

SECTION **RSU**  
 REAR SUSPENSION

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

#### Precaution for Technicians Using Medical Electric

INFOID:000000010119447

##### OPERATION PROHIBITION

###### **WARNING:**

- Parts with strong magnet is used in this vehicle.
- Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.

##### NORMAL CHARGE PRECAUTION

###### **WARNING:**

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by PDM (Power Delivery Module) at normal charge operation may affect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not approach motor room [PDM (Power Delivery Module)] at the hood-opened condition during normal charge operation.

##### PRECAUTION AT TELEMATICS SYSTEM OPERATION

###### **WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.

##### PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

###### **WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of Intelligent Key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of Intelligent Key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before Intelligent Key use.

#### Point to Be Checked Before Starting Maintenance Work

INFOID:000000010119448

The high voltage system may starts automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work.

###### **NOTE:**

If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000010119449

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS

# PRECAUTIONS

## < PRECAUTION >

system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

## PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

## Precautions for Suspension

INFOID:000000010119450

- When installing rubber bushings, the final tightening must be carried out under unladen conditions with tires on ground. Spilled oil might shorten the life of rubber bushings. Be sure to wipe off any spilled oil.
- "Unladen conditions" means that fluids and lubricants are full. Tire repair kit and mats are in designated positions.
- After servicing suspension parts, be sure to check wheel alignment.
- Self-lock nuts are not reusable. Always use new ones when installing. Since new self-lock nuts are pre-oiled, tighten as they are.
- The tightening surface must be kept free from oil/grease.
- When jacking up the vehicle with a floor jack, never hang the jack on the suspension beam.

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# PREPARATION


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## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000010119451

Tool name	Description
<p data-bbox="162 415 272 441">Power tool</p>  <p data-bbox="824 632 899 648">PIIB1407E</p>	<p data-bbox="1003 415 1341 443">Loosening nuts, screws and bolts</p>

# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

#### NVH Troubleshooting Chart

INFOID:000000010119452

Use chart below to find the cause of the symptom. If necessary, repair or replace these parts.

Symptom		Possible cause and SUSPECTED PARTS		Reference									
		Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mounting deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	REAR AXLE	TIRE	ROAD WHEEL	BRAKE	
Noise	REAR SUSPENSION	Noise	x	x	x	x	x	x		x	x	x	x
		Shake	x	x	x	x		x		x	x	x	x
		Vibration	x	x	x	x	x			x	x		
		Shimmy	x	x	x	x			x	x	x	x	x
		Shudder	x	x	x					x	x	x	x
		Poor quality ride or handling	x	x	x	x	x		x	x	x	x	

x: Applicable

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## REAR SUSPENSION ASSEMBLY

< PERIODIC MAINTENANCE >

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### PERIODIC MAINTENANCE

#### REAR SUSPENSION ASSEMBLY

##### Inspection

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##### COMPONENT PART

Check the mounting conditions (looseness, backlash) of each component and component conditions (wear, damage) are normal.

##### SHOCK ABSORBER ASSEMBLY

Check for oil leakage, damage, and replace if necessary.

# WHEEL ALIGNMENT

< PERIODIC MAINTENANCE >

## WHEEL ALIGNMENT

### Inspection

INFOID:0000000010119454

### DESCRIPTION

#### CAUTION:

- The adjustment mechanisms of camber and toe-in are not included.
- If camber and toe-in is outside the standard, check front suspension parts for wear and damage. Replace suspect parts if a malfunction is detected.

Measure wheel alignment under unladen conditions.

#### NOTE:

“Unladen conditions” means that fluids and lubricants are full. Tire repair kit and mats are in designated positions.

### PRELIMINARY CHECK

Check the following:

- Tires for improper air pressure and wear. Refer to [WT-51, "Tire Air Pressure"](#).
- Road wheels for runout.
- Wheel bearing axial end play. Refer to [RAX-6, "Inspection"](#).
- Shock absorber operation.
- Each mounting point of axle and suspension for looseness and deformation.
- Each of rear suspension beam and shock absorber for cracks, deformation, and other damage.
- Vehicle height (posture).

