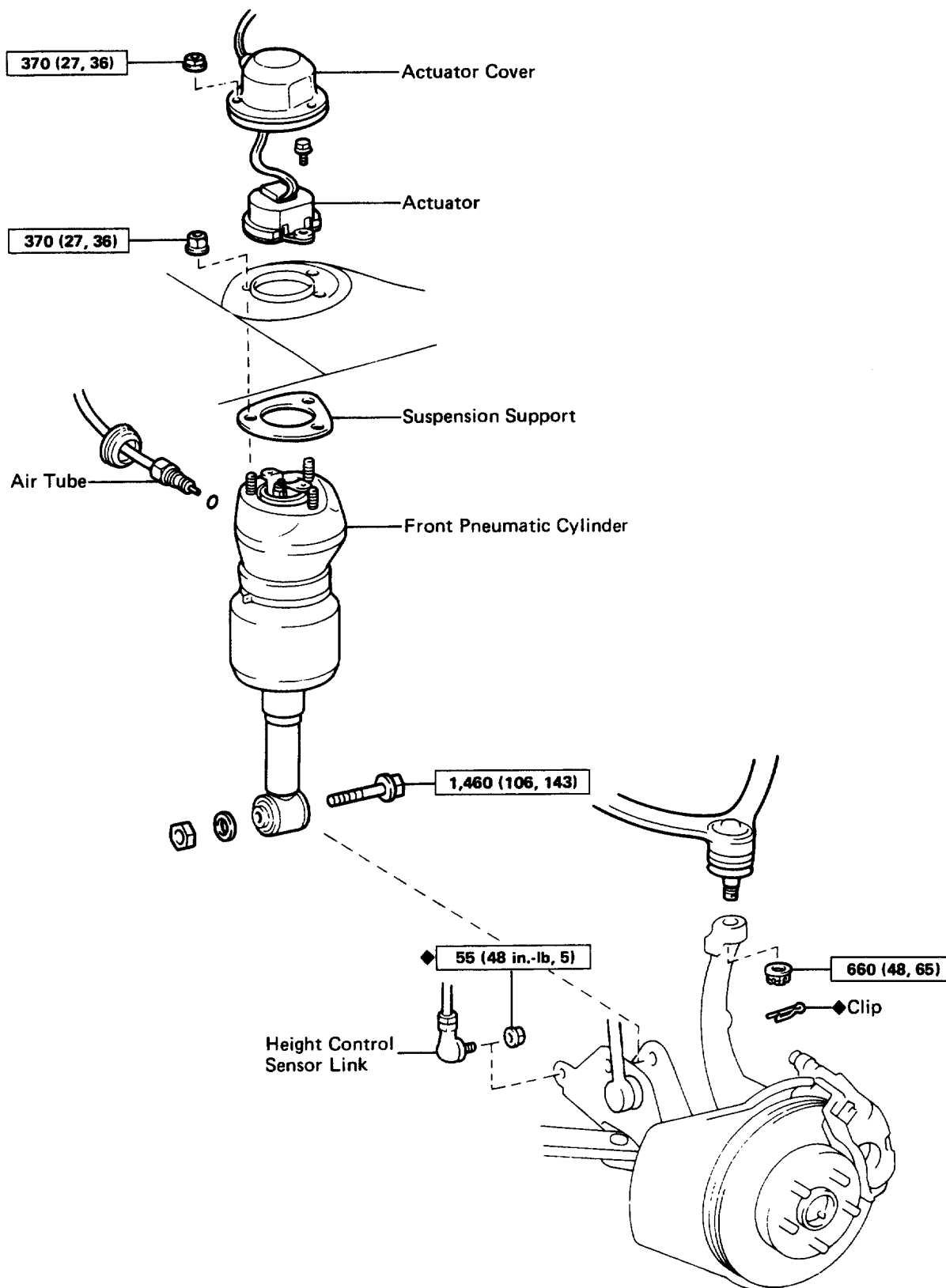
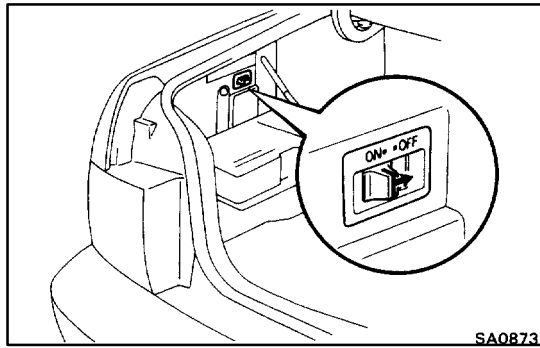


