SECTION RSU
REAR SUSPENSION

CONTENTS

PRECAUTION

PRECAUTIONS

Precaution for Technicians Using Medical Electric

INFOID:0000000007073116

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 on board charger at normal charge operation may effect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not enter the vehicle compartment (including luggage room) 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

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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.

Precautions for Suspension

INFOID:0000000006827777

- 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 mean that fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

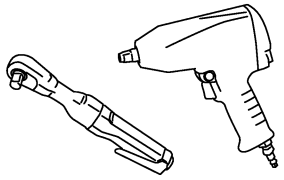
- After servicing suspension parts, be sure to check wheel alignment.
- Self-lock nuts are not reusable. Always use new ones when installing. Since new self-lock nuts are pre-oiled, tighten as they are.
- The tightening surface must be kept free from oil/grease.
- When jacking up the vehicle with a floor jack, never hang the jack on the suspension beam.

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000007022685

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000006827778

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

Reference page			RSU-8, RSU-11, RSU-13	RSU-8	—	—	RSU-12	RSU-8, RSU-11, RSU-13	RSU-7	NVH in RAX and RSU sections	NVH in WT section	NVH in WT section	NVH in BR section
Possible cause and SUSPECTED PARTS			Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mounting deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	REAR AXLE AND REAR SUSPENSION	TIRE	ROAD WHEEL	BRAKE
Symptom	REAR SUSPENSION	Noise	×	×	×	×	×	×		×	×	×	×
		Shake	×	×	×	×		×		×	×	×	×
		Vibration	×	×	×	×	×			×	×		
		Shimmy	×	×	×	×			×	×	×	×	×
		Judder	×	×	×					×	×	×	×
		Poor quality ride or handling	×	×	×	×	×		×	×	×	×	

×: Applicable

PERIODIC MAINTENANCE

REAR SUSPENSION ASSEMBLY

Inspection

INFOID:0000000006827795

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

Inspection

INFOID:0000000006827796

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 fuel, engine coolant, and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

PRELIMINARY CHECK

Check the following:

- Tires for improper air pressure and wear. Refer to WT-50, "Tire Air Pressure".
- Road wheels for runout.
- Wheel bearing axial end play. Refer to RAX-5, "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.
- Some newer alignment machines are equipped with an optional “Rolling Compensation” method to “compensate” the sensors (alignment targets or head units). **Never use this “Rolling Compensation” method.**
  - Use the “Jacking Compensation Method”. After installing the alignment targets or head units, raise the vehicle and rotate the wheels 1/2 turn both ways.
  - See Instructions in the alignment machine you're using for more information on this.

REMOVAL AND INSTALLATION

REAR SHOCK ABSORBER

Exploded View

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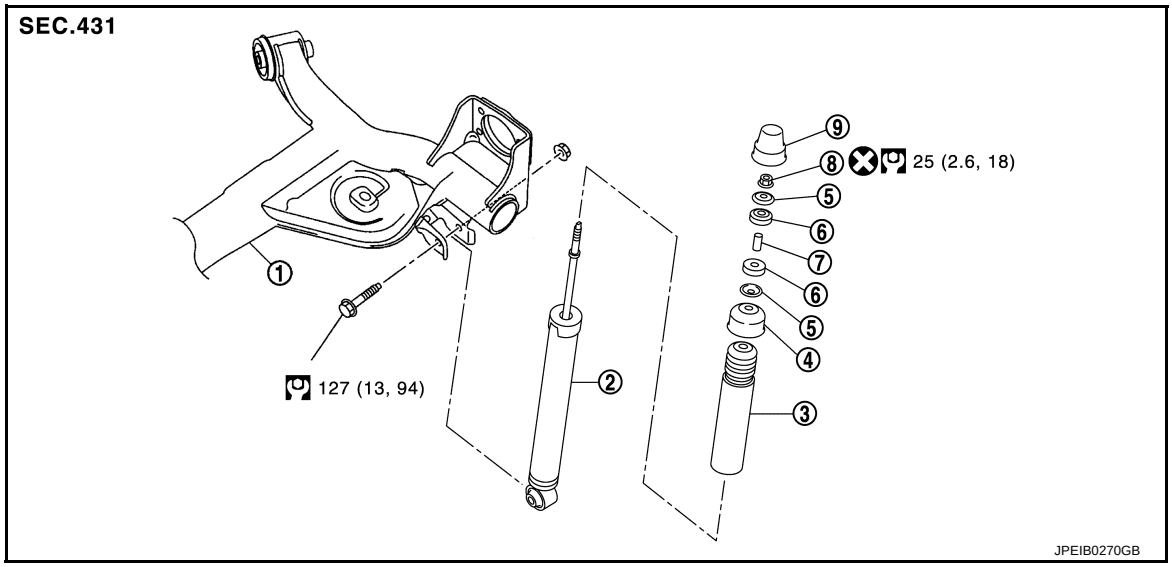


