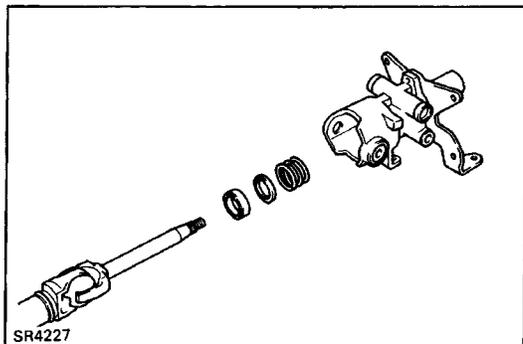


4. INSPECT UPPER BEARING

Check the upper bearing rotation condition and check for abnormal noise.

5. INSPECT KEY INTERLOCK SOLENOID

(See page AT-182)



ASSEMBLY OF STEERING COLUMN

(See page SR-19)

1. APPLY MOLYBDENUM DISULPHID LITHIUM BASE GREASE (See page SR-19)

2. INSTALL MAIN SHAFT

(a) Install the bearing, thrust collar and spring to the main shaft.

(b) Install the main shaft into the upper column tube.

(c) Using SST to compress the main shaft spring, install the snap ring with snap ring pliers.

SST 09950-20017

3. SELECT TILT STEERING BOLTS

Select the bolt for the left or right side and then select the bolt for the other side as the left and right bolt have different shapes.

HINT: Select the bolt with the plain thread end when the upper column tube mark is 2, and the bolt with the hollow-tipped thread end when the mark is 1 .

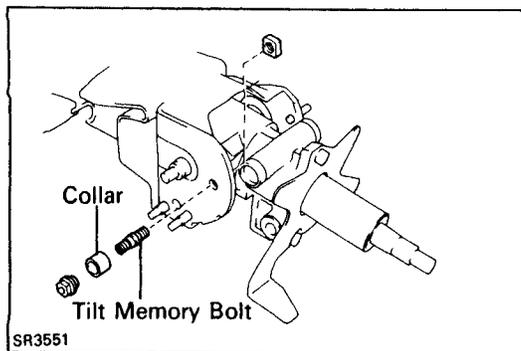
4. INSTALL MAIN SHAFT WITH UPPER COLUMN TUBE

(a) Install the collar to the main shaft.

(b) Install the main shaft with the upper column tube into the lower column tube.

(c) Using a plastic hammer, drive in the tilt steering bolts.

NOTICE: Be careful not to mis-install the left and right bolts.



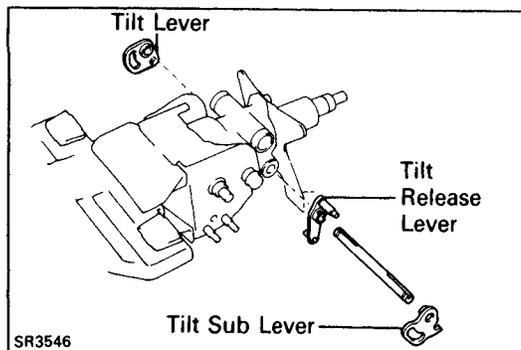
5. INSTALL TILT MEMORY BOLT AND COLLAR

- (a) Install the square nut and tilt memory bolt.
- (b) Using a hexagon wrench, torque the tilt memory bolt.

Torque: 6.4 N-m (65 kgf-cm, 56 in.-lbf)

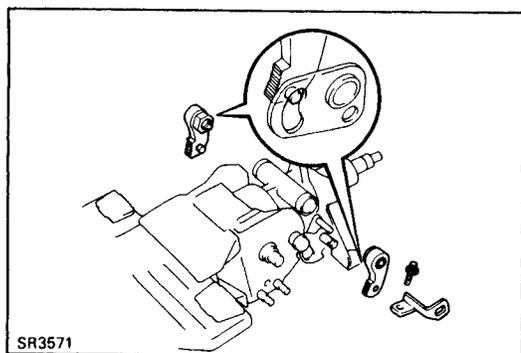
- (c) Install the collar.
- (d) Temporarily install the nut.

HINT: Torque the nut after selecting the collar in step 16.



6. INSTALL TILT LEVER LOCK SHAFT, TILT RELEASE LEVER, TILT SUB LEVER AND TILT LEVER

- (a) Install the tilt lever lock shaft into the upper column tube.
- (b) Install the tilt release lever.
- (c) Install the tilt lever and tilt sub lever.

