

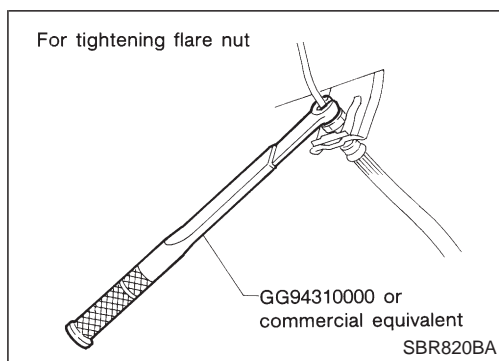
# REAR AXLE & REAR SUSPENSION

## SECTION **RA**

### CONTENTS

<b>PRECAUTIONS AND PREPARATION</b> .....1	Installation.....9
Precautions.....1	<b>REAR SUSPENSION</b> .....12
Special Service Tools.....1	Removal and Installation.....13
Commercial Service Tools.....2	Coil Spring and Shock Absorber.....14
<b>NOISE, VIBRATION AND HARSHNESS (NVH)</b>	Upper Link, Lower Link and Panhard Rod.....14
<b>TROUBLESHOOTING</b> .....3	Stabilizer Bar.....15
NVH Troubleshooting Chart.....3	<b>STABILIZER RELEASE DEVICE</b> .....16
<b>REAR AXLE AND REAR SUSPENSION</b> .....4	System Components.....16
<b>ON-VEHICLE SERVICE</b> .....5	System Description.....16
Rear Axle and Rear Suspension Parts.....5	Removal and Installation.....17
Rear Wheel Bearing.....5	Wiring Diagram.....18
<b>REAR AXLE</b> .....6	Trouble Diagnoses.....20
Components.....6	<b>SERVICE DATA AND SPECIFICATIONS (SDS)</b> .....25
Removal.....7	General Specifications.....25
Inspection.....9	Inspection and Adjustment.....25

## PRECAUTIONS AND PREPARATION



### Precautions

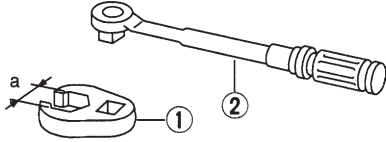
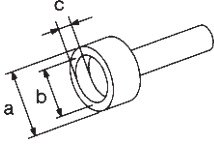
- When installing rubber parts, final tightening must be carried out under unladen condition\* with tires on ground.
- \*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
- Use flare nut wrench when removing and installing brake tubes.
- After installing removed suspension parts, check wheel alignment and adjust if necessary.
- Always torque brake lines when installing.

### Special Service Tools

Tool number Tool name	Description
KV40101000 Axle stand	<div style="text-align: right;">Removing rear axle shaft</div> <div style="text-align: left;">NT159</div>
ST36230000 Sliding hammer	<div style="text-align: right;">Removing rear axle shaft</div> <div style="text-align: left;">NT126</div>
ST38080001 Bearing lock nut wrench	<div style="text-align: right;">Removing wheel bearing lock nut</div> <div style="text-align: left;">NT507</div> <div style="text-align: right;"><b>a: 58 mm (2.28 in)</b></div>
KV40106500 Wheel bearing puller	<div style="text-align: right;">Removing wheel bearing</div> <div style="text-align: left;">NT724</div>
GG94310000 Flare nut torque wrench	<div style="text-align: right;">Removing and installing brake piping</div> <div style="text-align: left;">NT406</div> <div style="text-align: right;"><b>a: 10 mm (0.39 in)</b></div>

# PRECAUTIONS AND PREPARATION

## Commercial Service Tools

Tool name	Description
Equivalent to GG94310000 ① Flare nut crowfoot ② Torque wrench	 <p>Removing and installing each brake piping</p> <p>NT360</p> <p><b>a: 10 mm (0.39 in)</b></p>
Rear axle oil seal drift	 <p>Installing oil seal</p> <p>NT163</p> <p><b>a: 74 mm (2.91 in) dia.</b></p> <p><b>b: 68 mm (2.68 in) dia.</b></p> <p><b>c: 10 mm (0.39 in)</b></p>

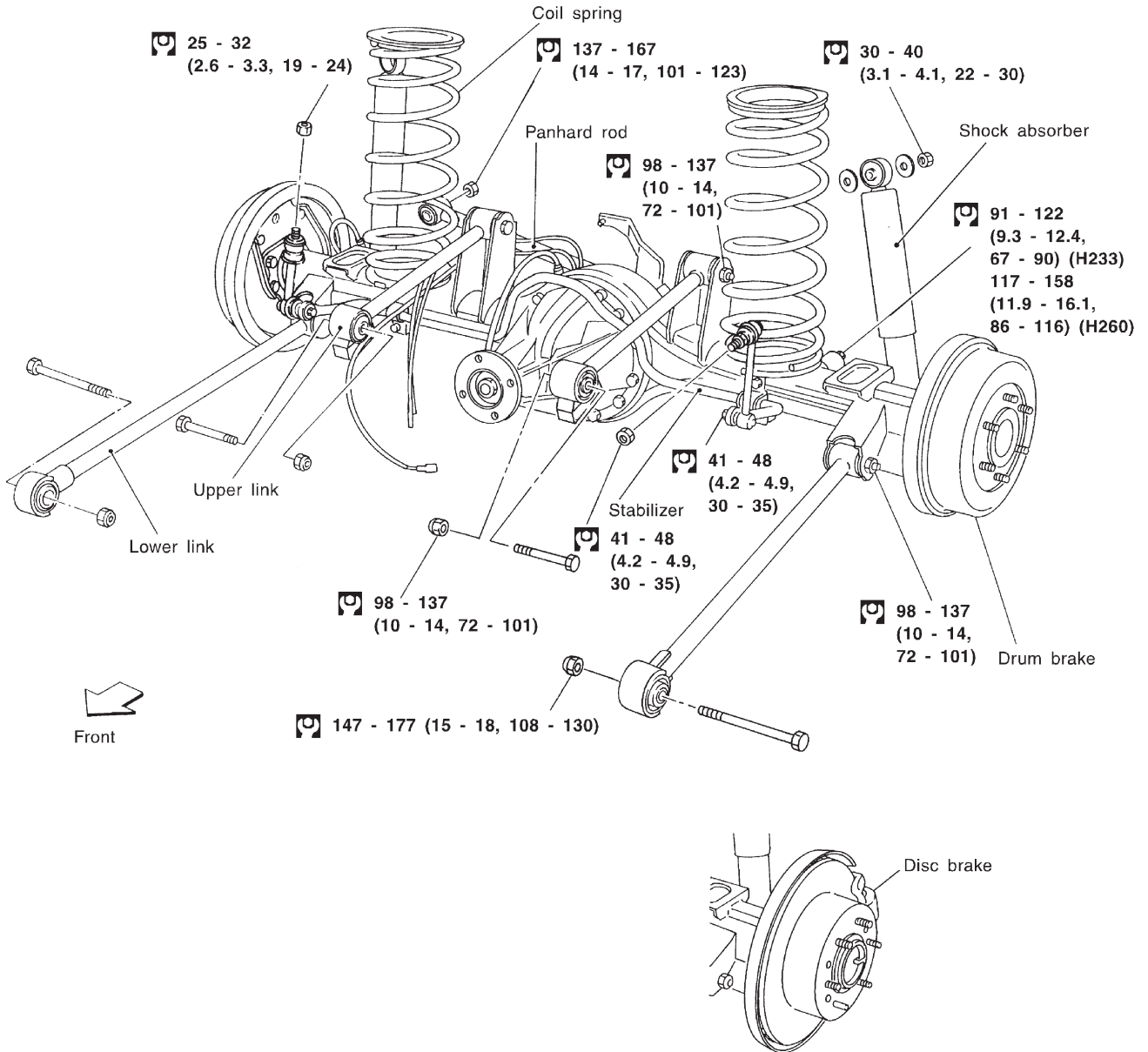


# REAR AXLE AND REAR SUSPENSION

## SEC. 430•431

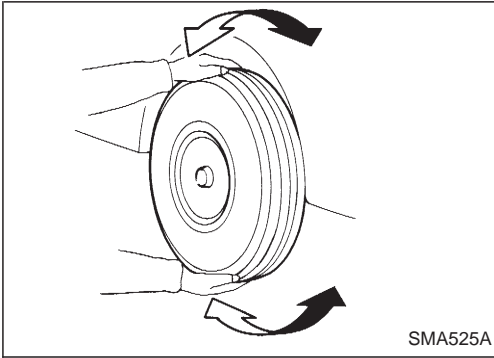
When installing each rubber part, final tightening must be carried out under unladen condition\* with tires on ground.

\* Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.



: N•m (kg-m, ft-lb)

## ON-VEHICLE SERVICE



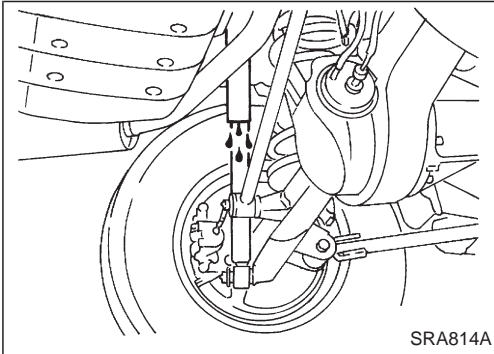
### Rear Axle and Rear Suspension Parts

Check rear axle and rear suspension parts for excessive play, wear or damage.