1. Rear suspension beam
2. Shock absorber
3. Bound bumper
4. Bound bumper cover
5. Washer
6. Bushing
7. Distance tube
8. Piston rod lock nut
9. Cap

: Always replace after every disassembly.

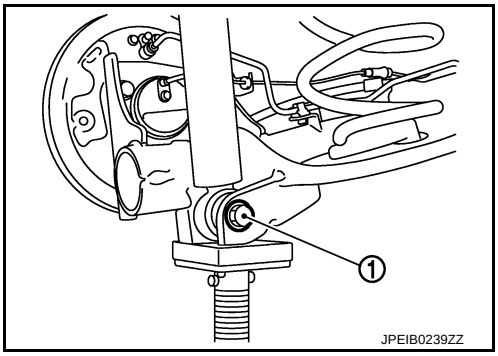
: N·m (kg-m, ft-lb)

Removal and Installation

INFOID:0000000006827782

REMOVAL

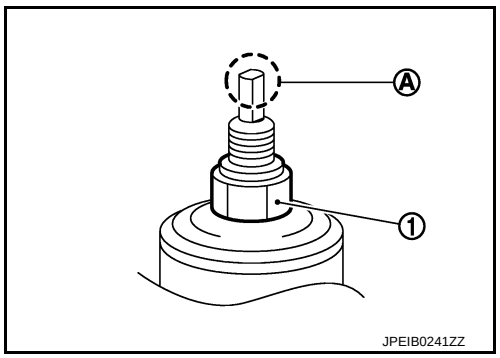
1. Remove tires with power tool. Refer to WT-45, "Exploded View".
2. Set suitable jack under rear suspension beam.
   CAUTION:
   - **Never damage the suspension beam with a jack.**
   - **Check the stable condition when using a jack.**
3. Remove shock absorber mounting bolt (lower side) (1) with power tool.
4. Remove shock absorber mask. Refer to INT-32, "Exploded View".
5. Remove cap.



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

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

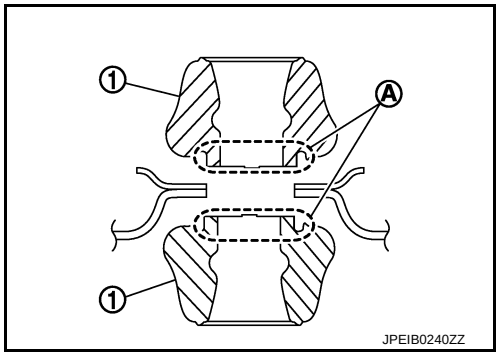
7. Remove shock absorber assembly.
8. Remove bushing, distance tube, washer, bound bumper cover, and bound bumper from shock absorber.
9. Perform inspection after removal. Refer to RSU-10, "Inspection".