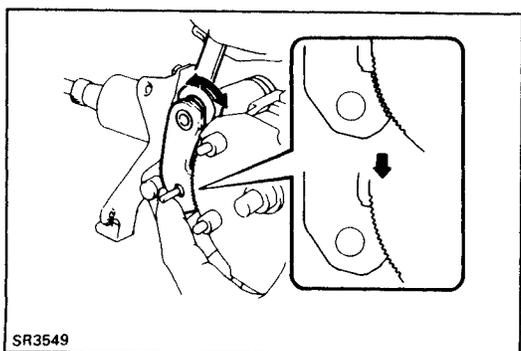


7. INSTALL TILT PAWLS AND TILT LEVER BRACKET

- (a) Install the two tilt pawls to the upper column tube.
- HINT: Install the pawl pin into the long hole of the tilt lever and tilt sub lever.

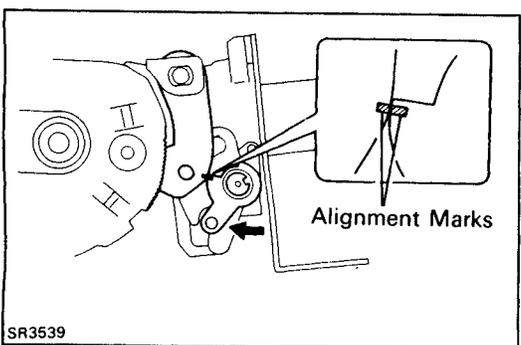
- (b) Install the tilt lever bracket.
- (c) Install and torque the tilt lever bracket installation bolt.

Torque: 2.9 N-m (30 kgf-cm, 26 in.-lbf)



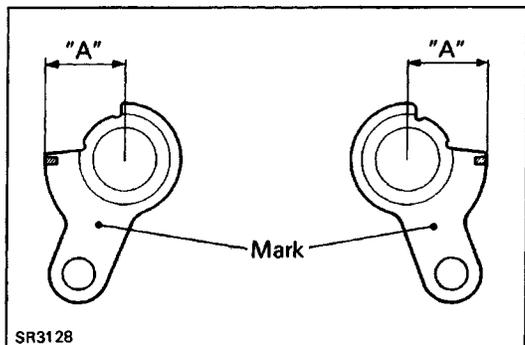
8. ENGAGE AND ADJUST TILT PAWL

- (a) Engage the tilt sub lever side pawl to the center of the ratchet.
- (b) While turning the tilt lever side collar, completely engage the tilt lever side pawl to the ratchet.



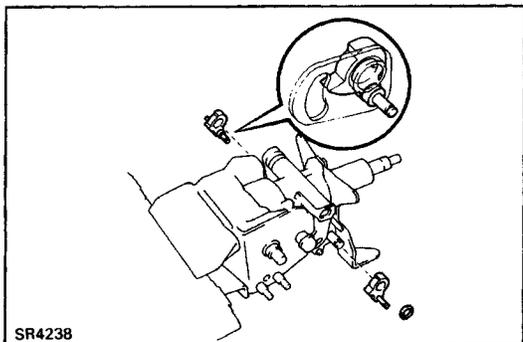
9. SELECT PAWL STOPPERS

- (a) With the tilt pawl and ratchet engaged, install two pawl stoppers.
- (b) Check that the alignment marks on the stopper and pawl align when the stopper is rotated to the pawl side.



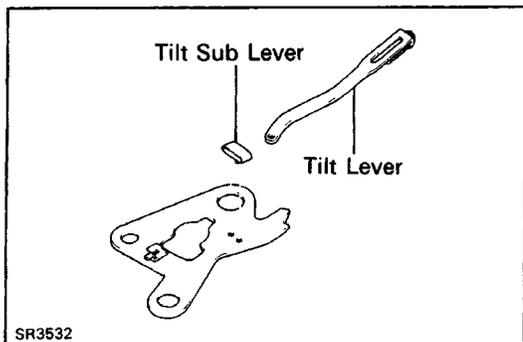
(c) If the alignment marks do not align, select pawl stoppers according to the following table.