### GENERAL INFORMATION AND RECOMMENDATIONS

- A four-wheel thrust alignment should be performed.
- This type of alignment is recommended for any NISSAN/INFINITI vehicle.
- The four-wheel “thrust” process helps ensure that the vehicle is properly aligned and the steering wheel is centered.
- The alignment rack itself should be capable of accepting any NISSAN/INFINITI vehicle.
- The rack should be checked to ensure that it is level.
- Check the machine is properly calibrated.
- Your alignment equipment should be regularly calibrated in order to give correct information.
- Check with the manufacturer of your specific equipment for their recommended Service/Calibration Schedule.

### ALIGNMENT PROCESS

#### IMPORTANT:

Use only the alignment specifications listed in this Service Manual.

- When displaying the alignment settings, many alignment machines use “indicators”: (Green/red, plus or minus, Go/No Go). **Never use these indicators.**
- The alignment specifications programmed into your machine that operate these indicators may not be correct.
- This may result in an ERROR.
- Most camera-type alignment machines are equipped with both “Rolling Compensation” method and optional “Jacking Compensation” method to “compensate” the alignment targets or head units. “Rolling Compensation” is the preferred method.
- If using the “Rolling Compensation” method, after installing the alignment targets or head units, push or pull on the rear wheel to move the vehicle. **Do not push or pull on the vehicle body.**
- If using the “Jacking Compensation” method, after installing the alignment targets or head units, raise the vehicle and rotate the wheels 1/2 turn both ways.

#### NOTE:

- Do not use the “Rolling Compensation” method if you are using sensor-type alignment equipment.
- Follow all instructions for the alignment machine you're using for more information.

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# REAR SHOCK ABSORBER

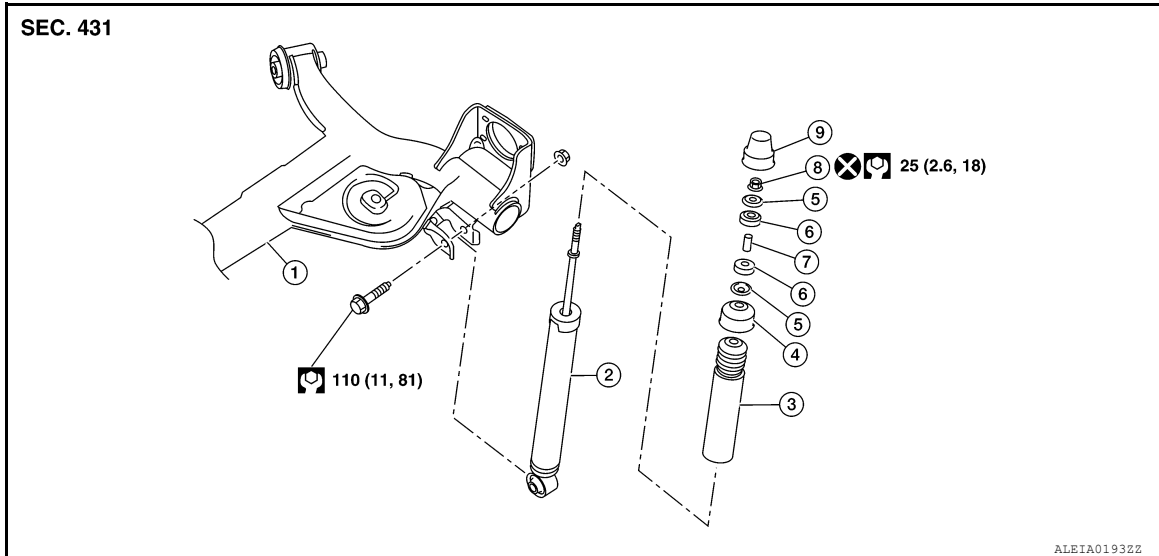
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### REAR SHOCK ABSORBER

Exploded View

INFOID:000000010119455



- |                         |                        |                 |
|-------------------------|------------------------|-----------------|
| 1. Rear suspension beam | 2. Shock absorber      | 3. Bound bumper |
| 4. Bound bumper cover   | 5. Washer              | 6. Bushing      |
| 7. Distance tube        | 8. Piston rod lock nut | 9. Cap          |

: N·m (kg-m, ft-lb)

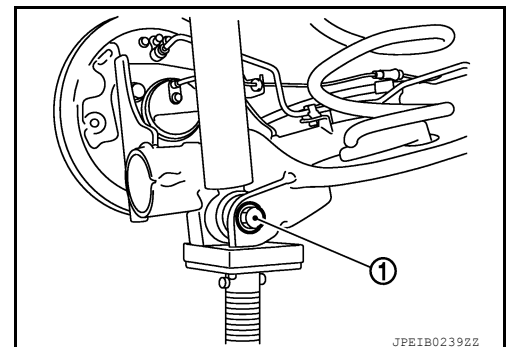
: Always replace after every disassembly.