INSTALLATION

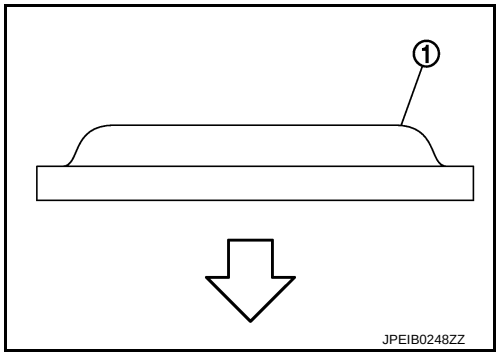
Note the following, and install in the reverse order of removal.

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



- Install washer (1) in the direction shown in the figure.

⇦ : Bushing side

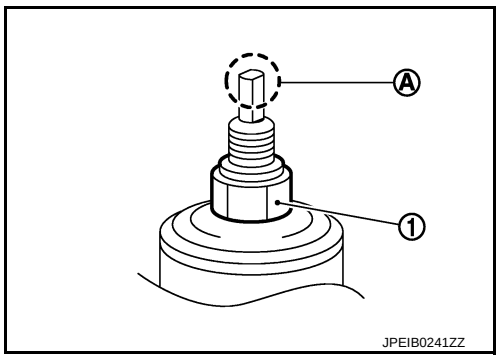


- Perform final tightening of bolts and nuts at the shock absorber lower side (rubber bushing), under unladen conditions with tires on level ground.

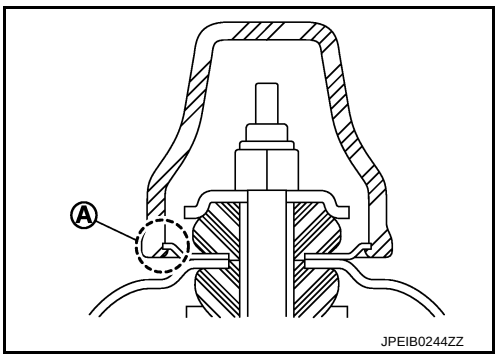
- Hold a head (A) of shock absorber piston rod not to have it rotate, then tighten the piston rod lock nut (1) to the specified torque.

CAUTION:

Never reuse piston rod lock nut.



- 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".



Inspection

INFOID:0000000006827783

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

1. Check wheel alignment. Refer to RSU-7, "Inspection".
2. Adjust neutral position of steering angle sensor. Refer to BRC-59, "Work Procedure".

Disposal

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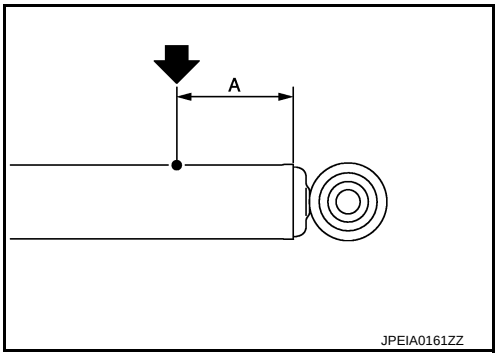
1. Set shock absorber horizontally to the ground with the piston rod fully extracted.
2. Drill 2 – 3 mm (0.08 – 0.12 in) dia. hole at the position (●) from top as shown in the figure to release gas gradually.
   CAUTION:
   - **Wear eye protection (safety glass).**
   - **Wear gloves.**
   - **Be careful with metal chips or oil blown out by the compressed gas.**

   NOTE:
   - Drill vertically in the direction show by arrow.
   - 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