Tilt lever side	Tilt sub lever side	Dimension "A" mm (in.)
1	A	12.68 - 12.74 (0.4992 - 0.5016)
2	B	12.61 - 12.67 (0.4965 - 0.4988)
3	C-	12.54 - 12.60 (0.4937 - 0.4961)
4	D	12.47 - 12.53 (0.4909 - 0.4933)
5	E	12.40 - 12.46 (0.4882 - 0.4906)
6	F	12.33 - 12.39 (0.4854 - 0.4878)
7	G	12.26 - 12.32 (0.4827 - 0.4850)



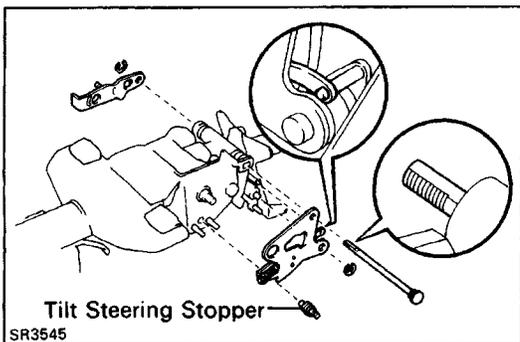
(d) After selecting the stoppers, check that on both sides the pawl and ratchet are fully engaged.

10. INSTALL PAWL STOPPERS AND SPACER



11. INSTALL TILT STEERING STOPPER, TILT LEVER RETAINERS AND BOLT

(a) Install the tilt sub lever and tilt lever to the tilt lever retainer.

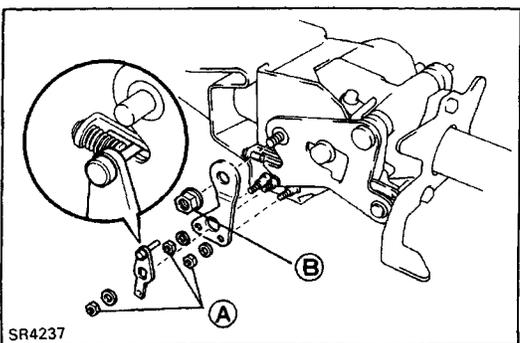


(b) Install the tilt steering stopper and two tilt lever retainers.

(c) Install the bolt through the tilt lever retainer, tilt lever bracket and tilt pawls.

HINT: Install the bolt so that the smooth part on the opposite side to the thread is facing upward.

(d) Install the two E-rings.



12. INSTALL TILT LEVER RETAINER AND TILT RELEASE LEVER

(a) Install the tilt lever retainer and tilt release lever.

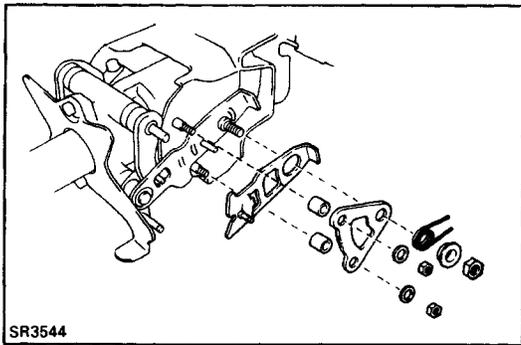
HINT: Install the release levee pin into the long hole of the tilt lever.

(b) Install the three washers and four nuts.

(c) Tighten the nuts.

Torque: (A) 2.9 N-m (30 kgf-cm, 26 in.-lbf)

(B) 15 N-m (150 kgf-cm, 11 ft-lbf)



SR3544

13. INSTALL COLLARS, NO. 1 AND NO. 2 TILT-MEMORY PLATES, TORSION SPRING AND SPACER

- Install the two collars.
- Install No. 1 and No. 2 tilt memory plates.
- Install the two washers and nuts.
- Torque the two nuts.

Torque: 5.9 N-m (60 kgf-cm, 52 in.-lbf)

- Install the torsion spring to the tilt steering bolt so that the spring clips onto No. 1 memory plate and the tilt lever retainer. Then install the spacer and nut to the steering bolt.

Torque: 15 N-m (150 kgf-cm, 17 ft-lbf)

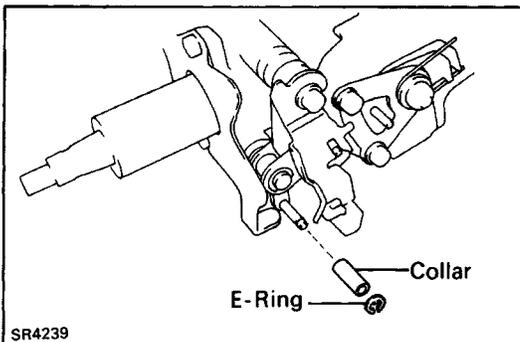
14. INSTALL SPACER, TORSION SPRING AND TILT MEMORY LEVER

- Install the spacer, torsion spring and tilt memory lever.
- Install two washers and nut.
- Check that on both sides the pawl and ratchet are fully engaged.
- Tighten the nut.