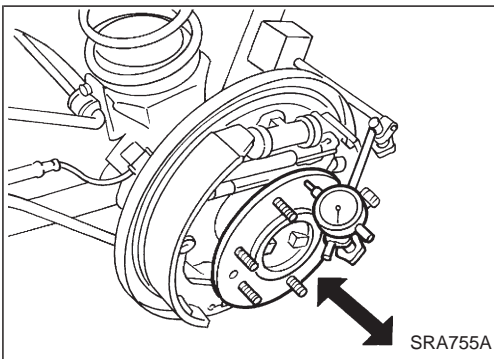
- Shake each rear wheel to check for excessive play.
- Retighten all nuts and bolts to the specified torque.

#### Tightening torque:

Refer to REAR SUSPENSION, RA-12.



- Check shock absorber for oil leakage or other damage.
- Check shock absorber bushing for excessive wear or other damage.



### Rear Wheel Bearing

- Check that wheel bearings operate smoothly.
- Check axial end play.

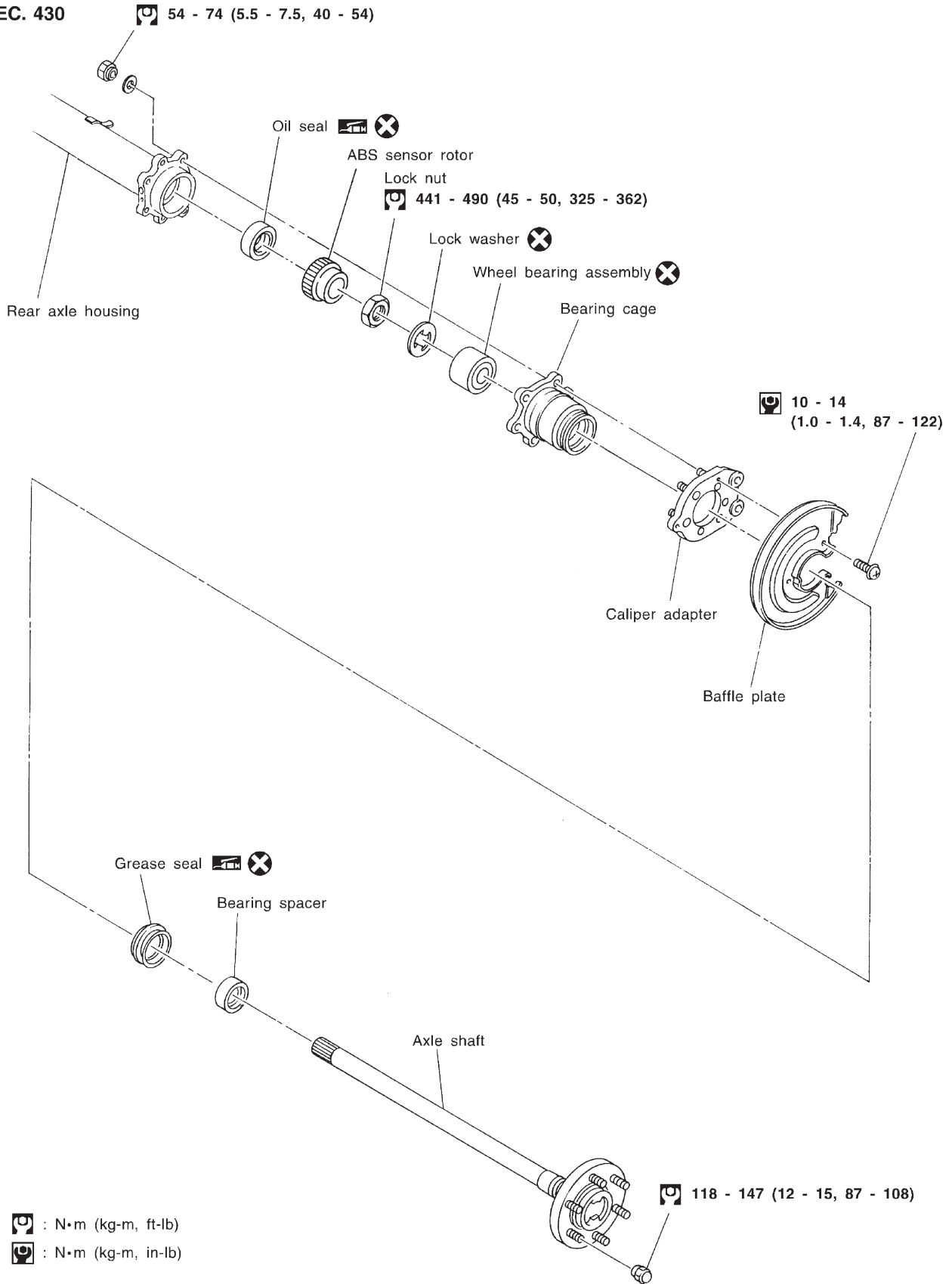
#### Axial end play:

0 mm (0 in)

# REAR AXLE

## Components

SEC. 430



: N·m (kg-m, ft-lb)

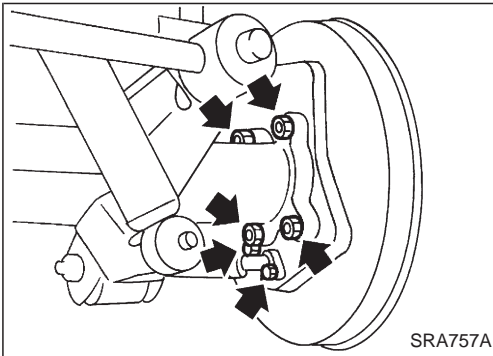
: N·m (kg-m, in-lb)

## REAR AXLE

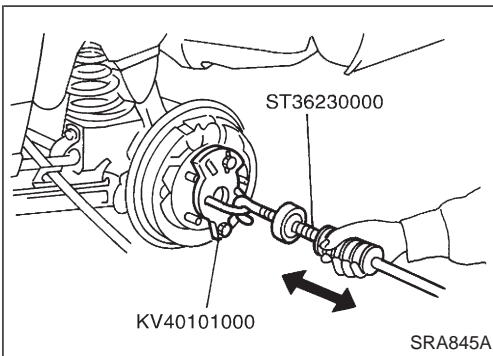
### Removal

#### CAUTION:

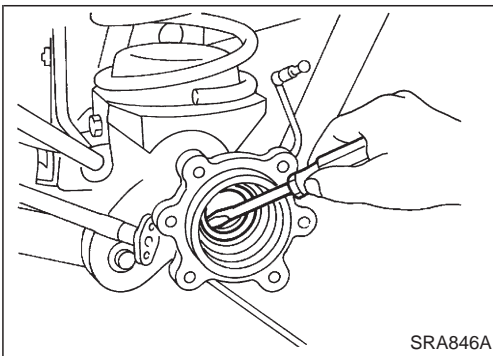
- Before removing the rear axle, disconnect the ABS wheel sensor from the assembly. Then move it away from the axle. Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.
- Wheel bearing does not require maintenance.
- If growling noise is emitted from wheel bearing during operation, replace wheel bearing assembly.
- If the wheel bearing assembly is removed, it must be renewed. The old assembly must not be re-used.



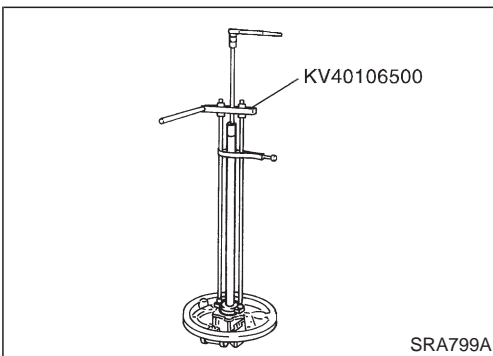
1. Disconnect parking brake cable and brake tube.
2. Remove nuts securing wheel bearing cage with baffle plate.



3. Draw out axle shaft with Tool.  
**When drawing out axle shaft, be careful not to damage oil seal.**
4. Remove O-ring.