Exploded View

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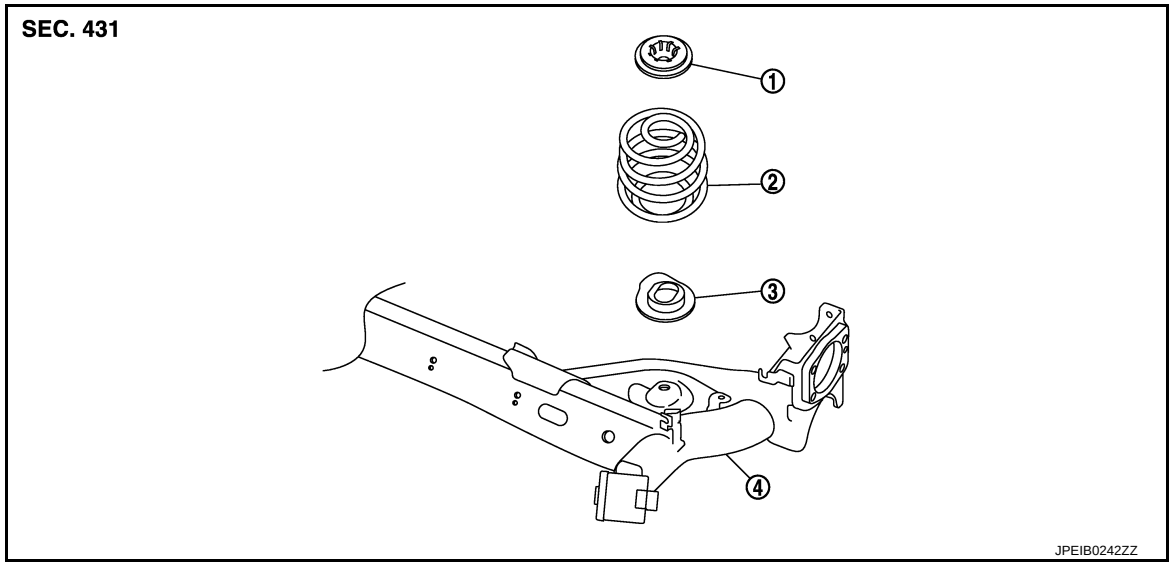


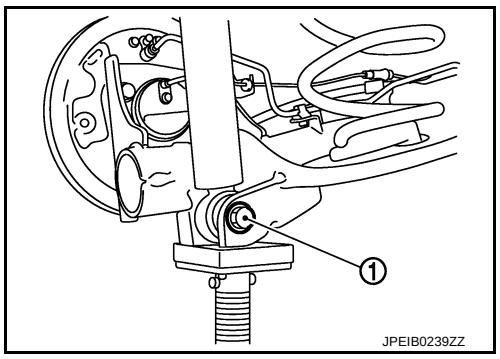
1. Upper rubber seat
2. Coil spring
3. Lower rubber seat
4. Rear suspension beam

Removal and Installation

INFOID:0000000006827786

REMOVAL

1. Remove tires with power tool. Refer to WT-45, "Exploded View".
2. Set jack under rear suspension beam.
   CAUTION:
   - **Never damage the suspension beam with a jack.**
   - **Check the stable condition when using a jack.**
3. Remove rear shock absorber mounting 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".



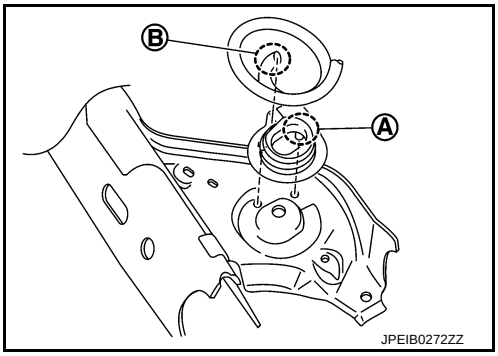
INSTALLATION

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

- 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".



Inspection

INFOID:0000000006827787

INSPECTION AFTER REMOVAL

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

INSPECTION AFTER INSTALLATION

1. Check wheel alignment. Refer to RSU-7, "Inspection".
2. Adjust neutral position of steering angle sensor. Refer to BRC-59, "Work Procedure".