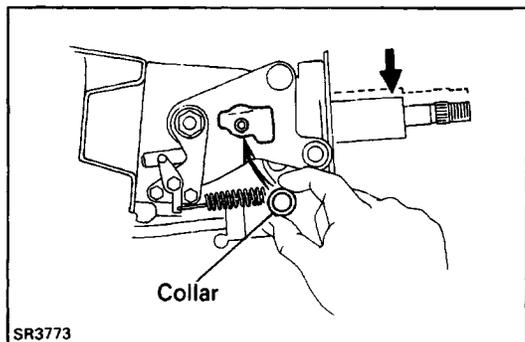
Torque: 5.9 N-m (60 kgf-cm, 52 in.-lbf)

- Check that the pawls rotate smoothly.

15. INSTALL COLLAR AND E-RING



SR4239



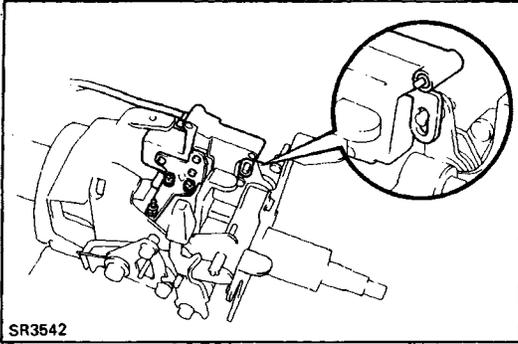
SR3773

16. SELECT COLLAR

- Put the steering column in tilt away position.
- Push the upper column tube downward and install the collar between the tilt memory bolt and tilt lever retainer.

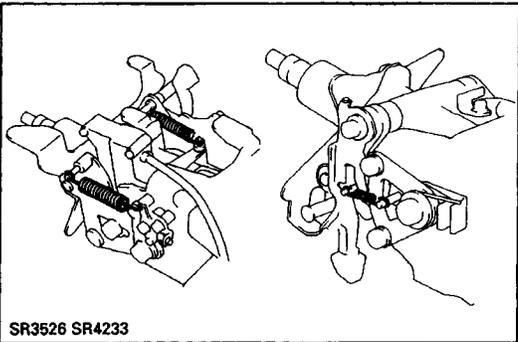
Select a collar with an outer diameter one rank below the collar which fits most tightly.

Color	Outer diameter	mm (in.)
Blue	12.75 - 12.85	(0.5020 - 0.5059)
Yellow-Plated	12.55 - 12.65	(0.4941 - 0.4980)
Pink-Plated	12.35 - 12.45	(0.4862 - 0.4902)
None	12.15 - 12.25	(0.4783 - 0.4823)
Black-Plated	11.95 - 12.05	(0.4705 - 0.4744)
Red	11.75 - 11.85	(0.4610 - 0.4665)
Green	11.55 - 11.65	(0.4547 - 0.4587)
Pink	11.25 - 11.35	(0.4429 - 0.4468)



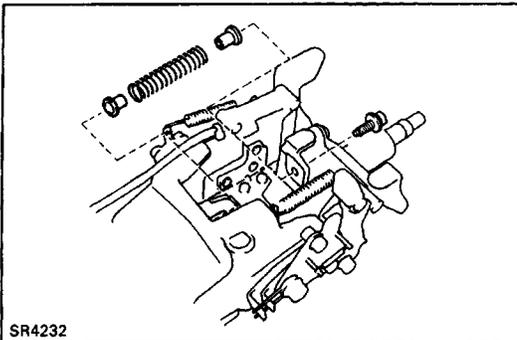
SR3542

- 17. INSTALL TILT STEERING GEAR WITH MOTOR**
install the tilt release lever pin into the long hole of the steering gear lever.



SR3526 SR4233

- 18. INSTALL THREE TENSION SPRINGS**



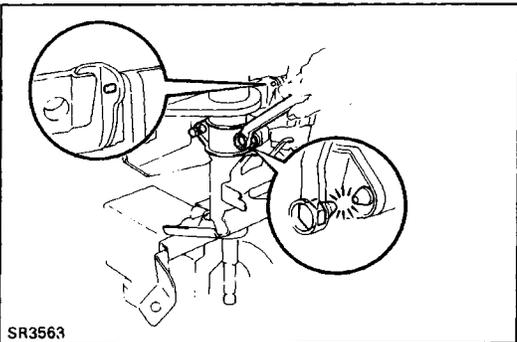
SR4232

19. INSTALL COMPRESSION SPRING

- (a) Install the two bushings to the spring.
(b) Install the spring and bolt.
(c) Using a torx wrench, tighten the bolt.