5. Remove oil seal with a screwdriver.  
**Do not reuse oil seal once it is removed. Always install new one.**

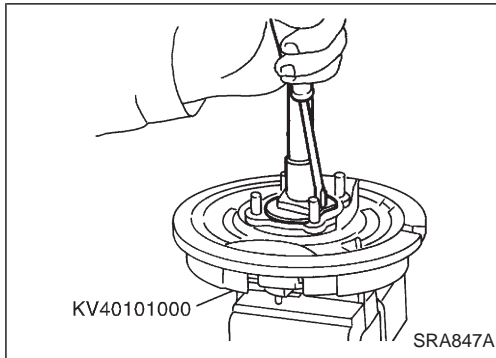


6. Remove ABS sensor rotor. — Models with ABS —

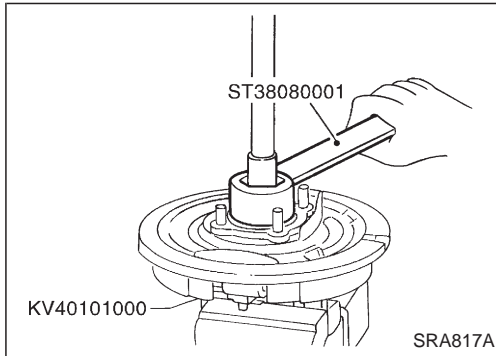


## REAR AXLE

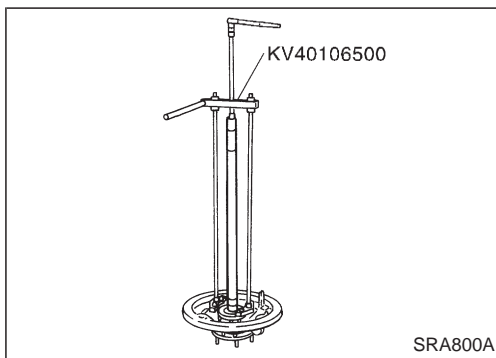
### Removal (Cont'd)



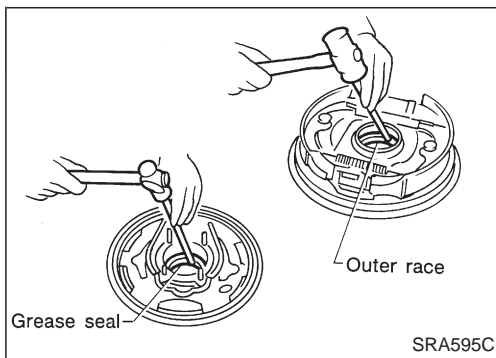
7. Unbend lock washer with a screwdriver.  
**Do not reuse lock washer once removed. Always install new one.**



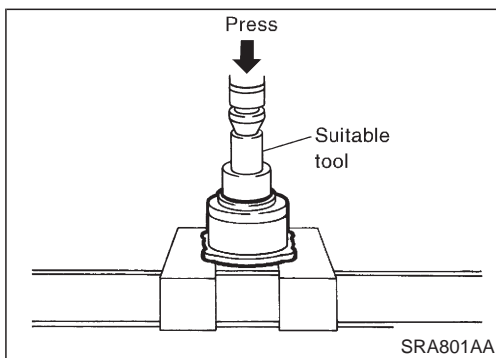
8. Remove bearing lock nut with Tool.



9. Remove wheel bearing together with bearing cage and baffle plate from axle shaft.



10. Remove grease seal in bearing cage with suitable bar.



11. Remove wheel bearing assembly.

# REAR AXLE

## Inspection

### AXLE SHAFT

Check axle shaft for straightness, cracks, damage, wear or distortion. Replace if necessary.

### BEARING CAGE

Check bearing cage for deformation or cracks. Replace if necessary.

### REAR AXLE HOUSING

Check rear axle housing for yield, deformation or cracks. Replace if necessary.

## Installation

1. Press new wheel bearing until it bottoms end face of bearing cage.

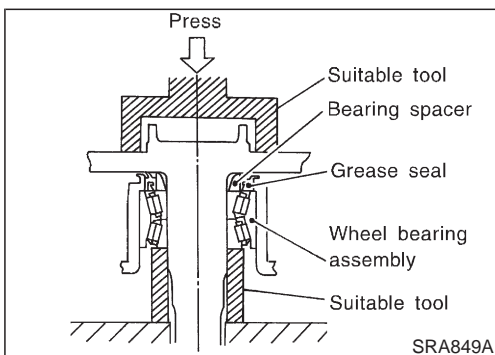
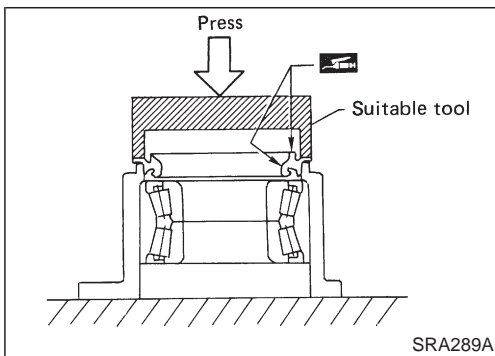
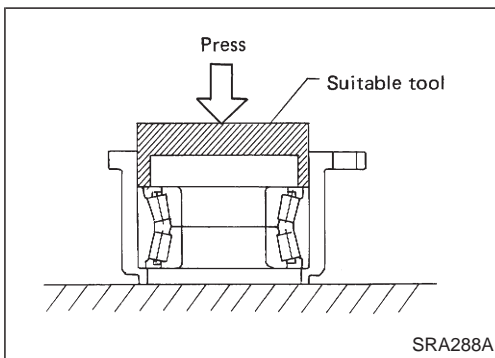
**Always press outer race of wheel bearing during installation.**

2. Press new grease seal until it bottoms end face of bearing cage.

**After installing new grease seal, coat sealing lip with multi-purpose grease.**

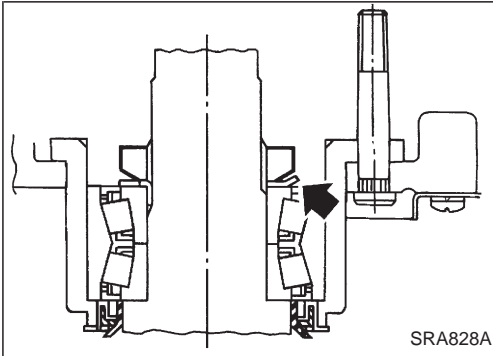
3. Install bearing spacer with chamfer side facing axle shaft flange.
4. Install caliper adapter and baffle plate to bearing cage.

5. Press axle shaft into inner race of wheel bearing.
- Be careful not to damage or deform grease seal.**

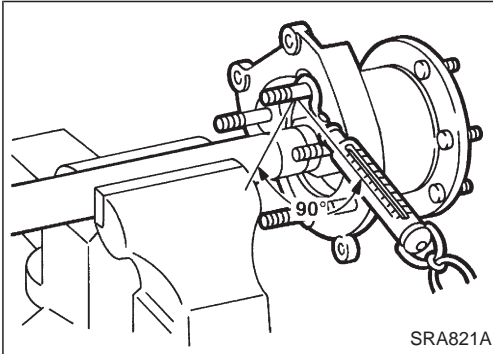


## REAR AXLE

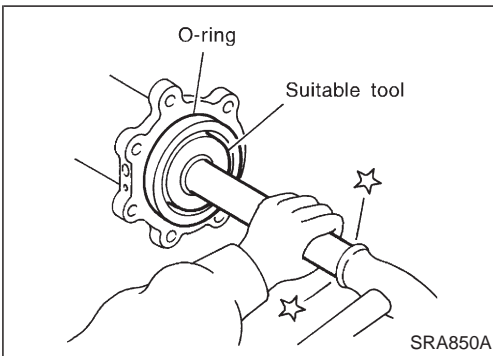
### Installation (Cont'd)



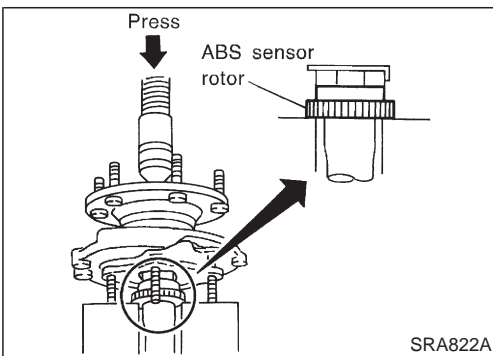
6. Install a new wheel bearing lock washer.
7. Tighten wheel bearing lock nut to specified torque.  
☞: 441 - 490 N·m (45 - 50 kg-m, 325 - 362 ft-lb)  
**Be sure to bend bearing lock washer up.**



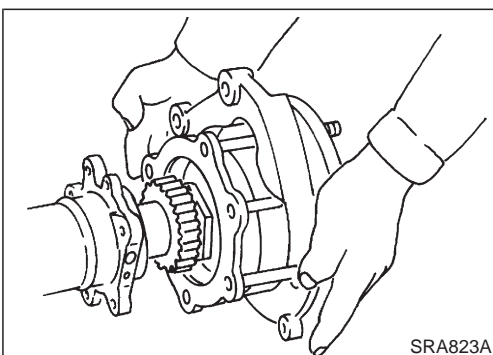
8. Check wheel bearing preload.
  - a. Turn bearing cage (with respect to axle shaft) two or three times. It must turn smoothly.
  - b. Attach spring gauge to bearing cage bolt (as shown at left) and pull it at a speed of 10 rpm to measure preload.  
**Spring gauge indication:**  
8.8 - 42.2 N (0.9 - 4.3 kg, 2.0 - 9.5 lb)



9. Install new oil seal to rear axle housing using a suitable tool.  
**After installing new oil seal, coat sealing lip with multi-purpose grease.**
10. Install new O-ring to rear axle housing.



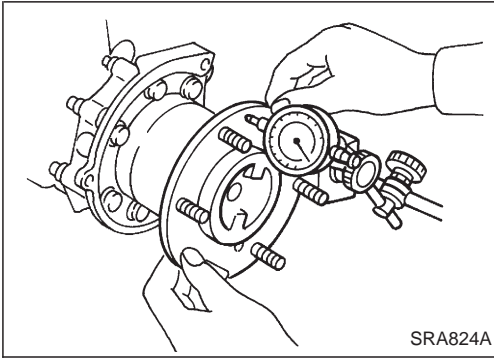
11. Press ABS sensor rotor onto axle shaft until it contacts wheel bearing lock nut.