# Front Pneumatic Cylinder COMPONENTS



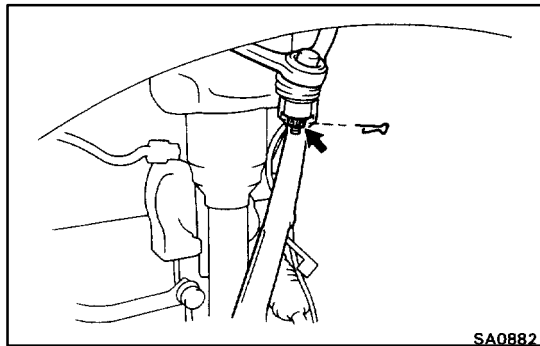
**kg-cm (ft-lb, N·m)** : Specified torque

◆ Non-reusable part



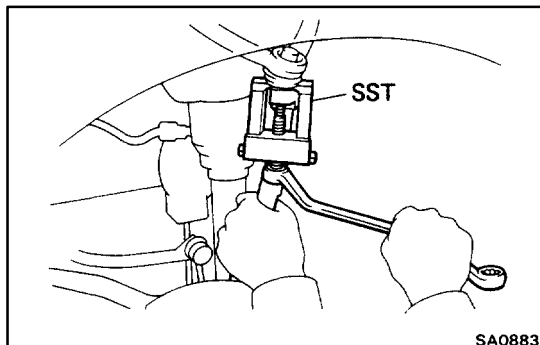
## REMOVAL OF FRONT PNEUMATIC CYLINDER

1. MOVE HEIGHT CONTROL ON/OFF SWITCH IN LUGGAGE COMPARTMENT TO "OFF"
2. JACK UP VEHICLE, REMOVE FRONT WHEEL



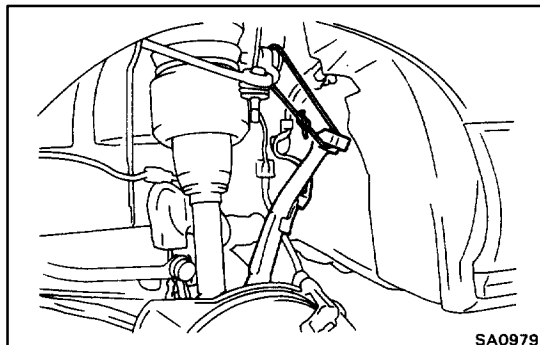
### 3. REMOVE STEERING KNUCKLE FROM UPPER BALL JOINT

- (a) Remove the clip from the upper ball joint and remove the nut.

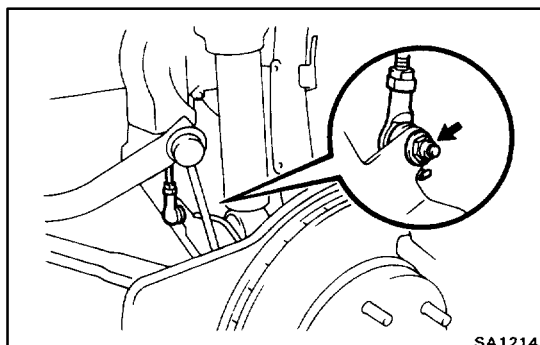


- (b) Using SST, remove the steering knuckle from upper ball joint.