Torx wrench: T30 (Part No. 09042-00010 or locally manufactured tool)

Torque: 7.8 N-m (80 kgf-cm, 69 in.-lbf)



SR3563

20. INSTALL UPPER BRACKET

- (a) Install the upper bracket with two new tapered-head bolts.

HINT: Install the upper bracket pin into the column tube hole.

- (b) Tighten the tapered-head bolts until the bolt heads break off.

21. (USA)

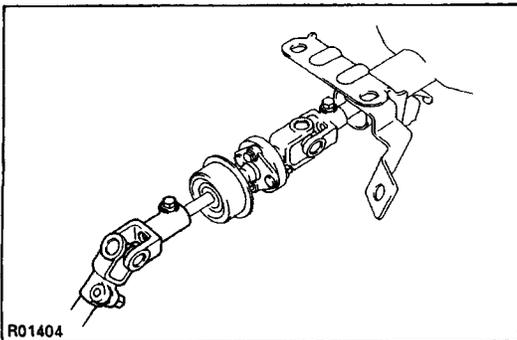
INSTALL PROTECTOR

22. INSTALL WIRING HARNESS CLAMP

23. INSTALL INTERMEDIATE SHAFT

Torque: 35 N-m (360 kgf-cm, 26 ft-lbf)

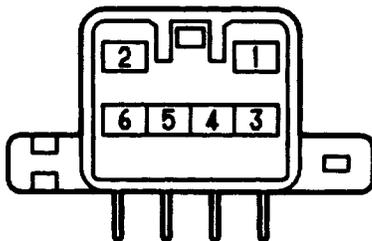
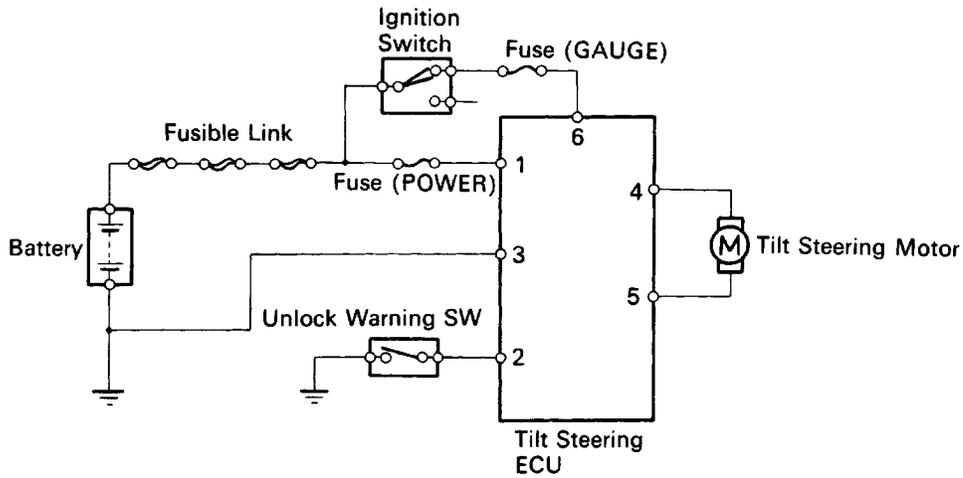
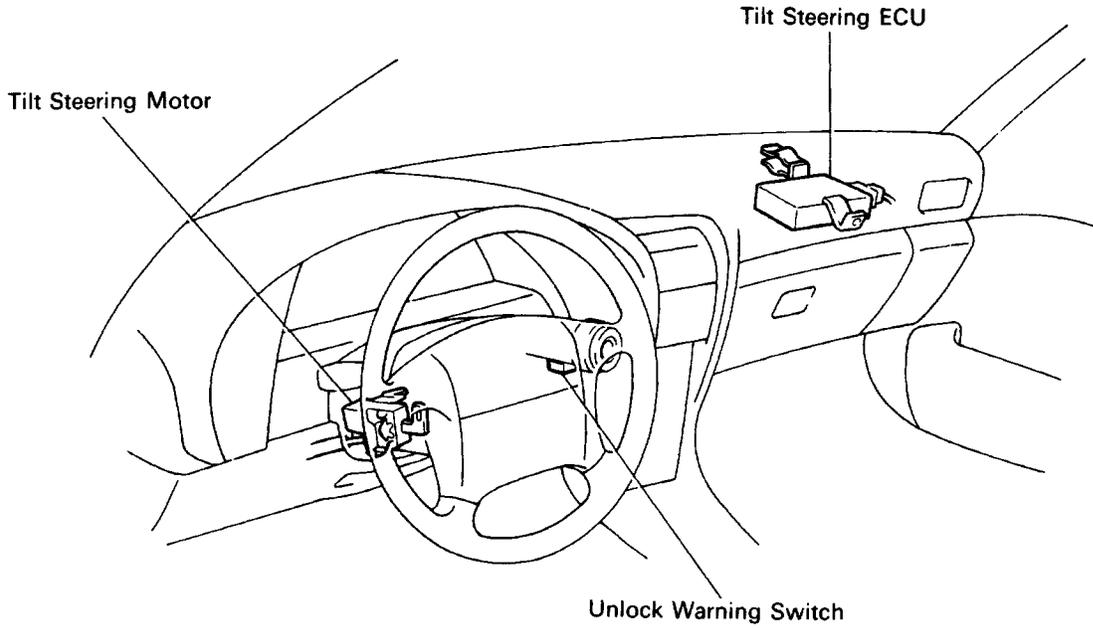
24. INSTALL IGNITION KEY CYLINDER ILLUMINATION