12. Install axle shafts in rear axle housing.  
**Be careful not to damage oil seal.**

## REAR AXLE

### Installation (Cont'd)



13. Check axial end play.
  - a. Check that wheel bearings operate smoothly.
  - b. Check axial end play.

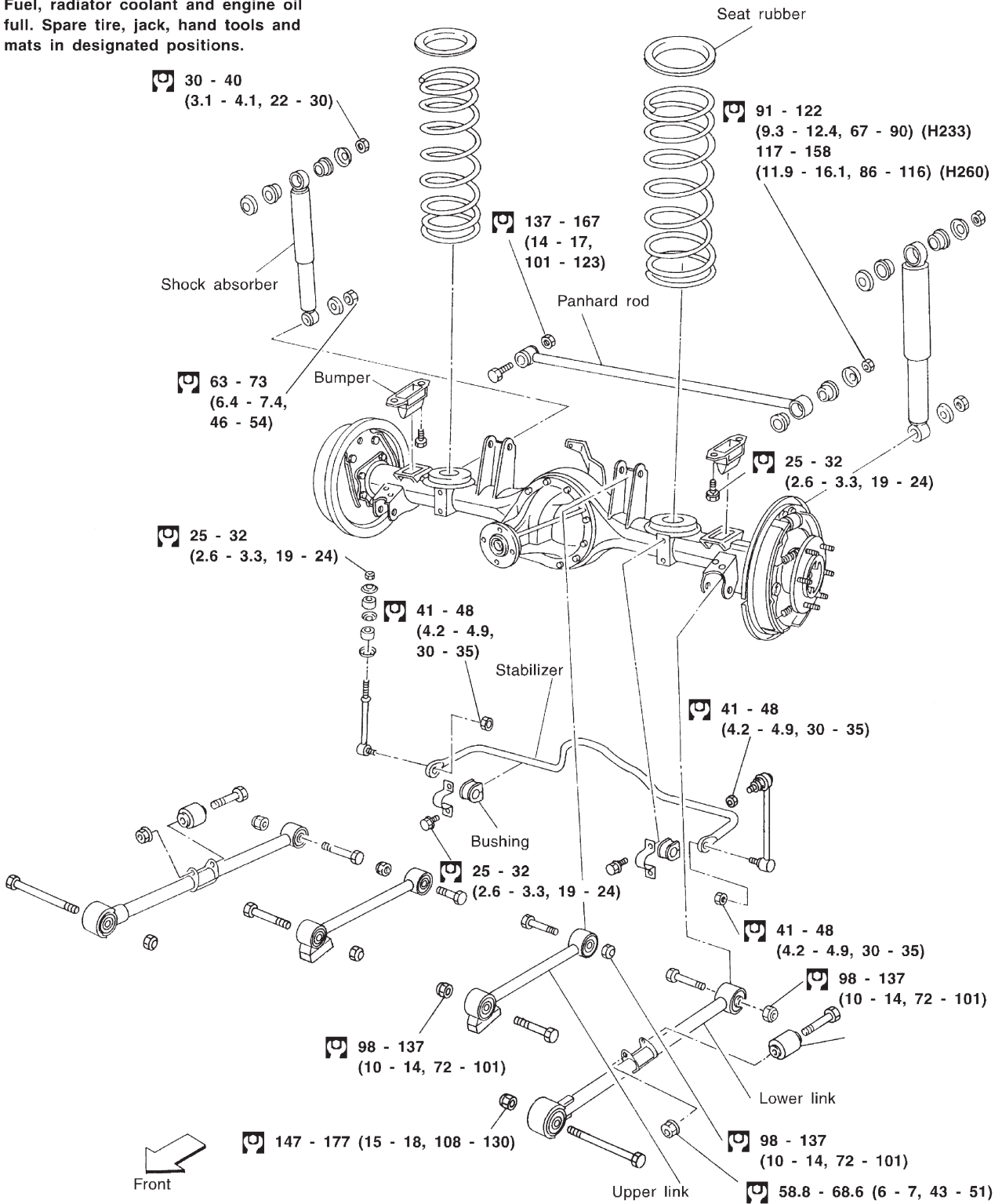
**Axial end play:**  
**0 mm (0 in)**

# REAR SUSPENSION

## SEC. 431

When installing each rubber part, final tightening must be carried out under unladen condition\* with tires on ground.

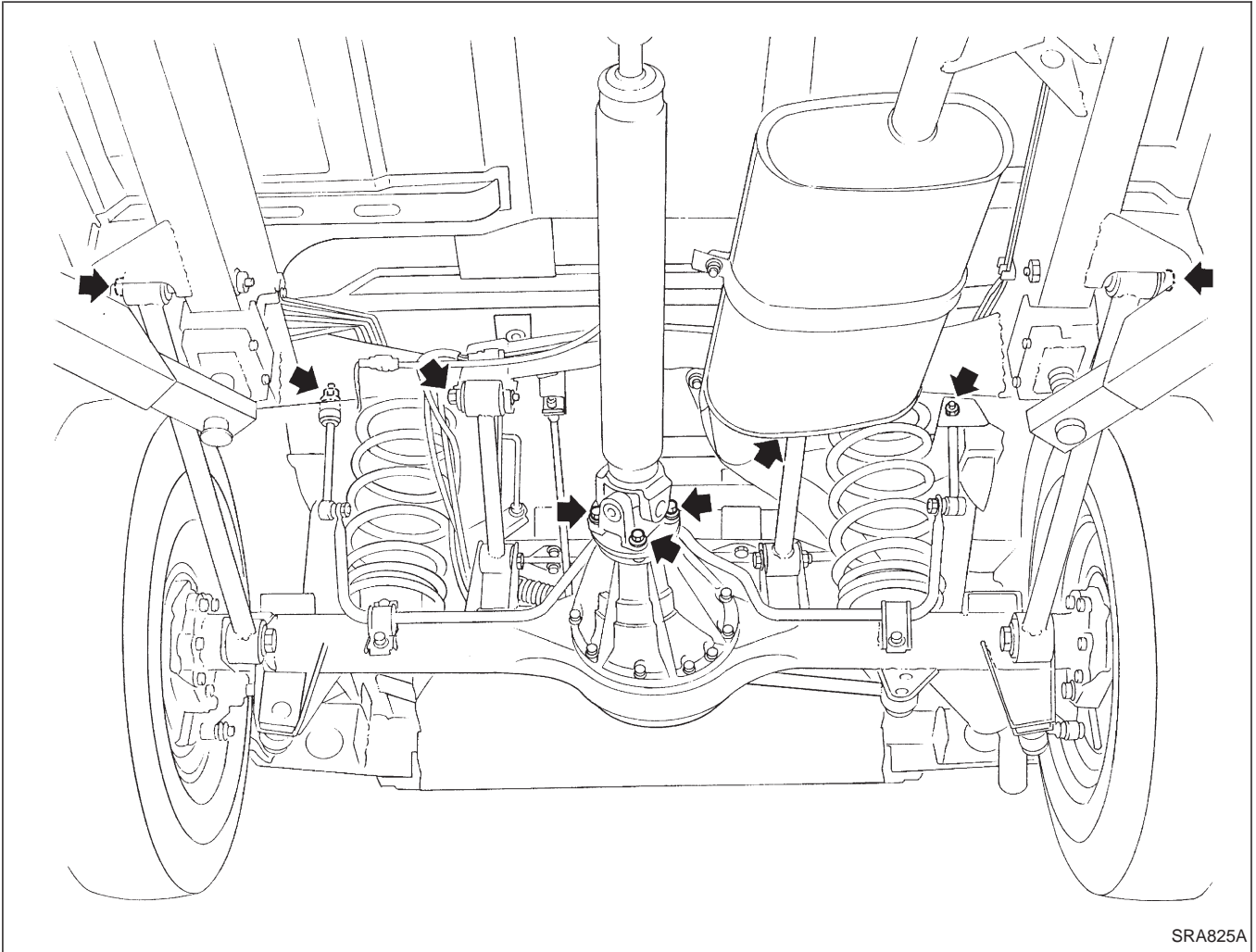
\* Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.



: N·m (kg-m, ft-lb)

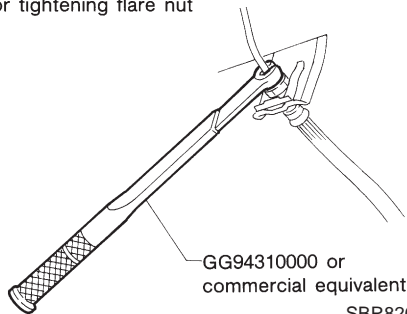
## REAR SUSPENSION

### Removal and Installation



SRA825A

For tightening flare nut



GG94310000 or  
commercial equivalent

SBR820BA

- Support axle and suspension components with a suitable jack and block.
- Disconnect brake hydraulic line and parking brake cables at back plates.

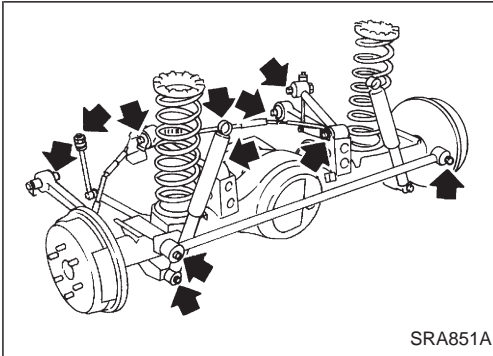
#### CAUTION:

- Use flare nut wrench when removing or installing brake tubes.
- Before removing the rear suspension assembly, disconnect the ABS wheel sensor from the assembly. Then move it away from the rear suspension assembly. Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.
- Remove stabilizer bar from body.
- Remove upper links and lower links from body.
- Remove panhard rod from body.
- Disconnect rear end of propeller shaft. Refer to PD section.
- Remove upper end nuts of shock absorber.