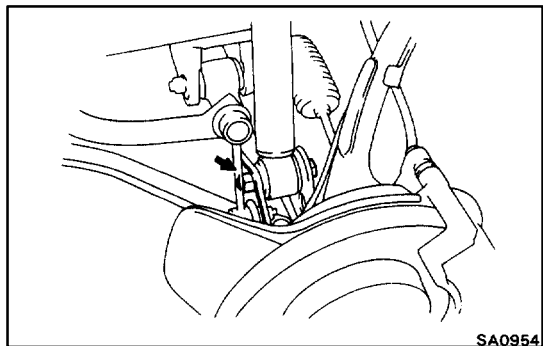
SST 09628-62011



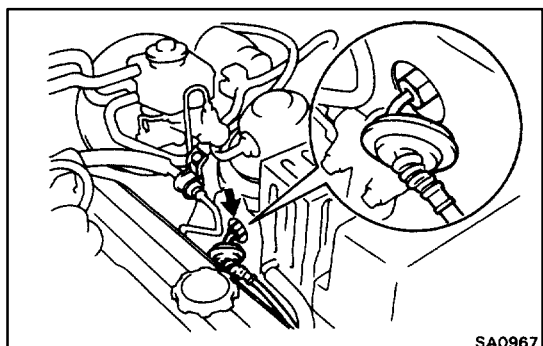
- (c) Restrain the steering knuckle with wire, etc. so that too much force is not exerted on the brake hose and speed sensor wire harness.



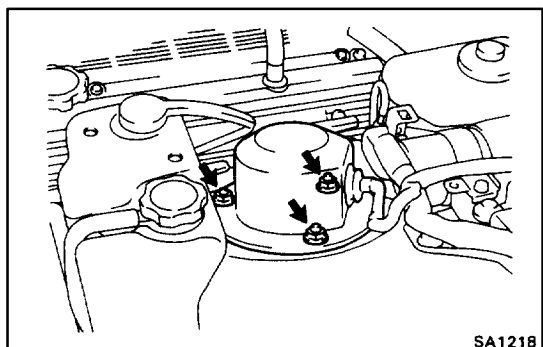
### 4. REMOVE HEIGHT CONTROL SENSOR LINK FROM SHOCK ABSORBER LOWER BRACKET



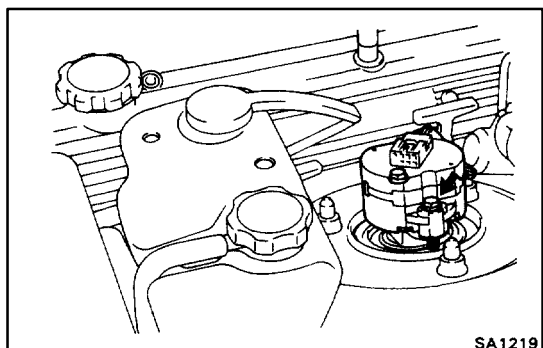
**5. REMOVE PNEUMATIC CYLINDER FROM SHOCK ABSORBER LOWER BRACKET**



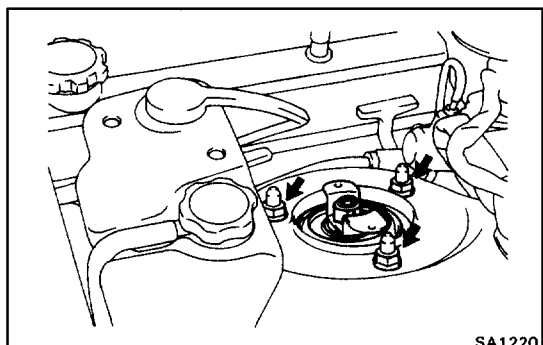
**6. REMOVE AIR TUBE FROM PNEUMATIC CYLINDER**  
Remove the grommet and remove the air tube from the pneumatic cylinder.