### Removal and Installation

INFOID:000000010119456

#### REMOVAL

1. Remove wheel and tire using power tool. Refer to [WT-45, "Exploded View"](#).
2. Set suitable jack under rear suspension beam.  
**CAUTION:**
  - Do not damage the suspension beam with a jack.
  - Check the stable condition when using a jack.
3. Remove shock absorber bolt (lower side) (1) using power tool.
4. Remove shock absorber mask. Refer to [INT-40, "Exploded View"](#).
5. Remove cap.



6. Remove piston rod lock nut, and then remove washer and bushing.  
**NOTE:**

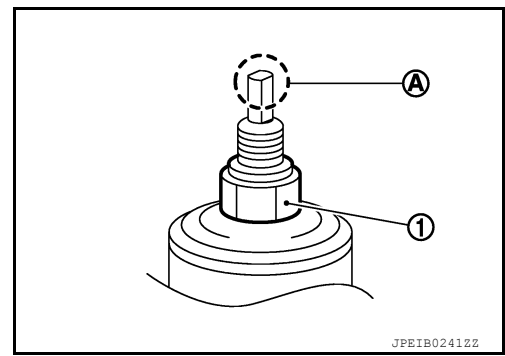


# REAR SHOCK ABSORBER

## < REMOVAL AND INSTALLATION >

To loosen piston rod lock nut (1), fix the tip (A) of the piston rod.

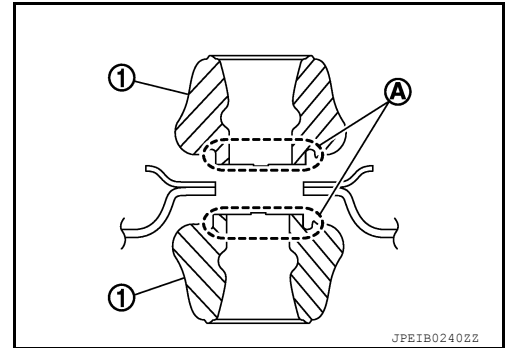
7. Remove shock absorber assembly.
8. Remove bushing, distance tube, washer, bound bumper cover, and bound bumper from shock absorber.
9. Perform inspection after removal. Refer to [RSU-10, "Inspection"](#).



## INSTALLATION

Note the following, and install in the reverse order of removal.

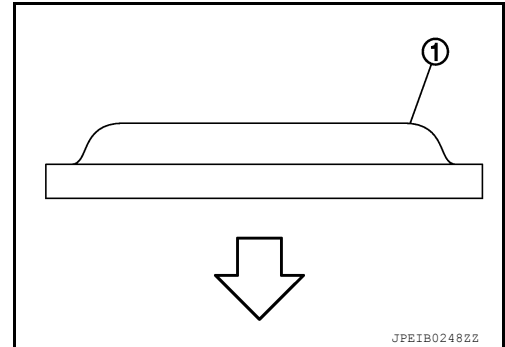
- To install bushings (1), securely insert protrusion (A) into the hole on the vehicle body side.



- Install washer (1) in the direction shown.

← : Bushing side

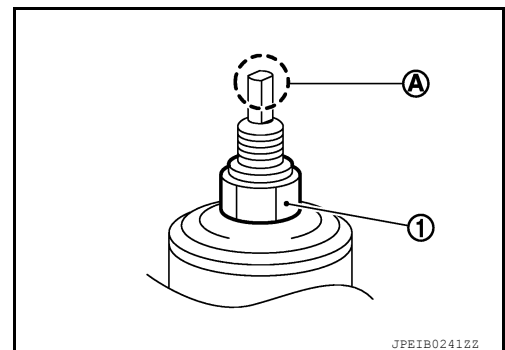
- Perform final tightening of bolts and nuts at the shock absorber lower side (rubber bushing), under unladen conditions with tires on level ground.



- Hold a head (A) of shock absorber piston rod not to have it rotate, then tighten the piston rod lock nut (1) to the specified torque.