## REAR SUSPENSION

### Removal and Installation (Cont'd)

Final tightening for rubber parts requires to be carried out under unladen condition with tires on ground.

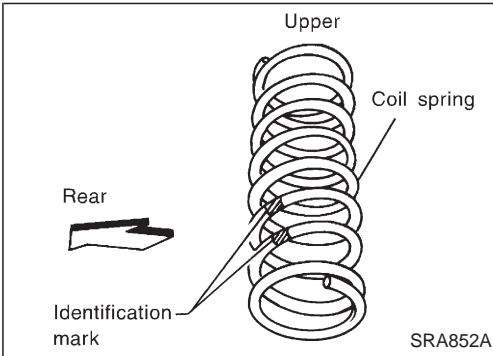


### Coil Spring and Shock Absorber

#### REMOVAL AND INSTALLATION

Refer to "Removal and Installation", "REAR SUSPENSION", RA-13.

**When installing coil spring, pay attention to its direction. Be sure spring rubber seat is not twisted and has not slipped off when installing coil spring.**



#### INSPECTION

- Check coil spring for yield, deformation or cracks.
- Check shock absorber for oil leakage, cracks or deformation.
- Check all rubber parts for wear, cracks or deformation. Replace if necessary.

### Upper Link, Lower Link and Panhard Rod

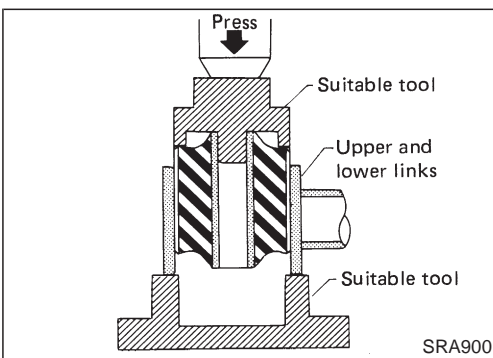
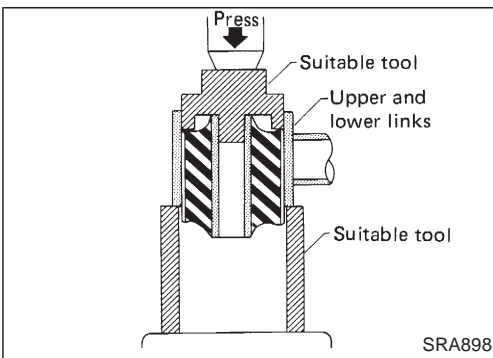
#### INSPECTION

Check for cracks, distortion or other damage. Replace if necessary.

#### BUSHING REPLACEMENT

Check for cracks or other damage. Replace with suitable tool if necessary.

- Remove bushing with suitable tool.



**When installing bushing, apply a coat of 1% soapy water to outer wall of bushing.**

**Always install new bushing.**

**Do not tap end face of bushing directly with a hammer.**

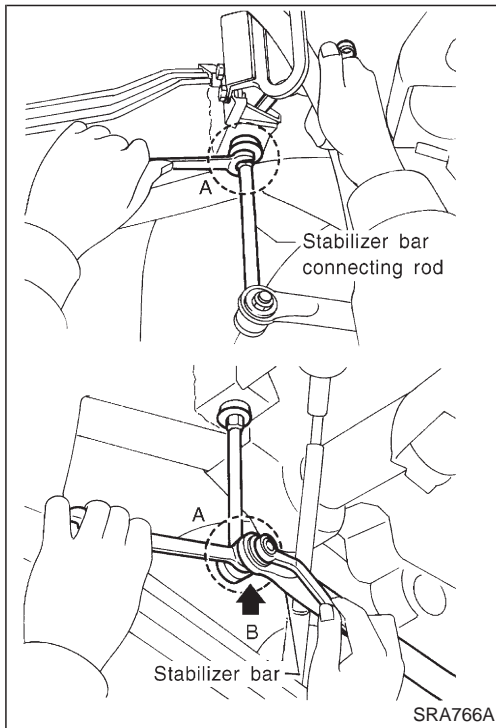
## REAR SUSPENSION

### Upper Link, Lower Link and Panhard Rod (Cont'd)

#### INSTALLATION

When installing each link, pay attention to direction of nuts and bolts.

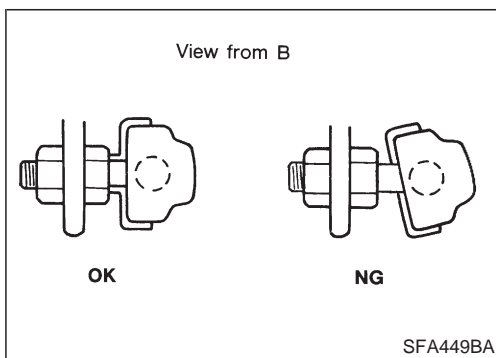
When installing each rubber part, final tightening must be carried out under unladen condition with tires on ground.



#### Stabilizer Bar

#### REMOVAL AND INSTALLATION

- When removing and installing stabilizer bar, fix portion A.

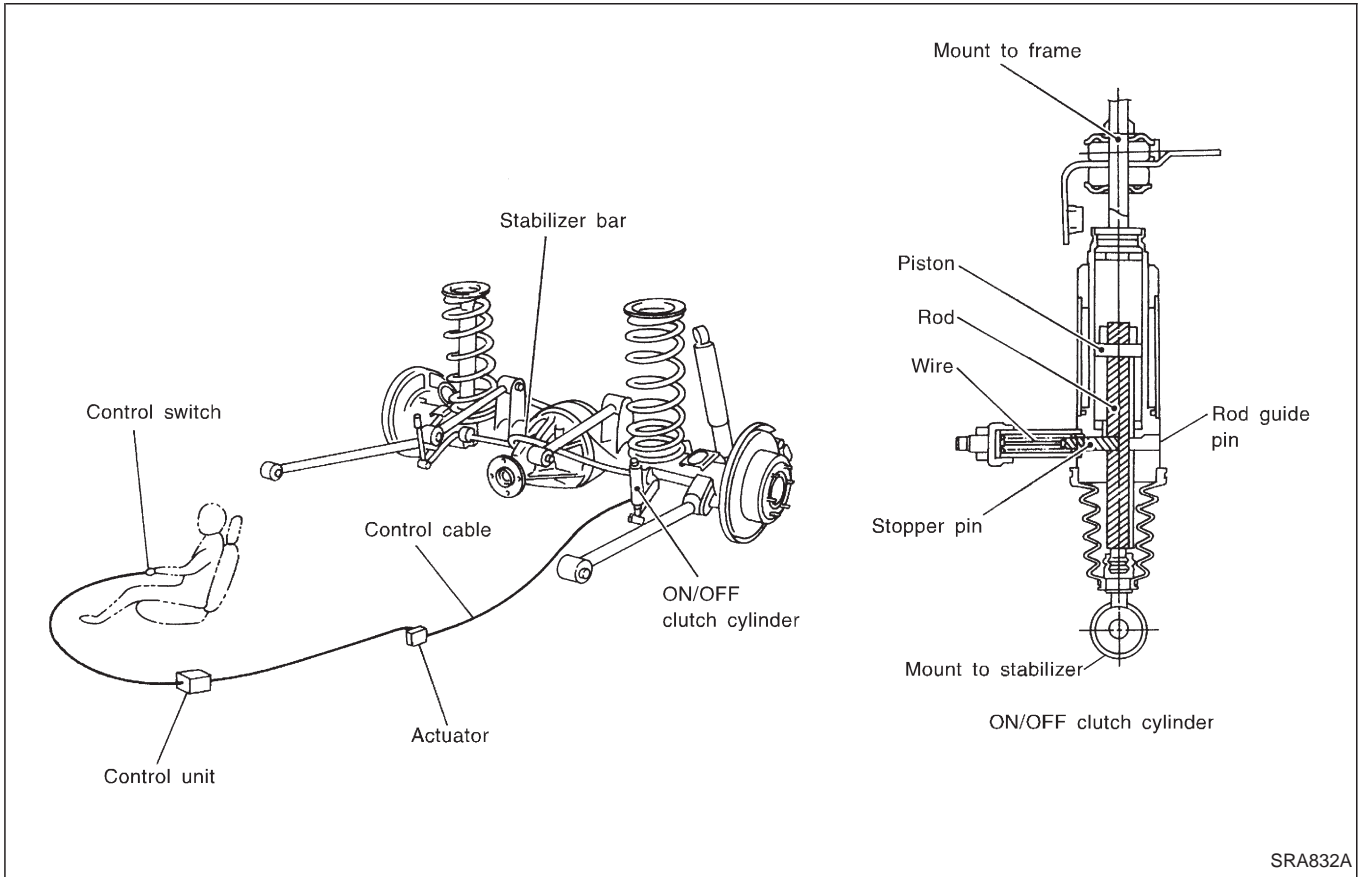


- Install stabilizer bar with ball joint socket properly placed.