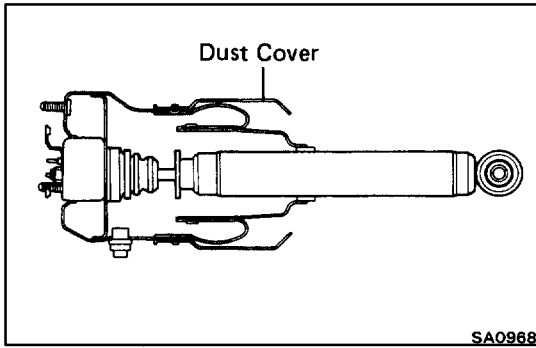
**7. REMOVE SUSPENSION CONTROL ACTUATOR**  
(a) Remove the three nuts and remove the actuator cover.



(b) Remove the two bolts and remove the actuator.



**8. REMOVE FRONT PNEUMATIC CYLINDER**  
Remove the three nuts and remove the pneumatic cylinder and suspension support from the vehicle.



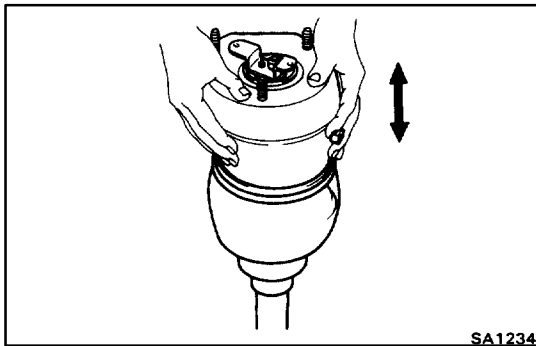
## INSPECTION OF FRONT PNEUMATIC CYLINDER

### 1. INSPECT ROLLING DIAPHRAGM

- (a) Lift up the dust cover and check that the rolling diaphragm is not damaged or cracked.

If damage or cracks exist, replace the pneumatic cylinder.

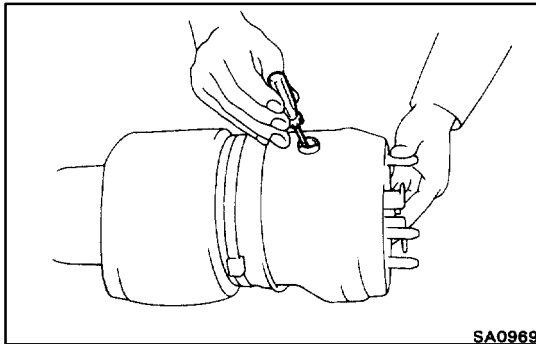
- (b) Return the dust cover back to position.



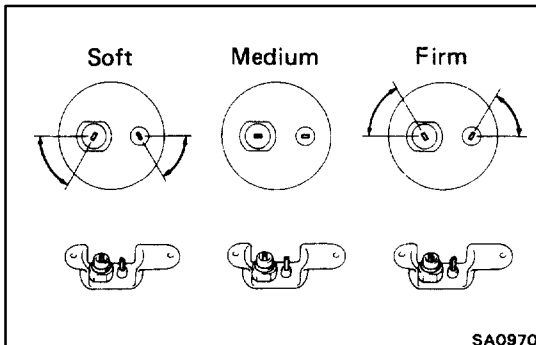
### 2. INSPECT DAMPING FORCE

- (a) Compress and extend the pneumatic cylinder and check that there is no abnormal resistance or unusual operation sounds.

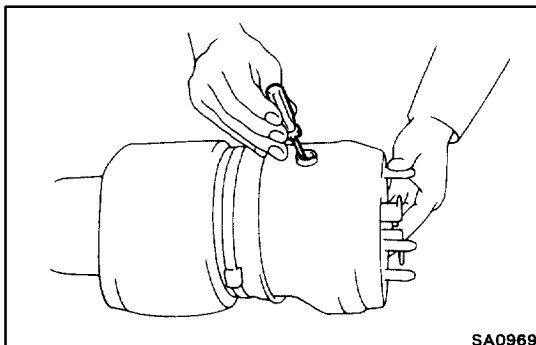
If the pneumatic cylinder is not normal, replace it.



HINT: If air remains inside the pneumatic cylinder, remove the air from the cylinder using a screwdriver, etc. before inspecting the cylinder.