R01404

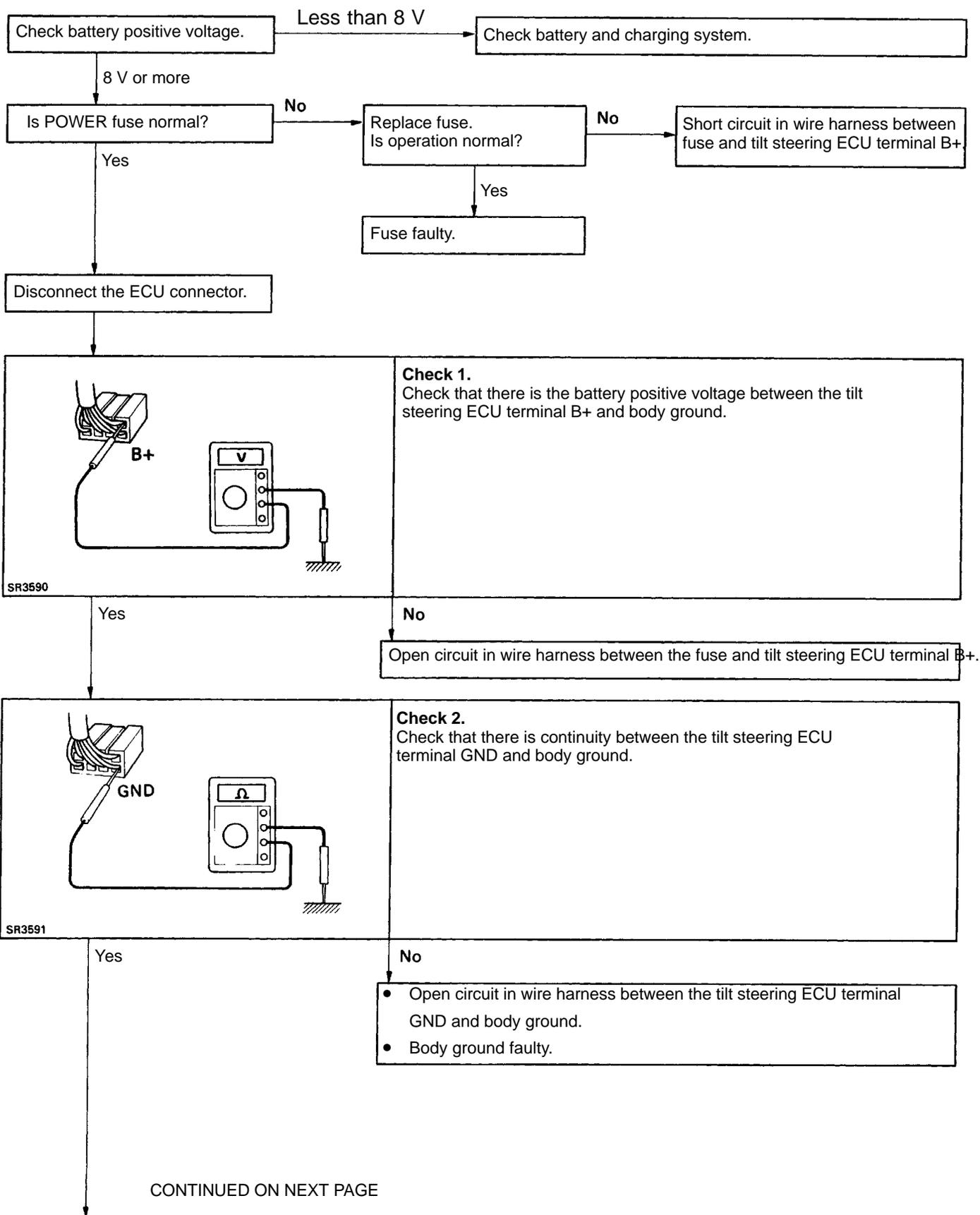
ELECTRONIC CONTROL SYSTEM

Components and Circuit

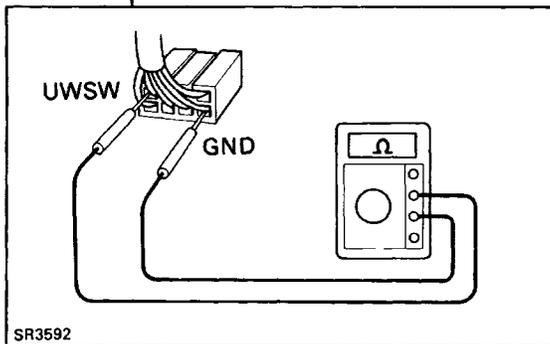


No.	Symbol	Terminal Name
1	B+	Power Source
2	UWSW	Unlock Warning Switch
3	GND	Ground
4	TiM+	Tilt Away
5	TiM-	Tilt Return
6	IGSW	Ignition Switch

Troubleshooting Flow-Chart



Yes CONTINUED FROM PREVIOUS PAGE



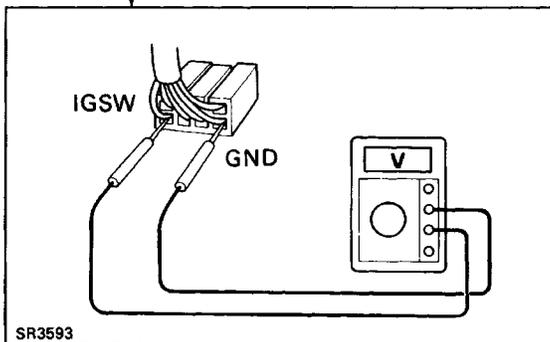
Check 3.
Check continuity between the tilt steering ECU terminals UWSW and GND.

- Ignition switch is inserted . . . Continuity
- Ignition switch is removed ... No continuity

Yes

No

- Open or short circuit in wire harness between the tilt steering ECU terminal UWSW and unlock warning switch.
- Unlock warning switch faulty.

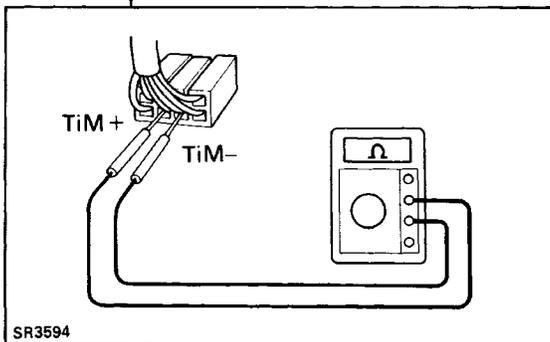


Check 4.
Check voltage between the tilt steering ECU terminals IGSW and GND.
0 Ignition switch ON ... Battery positive voltage
0 Ignition switch OFF ... 0 V

Yes

No

Open or short circuit in wire harness between the tilt steering ECU terminal IGSV11 and ignition switch.