# STABILIZER RELEASE DEVICE

## System Components



Roll rigidity is increased by activating the stabilizer function (turning the stabilizer ON) on good roads. On rough roads, deactivating the stabilizer function (turning the stabilizer OFF) reduces stabilizer swing-back behavior. As a result, the stabilizer release device serves to increase driving capability and riding comfort on rough roads. The stabilizer release device is electrically activated (turned ON) or deactivated (turned OFF) by the stabilizer switch in the driver's compartment.

## System Description

### CONTROL UNIT

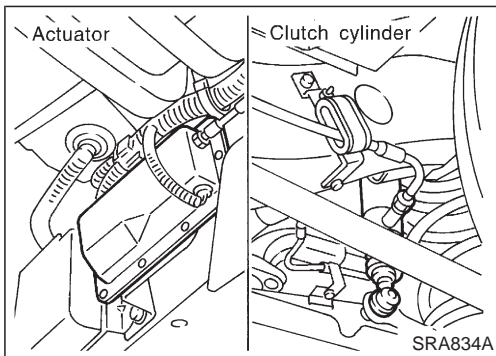
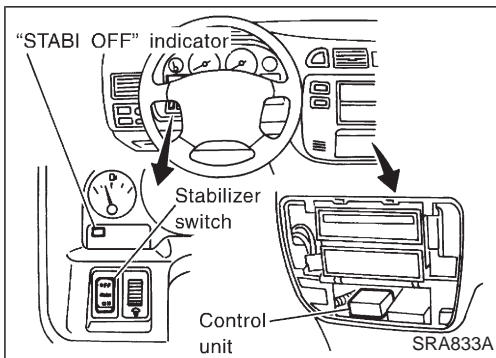
The stabilizer control unit controls the actuator motor using the stabilizer switch and a signal sent from the vehicle speed sensor. When vehicle speed exceeds 20 km/h (12 MPH), the stabilizer control unit maintains the clutch cylinder position and activates the stabilizer function, regardless of the position of the stabilizer switch. The system is provided with a timer function to cut the actuator activating power output in about 15 seconds, in consideration of a possible system abnormality.

### ACTUATOR

The actuator motor is turned on by a signal sent from the control unit. When the motor operates, the cable moves to activate the stopper pin at the end of the cable.

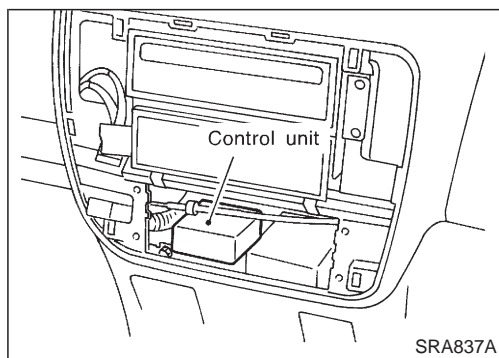
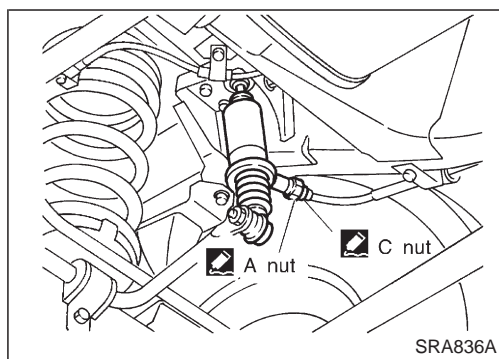
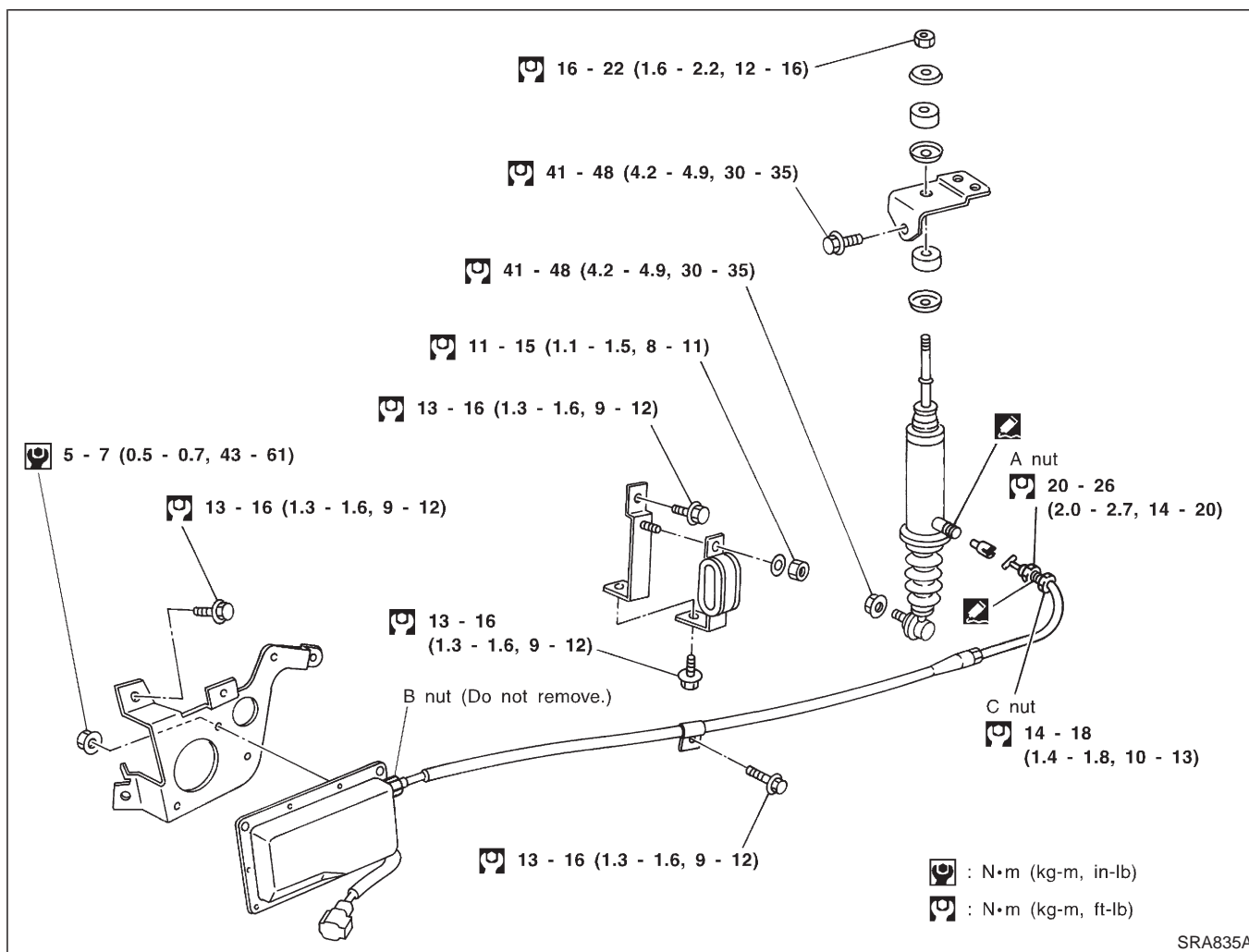
### CLUTCH CYLINDER

The stopper pin (at the end of the cable) moves in and out of the cylinder (toward the piston rod or away from the piston rod) to turn the stabilizer ON or OFF.



# STABILIZER RELEASE DEVICE

## Removal and Installation



1. Loosen the lock nut C, and loosen the A nut. Remove the cable from the clutch cylinder.

### CAUTION:

- Do not remove the B nut because this requires the inner cable extension adjustment.
  - Before installing the A and C nuts, use seal tape to wrap the clutch cylinder thread area and cable thread area.
2. Remove the clamp and other fasteners which secure the cable.
  3. Remove the stabilizer actuator connector.
  4. Remove the stabilizer actuator.
  5. Remove the clutch cylinder.