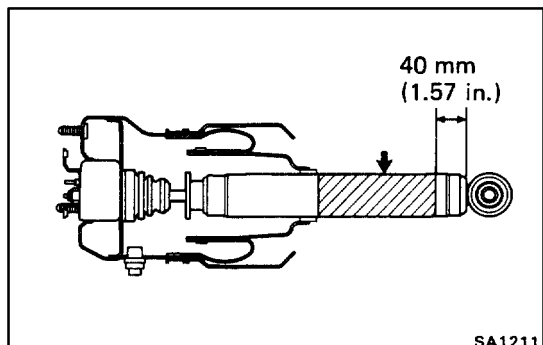
- (b) Check that there is a difference in the damping force when the rods are positioned as shown in the diagram.



## DISPOSAL OF FRONT PNEUMATIC CYLINDER

### 1. REMOVE AIR FROM INSIDE CYLINDER

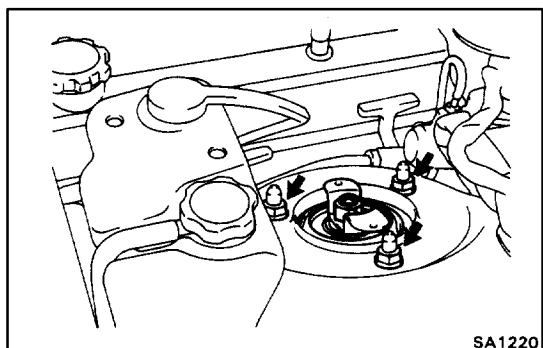
Using a screwdriver, etc. remove the air from inside the cylinder.



## 2. MAKE A HOLE IN SHOCK ABSORBER AND REMOVE GAS

- Fully extend the pneumatic cylinder.
- Using a drill, make a hole in the cylinder as shown to remove the gas inside.

**CAUTION:** The gas coming out is harmless, but be careful of chips which may fly up when drilling.

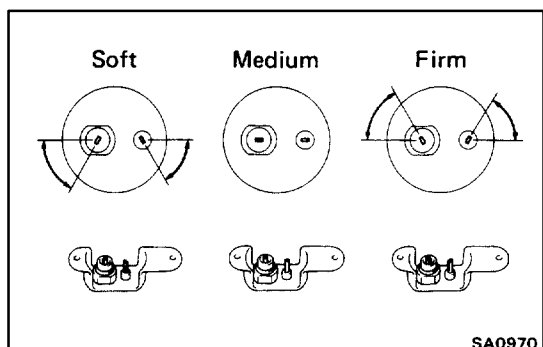


## INSTALLATION OF FRONT PNEUMATIC CYLINDER

### 1. INSTALL PNEUMATIC CYLINDER TO VEHICLE

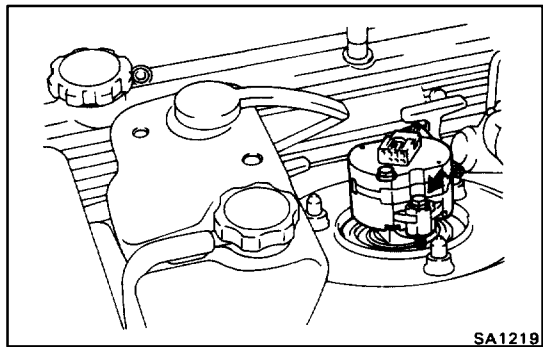
Install pneumatic cylinder to vehicle with the suspension support and three nuts.

**Torque:** 370 kg-cm (27 ft-lb, 36 N·m)

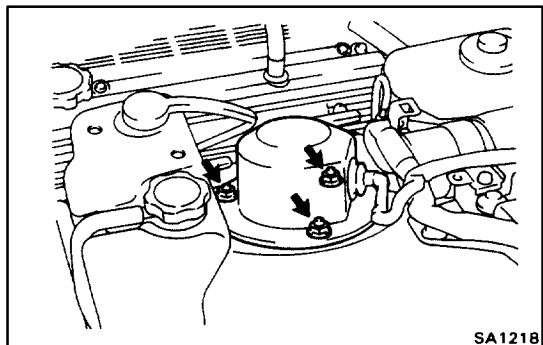


### 2. INSTALL SUSPENSION CONTROL ACTUATOR

- Match the rods of the pneumatic cylinder with the holes in the suspension control actuator.