### CAUTION:

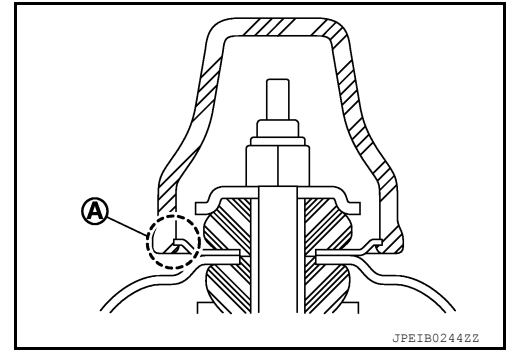
**Do not reuse piston rod lock nut.**



# REAR SHOCK ABSORBER

## < REMOVAL AND INSTALLATION >

- When installing the cap, securely engage the cap groove (A) with the flange on the vehicle side.
- Perform inspection after installation. Refer to [RSU-10. "Inspection"](#).
- After replacing the shock absorber, always follow the disposal procedure to discard the shock absorber. Refer to [RSU-10. "Inspection"](#).



INFOID:000000010119457

## Inspection

### INSPECTION AFTER REMOVAL

#### Shock Absorber

Check the following items, and replace the part if necessary.

- Shock absorber for deformation, cracks, and other damage.
- Piston rod for damage, uneven wear, and distortion.
- Oil leakage

#### Bound Bumper, Bushing

Check for cracks and damage. Replace it if necessary.

#### Washer, Bound Bumper Cover, Distance Tube

- Check for cracks and damage. Replace it if necessary.

### INSPECTION AFTER INSTALLATION

Check wheel alignment. Refer to [RSU-7. "Inspection"](#).

## Disposal

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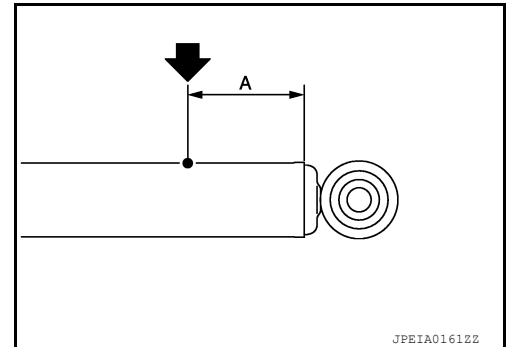
1. Set shock absorber horizontally to the ground with the piston rod fully extracted.
2. Drill 2 – 3 mm (0.08 – 0.12 in) hole at the position (●) from top as shown to release gas gradually.

#### **CAUTION:**

- **Wear eye protection (safety glasses).**
- **Wear gloves.**
- **Be careful with metal chips or oil blown out by the compressed gas.**

#### **NOTE:**

- Drill vertically in the direction show by arrow.
- Drill directly to the outer tube avoiding brackets.
- The gas is clear, colorless, odorless, and harmless.