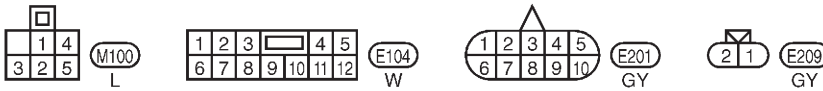
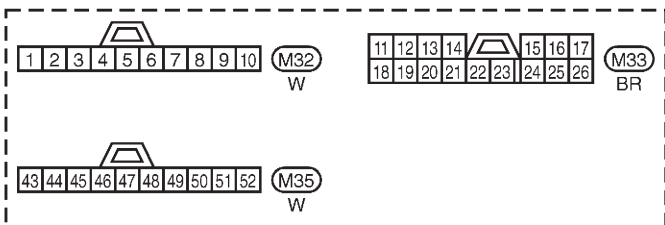
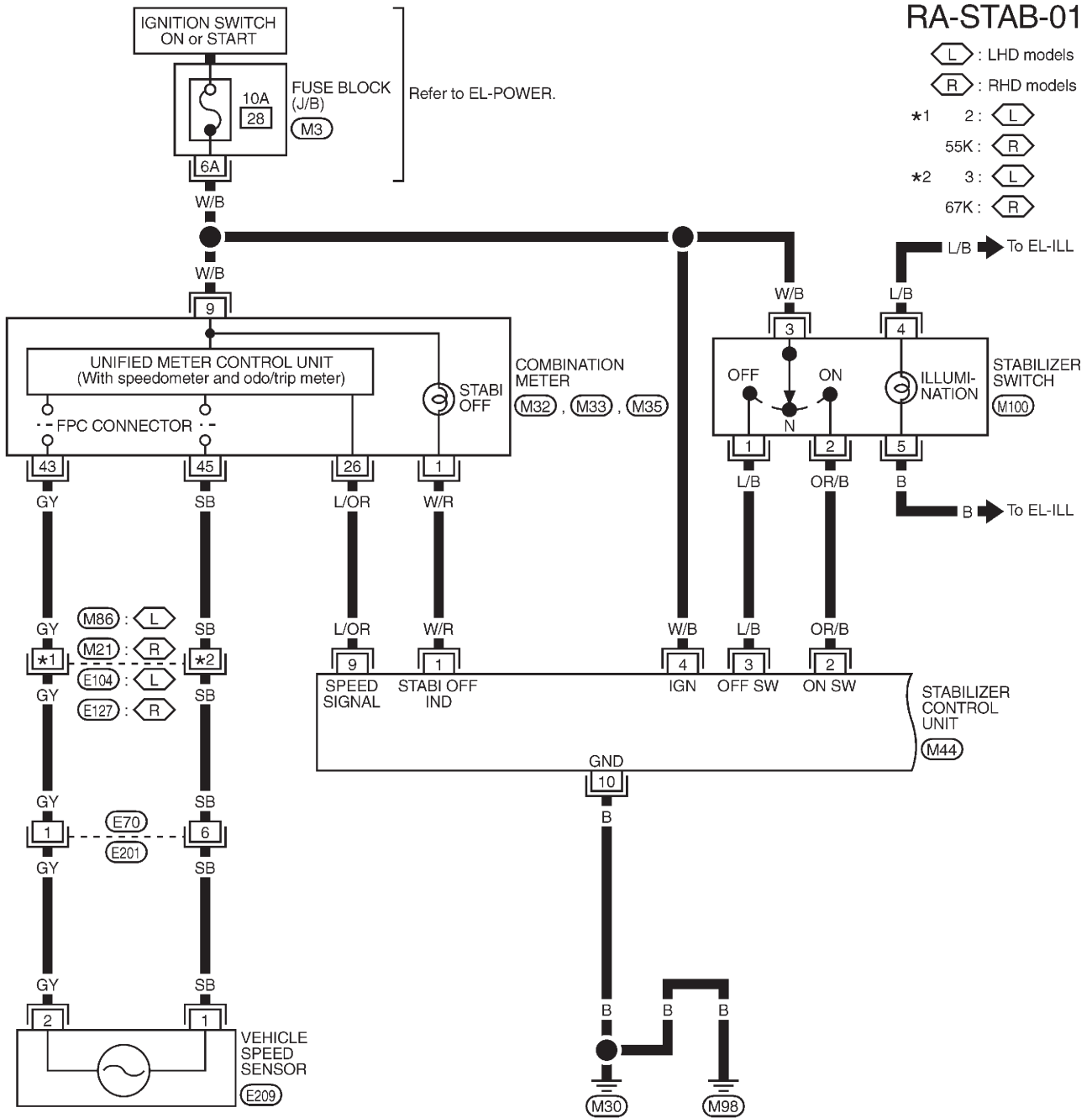
6. Before removing the stabilizer control unit, remove cluster lid C and audio equipment. Refer to the BT section "INSTRUMENT PANEL".

# STABILIZER RELEASE DEVICE

## Wiring Diagram

### RA-STAB-01

- ⬡ : LHD models
- ⬢ : RHD models
- \*1 2: ⬡
- 55K: ⬢
- \*2 3: ⬡
- 67K: ⬢

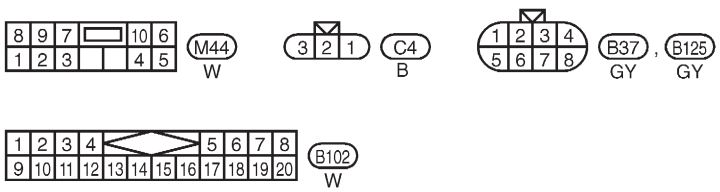
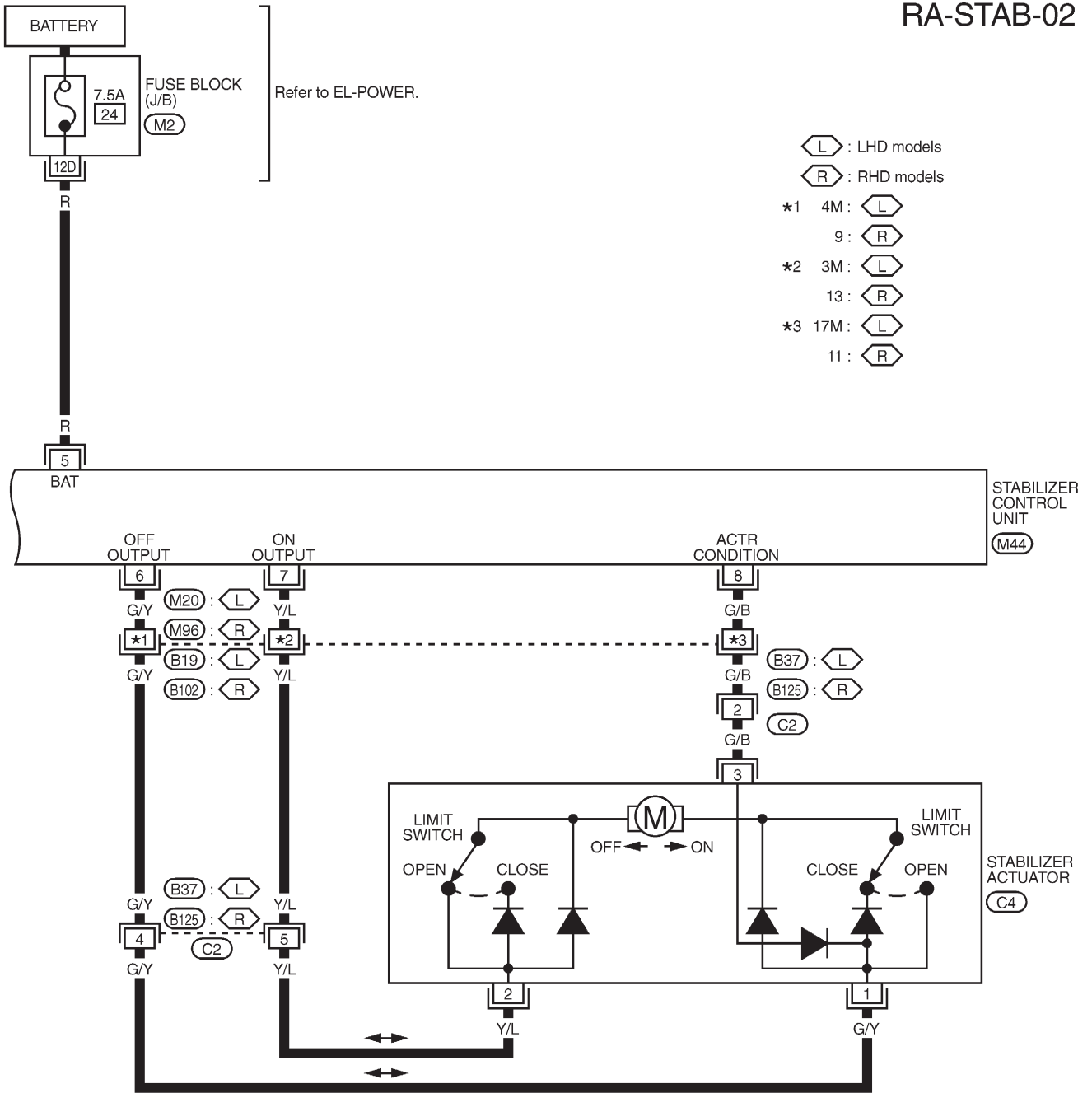


Refer to last page (Foldout page).

- ⬡, ⬢
- ⬡
- ⬡

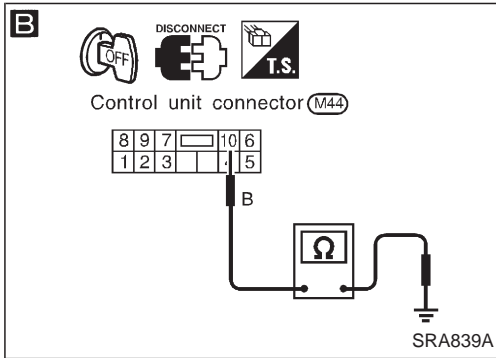
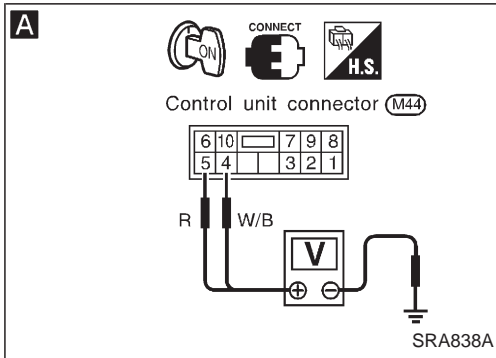
# STABILIZER RELEASE DEVICE Wiring Diagram (Cont'd)

RA-STAB-02



Refer to last page (Foldout page).  
Ⓜ20, Ⓜ19  
Ⓜ2

# STABILIZER RELEASE DEVICE



## Trouble Diagnoses

### DIAGNOSTIC PROCEDURE 1

#### (POWER SUPPLY AND GROUND CIRCUIT CHECK)

**A**

#### CHECK POWER SUPPLY CIRCUIT FOR STABILIZER CONTROL UNIT.

1. Turn ignition switch ON.
2. Check voltage between control unit connector terminals ④, ⑤ and ground.

**Battery voltage should exist.**

NG

Check the following.