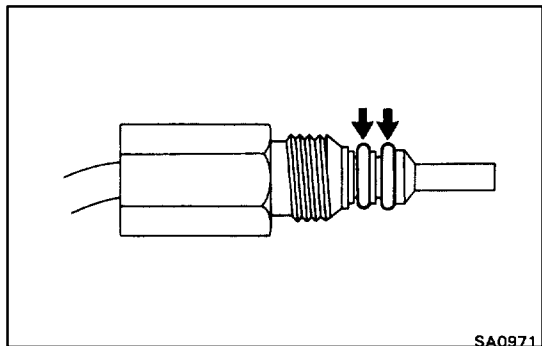


- Install the actuator using two bolts.



- Install the actuator cover with the three nuts.

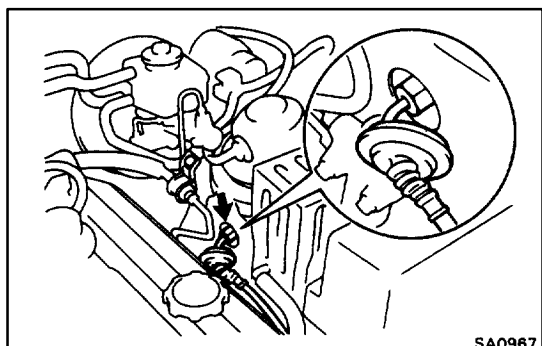
**Torque:** 370 kg-cm (27 ft-lb, 36 N·m)



SA0971

### 3. CONNECT AIR TUBE TO PNEUMATIC CYLINDER

- (a) Install two new O-rings to the air tube.

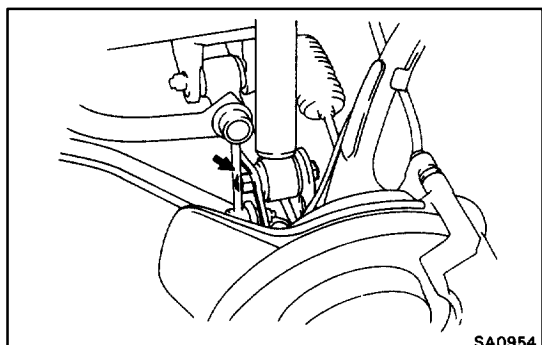


SA0967

- (b) Connect the air tube to the pneumatic cylinder.

**Torque: 175 kg-cm (13 ft-lb, 17 N-m)**

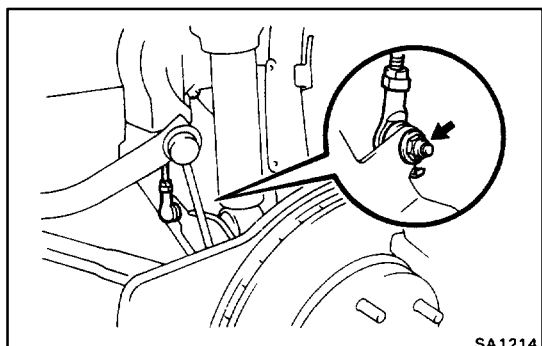
- (c) Install grommet.



SA0954

### 4. INSTALL PNEUMATIC CYLINDER TO SHOCK ABSORBER LOWER BRACKET

Insert the bolt from the vehicle's rear and temporarily tighten the nut.