**(A) : 20 – 30 mm (0.79 – 1.18 in)**

3. Position the drilled hole downward and drain oil by moving the piston rod several times.

#### **CAUTION:**

**Dispose of drained oil according to the law and local regulations.**

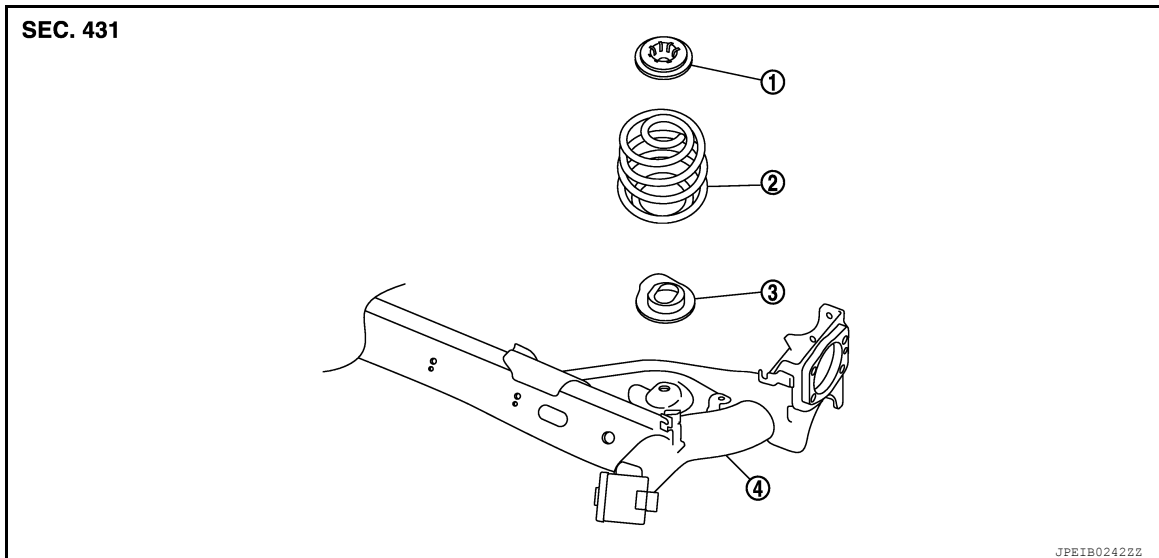
# COIL SPRING

< REMOVAL AND INSTALLATION >

## COIL SPRING

### Exploded View

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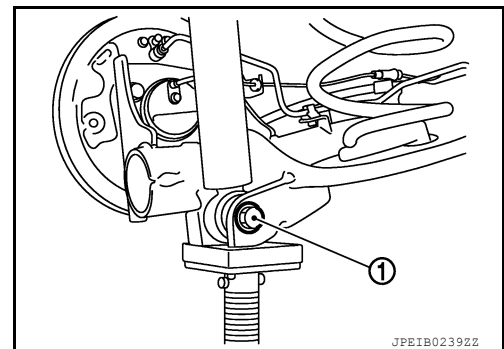
1. Upper rubber seat
2. Coil spring
3. Lower rubber seat
4. Rear suspension beam

### Removal and Installation

INFOID:000000010119460

#### REMOVAL

1. Remove wheel and tire using power tool. Refer to [WT-45, "Exploded View"](#).
2. Set jack under rear suspension beam.  
**CAUTION:**
  - Do not damage the suspension beam with a jack.
  - Check the stable condition when using a jack.
3. Remove rear shock absorber bolts (lower side) (1). Refer to [RSU-8, "Exploded View"](#).
4. Slowly lower jack, then remove upper rubber seat, coil spring and lower rubber seat from rear suspension beam.  
**CAUTION:**  
**Operate while checking that jack supporting status is stable.**
5. Perform inspection after removal. Refer to [RSU-12, "Inspection"](#).



#### INSTALLATION

Note the following, and install in the reverse order of removal.

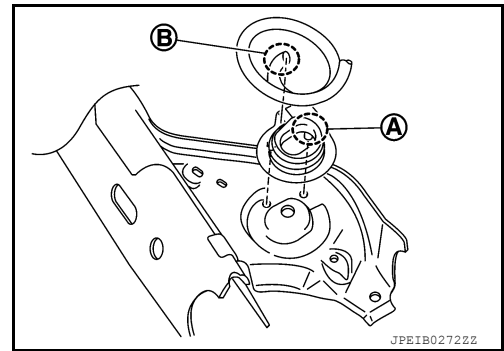
## COIL SPRING

### < REMOVAL AND INSTALLATION >

- Install lower rubber seat with its protrusion (A) on the lower area aligned with the hole of rear suspension beam.

(B) : Coil spring lower end

- Securely install coil spring with the lower end of the major diameter aligned with the steps of lower rubber seat.
- Perform inspection after installation. Refer to [RSU-12, "Inspection"](#).



INFOID:000000010119461

### Inspection

#### INSPECTION AFTER REMOVAL

Check rubber seat and coil spring for deformation, crack, and damage. Replace it if necessary.

#### INSPECTION AFTER INSTALLATION

Check wheel alignment. Refer to [RSU-7, "Inspection"](#).