- 7.5A fuse [24], 10A fuse [28]
- Harness connector (M44)
- Harness for open or short between control unit and fuse

If NG, repair fuse, harness or connectors.

OK

**B**

#### CHECK GROUND CIRCUIT FOR STABILIZER CONTROL UNIT.

1. Disconnect control unit connector.
2. Check continuity between control unit connector terminal ⑩ and ground.

**Continuity should exist.**

NG

Check the following.

- Harness connector (M44)
- Harness for open or short between control unit and ground

If NG, repair harness or connectors.

OK

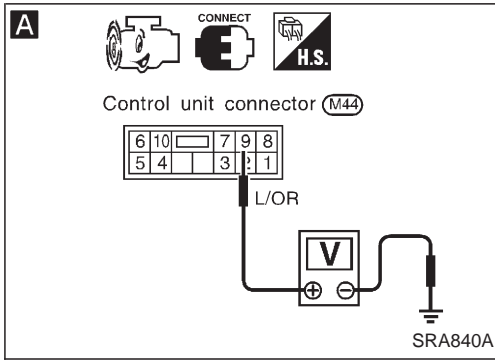
Power supply and ground circuit is OK.

# STABILIZER RELEASE DEVICE

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 2

#### (VEHICLE SPEED SENSOR CIRCUIT CHECK)



**A**

#### CHECK VEHICLE SPEED SENSOR CIRCUIT.

1. Jack up drive wheels.
2. Connect voltmeter between control unit connector terminal ⑨ and ground.
3. Slowly turn wheels.
4. Check deflection of voltmeter vary from 0 to 5 volts.

OK

Vehicle speed sensor is OK.

NG

Does speedometer operate normally?

No

Check speedometer and vehicle speed sensor circuit.

Yes

Check the following.

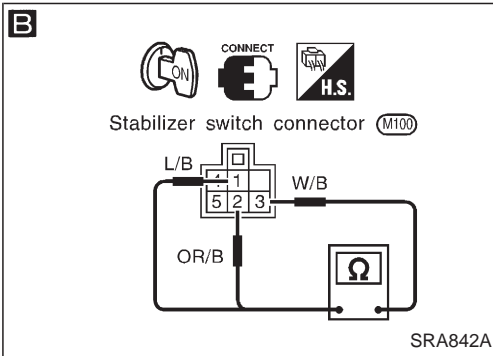
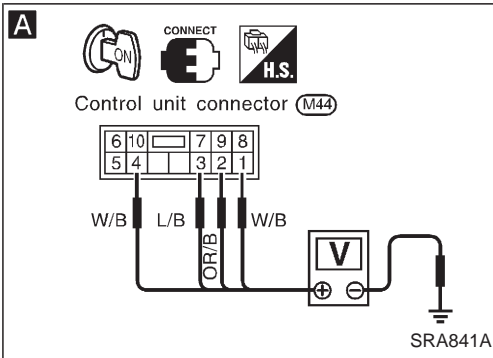
- Harness connector (M44)
  - Harness for open or short between control unit and combination meter
- If NG, repair harness or connectors.

# STABILIZER RELEASE DEVICE

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 3

#### (STABILIZER SWITCH CIRCUIT CHECK)



1. Turn ignition switch ON.  
2. Turn stabilizer switch "OFF" to make sure stabilizer OFF illuminate.

NG → Check the following.  
• 10A fuse (28)  
• Stabilizer off lamp bulb

OK →

**A**

**CHECK POWER SUPPLY FOR STABILIZER SWITCH.**

1. Turn ignition switch ON.  
2. Check voltage between control unit connector terminals (1), (2), (3), (4) and ground.

OK → Stabilizer switch circuit is OK.

Stabilizer switch	Terminal	Volt
ON	(1) - Ground	Battery voltage
	(2) - Ground	Battery voltage
	(3) - Ground	0
	(4) - Ground	Battery voltage
OFF	(1) - Ground	0
	(2) - Ground	0
	(3) - Ground	Battery voltage
	(4) - Ground	Battery voltage

NG →

**B**

**STABILIZER SWITCH CHECK.**

Switch condition	Continuity between terminals	
	(1) - (3)	(2) - (3)
ON	No	Yes
OFF	Yes	No

NG → Replace stabilizer switch.

OK →

Check the following.

- Harness connectors (M32), (M44), (M100)
- Harness for open or short between control unit and stabilizer switch, combination meter
- Combination meter

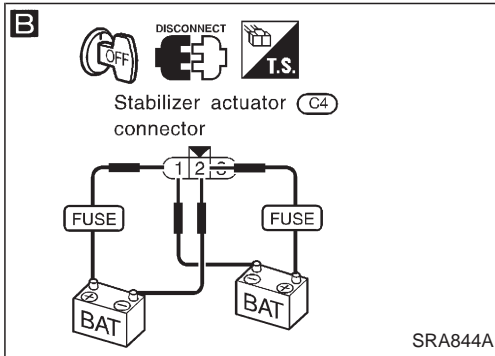
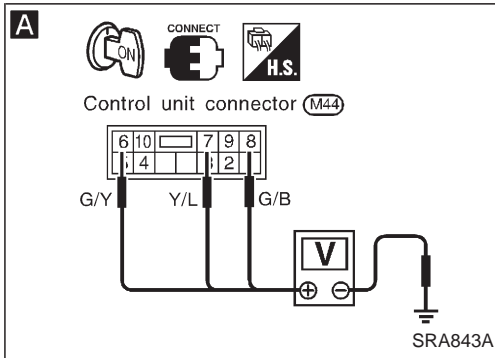
If NG, repair harness or connectors.

# STABILIZER RELEASE DEVICE

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 4

#### (STABILIZER ACTUATOR CIRCUIT CHECK)



**A**

#### CHECK STABILIZER ACTUATOR CIRCUIT.

1. Turn ignition switch ON.
2. Check voltage between control unit connector terminals ⑥, ⑦, ⑧ and ground.

Stabilizer switch	Terminal	Volt
ON	⑥ - Ground	0
	⑦ - Ground	After turning stabilizer switch "ON", battery voltage will exist for about 15 seconds, then drop to 0 volts.
	⑧ - Ground	Approximately 4
OFF	⑥ - Ground	After turning stabilizer switch "OFF", battery voltage will exist for about 15 seconds, then drop to 0 volts.
	⑦ - Ground	0
	⑧ - Ground	Approximately 4

OK

Stabilizer actuator circuit is OK.

NG

**B**

#### CHECK STABILIZER ACTUATOR CHECK.

1. Disconnect stabilizer actuator connector.
2. Check stabilizer actuator by listening for its operating sound while applying battery voltage to the terminals ① and ②.

Terminal	Clutch cylinder	Operating sound
① - ② ⊖ ⊕	OFF → ON	Yes
① - ② ⊕ ⊖	ON → OFF	Yes

NG

Replace stabilizer actuator.

OK

Check the following.

- Harness connectors (M44), (C4)
  - Harness for open or short between control unit and stabilizer actuator
- If NG, repair harness or connectors.



# STABILIZER RELEASE DEVICE

## Trouble Diagnoses (Cont'd)

### INSPECTION OF STABILIZER RELEASE DEVICE CONTROL UNIT



6	10	□	7	9	8
5	4	□	3	2	1

SRA853A

Terminal No.		Parts of check	Specifications	
+	-			
1	Body ground	Stabilizer off indicator	Key switch ON,	Stabilizer switch ON: 0 volts OFF: Approx. 0.6 volts
2		Stabilizer switch	Key switch ON	Stabilizer switch ON: Battery voltage (Approx. 12 volts) OFF: 0 volts
3			Key switch ON	Stabilizer switch ON: 0 volts OFF: Battery voltage (Approx. 12 volts)
4			Key switch	ON: Battery voltage (Approx. 12 volts) OFF: volts
5		Power supply	Always battery voltage (Approx. 12 volts)	
6		Stabilizer actuator	Key switch ON	Stabilizer switch ON: 0 volts OFF: After turning stabilizer switch "OFF", battery voltage (Approx. 12 volts) will exist for about 15 seconds, then drop to 0 volts.
7			Key switch ON	Stabilizer switch ON: After turning stabilizer switch "ON", battery voltage (Approx. 12 volts) will exist for about 15 seconds, then drop to 0 volts. OFF: 0 volts
8			Key switch	ON: Approx. 4 volts OFF: 0 volts
9		Vehicle speed sensor	During extremely low speeds	Varies from 0 volts to 5 volts
10		Ground		—

# SERVICE DATA AND SPECIFICATIONS (SDS)

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## General Specifications

Suspension type	5-link type rigid with coil spring
Shock absorber type	Double-acting hydraulic
Stabilizer	Standard equipment

## Inspection and Adjustment

### WHEEL BEARING

Total end play	mm (in)	0 (0)
Wheel bearing preload at bearing cage bolt	N (kg, lb)	8.8 - 42.2 (0.9 - 4.3, 2.0 - 9.5)