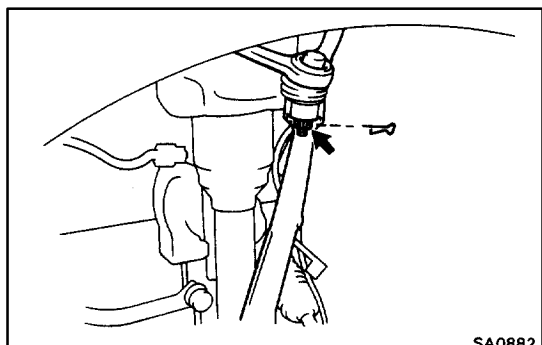


SA1214

### 5. CONNECT HEIGHT CONTROL SENSOR LINK TO SHOCK ABSORBER LOWER BRACKET

Using a new nut, connect height control sensor link to shock absorber lower bracket.

**Torque: 55 kg-cm (48 in.-lb, 5 N-m)**



SA0882

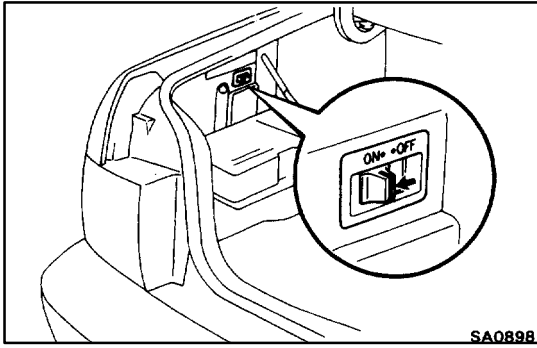
### 6. INSTALL STEERING KNUCKLE TO UPPER BALL JOINT

- (a) Connect the steering knuckle to the upper ball joint and torque the nut.

**Torque: 660 kg-cm (48 ft-lb, 65 N-m)**

- (b) Install a new clip.

**NOTICE:** If the hole in the ball joint is not aligned with the grooves of the nut, tighten the nut until they match.

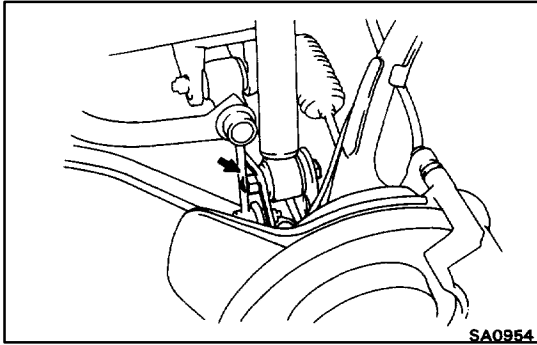
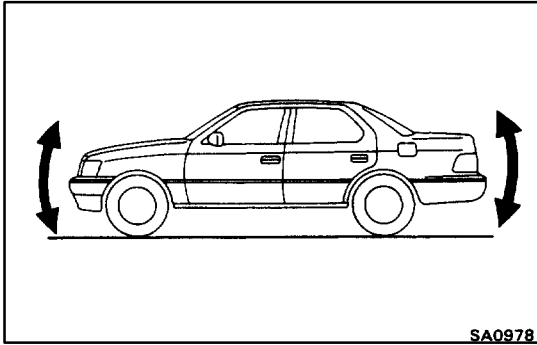
**7. STABILIZE SUSPENSION**

- (a) Install the front wheel and jack down the vehicle.

**NOTICE:** Be careful of objects sticking out from the floor as the vehicle height is noticeably lower due to the air taken out of the pneumatic cylinders.

- (b) Move the height control ON/OFF switch to "ON".  
(c) Start the engine and fill up the pneumatic cylinder with air.

- (d) Bounce the vehicle up and down several times to stabilize the suspension.

**8. TORQUE NUT ON LOWER SIDE OF PNEUMATIC CYLINDER**

- (a) Support the lower arm with jack and remove the front wheel.  
(b) Torque the nut to the specified torque.  
Torque: 1,460 kg-cm (106 ft-lb, 143 N·m)

**9. INSTALL FRONT WHEEL AND LOWER VEHICLE**

Torque: 1,050 kg-cm (76 ft-lb, 103 N·m)

**10. CHECK FRONT WHEEL ALIGNMENT**

(See page [SA-5](#))