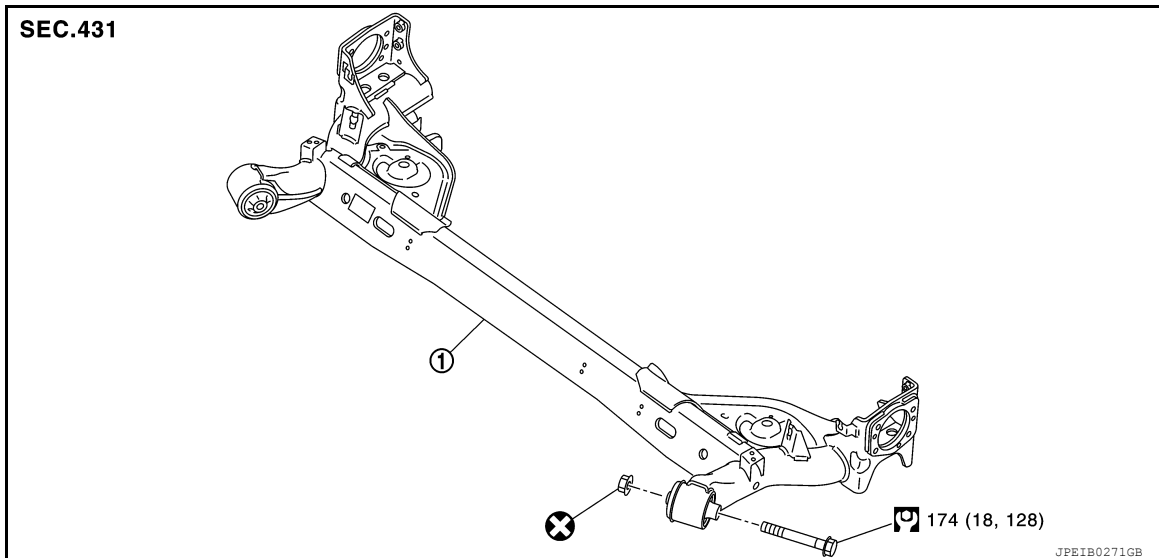
# REAR SUSPENSION BEAM

< REMOVAL AND INSTALLATION >

## REAR SUSPENSION BEAM

Exploded View

INFOID:000000010119462



1. Rear suspension beam

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

## Removal and Installation

INFOID:000000010119463

### REMOVAL

1. Remove wheel and tire using power tool. Refer to [WT-45, "Exploded View"](#).
2. Drain brake fluid. Refer to [BR-493, "Draining"](#).
3. Remove wheel sensor and sensor harness. Refer to [BRC-159, "REAR WHEEL SENSOR : Removal and Installation"](#).
4. Remove brake caliper assembly. Refer to [BR-526, "BRAKE CALIPER ASSEMBLY : Removal and Installation"](#).
5. Remove disc rotor. Refer to [RAX-7, "Removal and Installation"](#).
6. Remove parking brake shoe assembly. Refer to [PB-12, "Removal and Installation"](#).
7. Remove parking brake cable from back plate and rear suspension beam. Refer to [PB-10, "Removal and Installation"](#).
8. Separate brake hose and brake tube. Refer to [BR-507, "REAR : Removal and Installation"](#).
9. Set suitable jack under rear suspension beam.

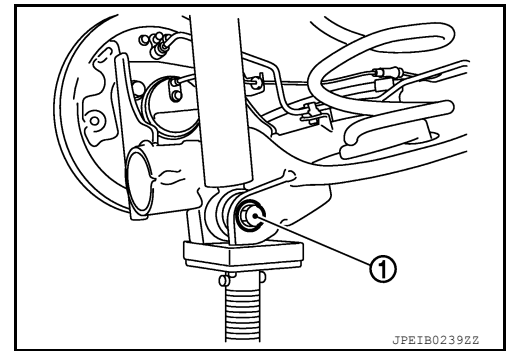
### CAUTION:

- Do not damage the suspension beam with a jack.
- Check the stable condition when using a jack.

## REAR SUSPENSION BEAM

### < REMOVAL AND INSTALLATION >

10. Remove shock absorber bolts (lower side) (1) using power tool. Refer to [RSU-8, "Removal and Installation"](#).
11. Remove coil spring. Refer to [RSU-11, "Removal and Installation"](#).
12. Remove rear suspension beam bolts and nuts.
13. Slowly lower jack, remove rear suspension beam from vehicle.  
**CAUTION:**  
**Operate while checking that jack supporting status is stable.**
14. Remove wheel hub assembly using power tool. Refer to [RAX-7, "Removal and Installation"](#).
15. Perform inspection after removal. Refer to [RSU-14, "Inspection"](#).



### INSTALLATION

Note the following, and install in the reverse order of removal.

#### **CAUTION:**

**Do not reuse rear suspension beam nut.**

- Perform final tightening of rear suspension beam installation position (rubber bushing), under unladen conditions with tires on level ground.
- Perform inspection after installation. Refer to [RSU-14, "Inspection"](#).