Check 5.
Check that there is continuity between terminals TiM + and TiM-

Yes

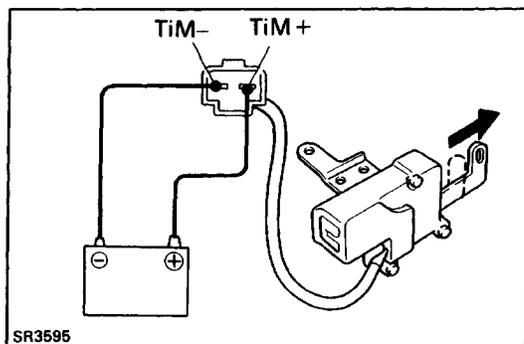
No

- Open circuit in wire harness between the terminals TiM + and TiM-.
- Tilt steering motor faulty. (See page [SR-33](#))

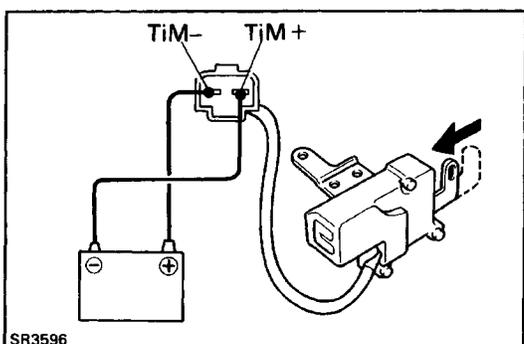
Check 6.
Inspect tilt steering ECU. (See page [SR-33](#))

Bad

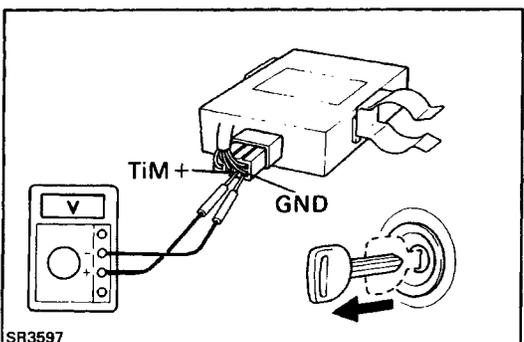
Replace tilt steering ECU.



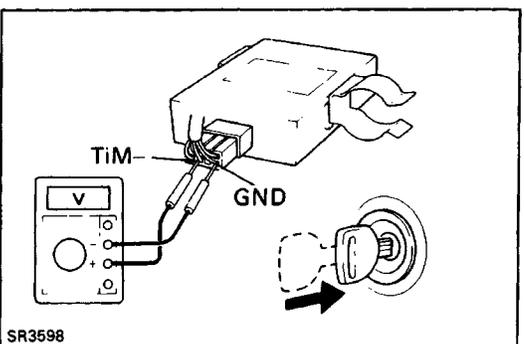
SR3595



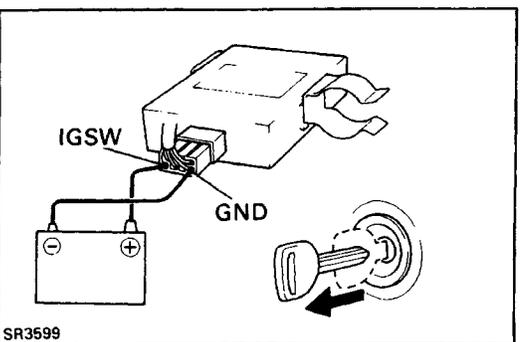
SR3596



SR3597



SR3598



SR3599

Inspection of Electronic Control Components

1. INSPECT TILT STEERING MOTOR

- (a) Disconnect the tilt motor connector.
 - (b) Connect the positive (+) lead from the battery to terminal TiM+ and the negative (-) lead to terminal TiM-.
- Check that the motor operates in the away direction.

- (c) Connect the positive (+) lead from the battery to terminal TiM- and the negative (-) lead to terminal TiM+.
- Check that the motor operates in the return direction.
- If operation is not as specified, replace the motor.

2. INSPECT TILT STEERING ECU

- (a) Remove the glove compartment box.
 - (b) Measure the voltage between tilt steering ECU terminal TiM+ and GND.
- Check that the meter needle jumps once to approx. 10 V when the ignition key is removed from the ignition.

- (c) Measure the voltage between tilt steering ECU terminal TiM- and GND.
- Check that the meter needle jumps once to approx. 10 V when the ignition key is inserted in the ignition.

- (d) Remove the ignition key from the ignition while battery positive voltage is applied to tilt steering ECU terminal IGSW. Check that tilt-away does not operate at this time.
- If operation is not as specified, replace the tilt steering ECU.
- ### 3. INSPECT UNLOCK WARNING SWITCH
- (SEE PAGE [BE-11](#))