### Inspection

INFOID:000000010119464

#### INSPECTION AFTER REMOVAL

Check rear suspension beam for deformation, cracks or damage. Replace the part if necessary.

#### INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to [BRC-159, "REAR WHEEL SENSOR : Exploded View"](#).
2. Adjust parking brake. Refer to [PB-6, "Adjustment"](#).
3. Check wheel alignment. Refer to [RSU-7, "Inspection"](#).

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

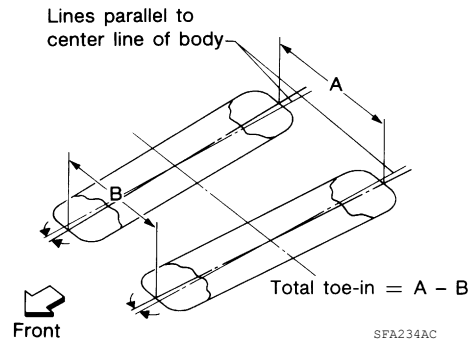
## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Wheel Alignment

INFOID:000000010119465

Tire size		205/55R16	215/50R17
Camber Degree minute (Decimal degree)	Minimum	0° 59' (0.98°)	
	Nominal	1° 29' (1.48°)	
	Maximum	1° 59' (1.98°)	



Toe-in	Distance (A - B)	Minimum	Out 1.5 mm (Out 0.059 in)	Out 1.6 mm (Out 0.063 in)
		Nominal	In 3.3 mm (In 0.130 in)	In 3.4 mm (In 0.134 in)
		Maximum	In 8.1 mm (In 0.319 in)	In 8.4 mm (In 0.331 in)
	Angle (LH and RH) Degree minute (Decimal degree)	Minimum	Out 0° 09' (Out 0.15°)	
		Nominal	In 0° 19' (In 0.32°)	
		Maximum	In 0° 47' (In 0.78°)	

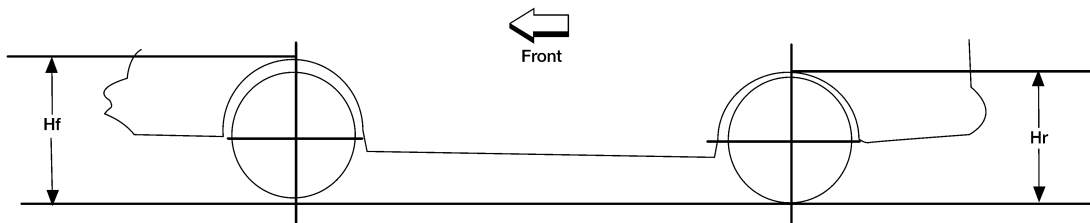
Measure value under unladen\* conditions.

\*: Fluids and lubricants are full. Tire repair kit and mats are in designated positions.

#### Wheelarch Height

INFOID:000000010119466

#### UNITED STATES



LEIA0085E

Tire size	205/55R16	215/50R17
Front (Hf)	706 mm (27.80 in)	714 mm (28.11 in)
Rear (Hr)	708 mm (27.87 in)	714 mm (28.11 in)

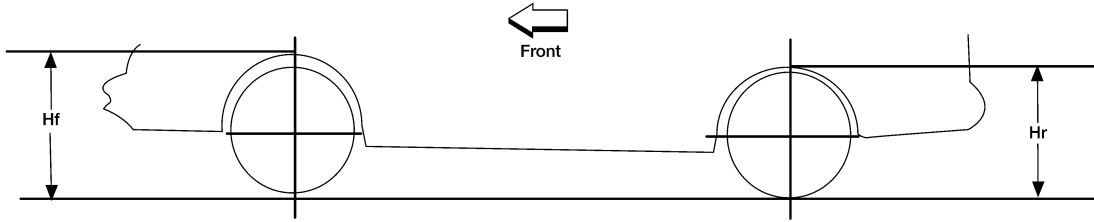
Measure value under unladen\* conditions.

\*: Fluids and lubricants are full. Tire repair kit and mats are in designated positions.

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

CANADA



LEIA0085E

Tire size	205/55R16	215/50R17
Front (Hf)	706 mm (27.80 in)	714 mm (28.11 in)
Rear (Hr)	709 mm (27.91 in)	715 mm (28.15 in)

Measure value under unladen\* conditions.

\*:Fluids and lubricants are full. Tire repair kit and mats are in designated positions.