REAR SUSPENSION BEAM

Exploded View

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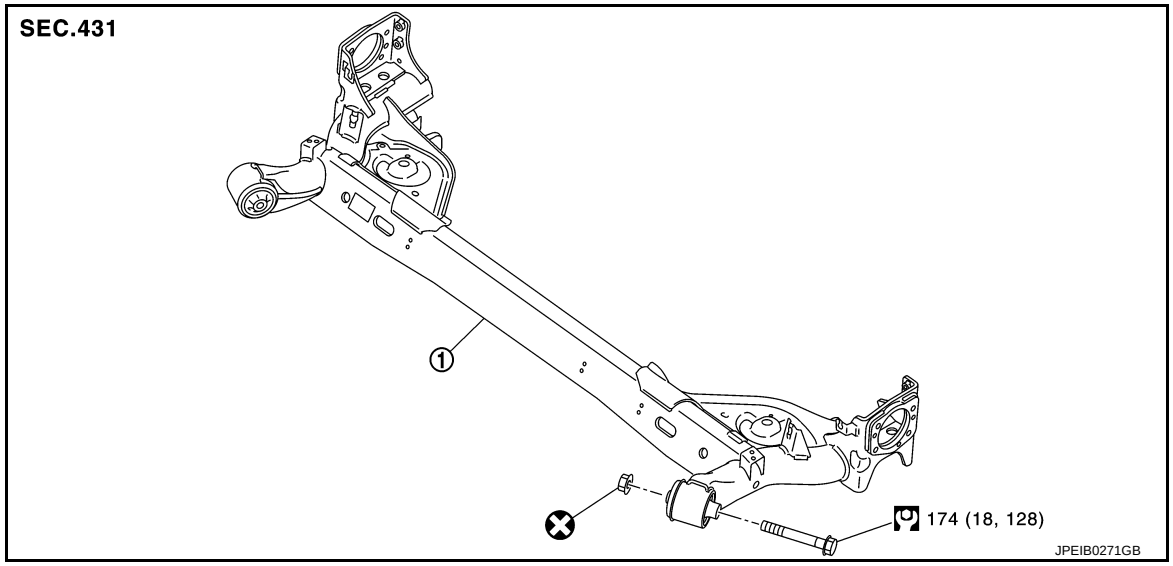


1. Rear suspension beam

: Always replace after every disassembly.

: N·m (kg-m, ft-lb)

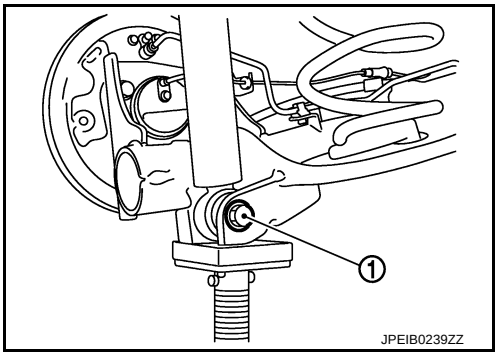
Removal and Installation

INFOID:0000000006827789

REMOVAL

1. Remove tires with power tool. Refer to WT-45, "Exploded View".
2. Drain brake fluid. Refer to BR-204, "Draining".
3. Remove wheel sensor and sensor harness. Refer to BRC-149, "REAR WHEEL SENSOR : Removal and Installation".
4. Remove brake caliper assembly. Refer to BR-236, "BRAKE CALIPER ASSEMBLY : Removal and Installation".
5. Remove disc rotor. Refer to RAX-6, "Removal and Installation".
6. Remove parking brake shoe assembly. Refer to PB-91, "Removal and Installation".
7. Remove parking brake cable from back plate and rear suspension beam. Refer to PB-87, "Removal and Installation".
8. Separate brake hose and brake tube. Refer to BR-218, "REAR : Removal and Installation".
9. Set suitable jack under rear suspension beam.
   CAUTION:
   - **Never damage the suspension beam with a jack.**
   - **Check the stable condition when using a jack.**

10. Remove shock absorber mounting bolts (lower side) (1) with 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 mounting 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 with power tool. Refer to RAX-6, "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.

- Never reuse rear suspension beam mounting 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:0000000006827790

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-149, "REAR WHEEL SENSOR : Exploded View".
2. Adjust parking brake. Refer to PB-81, "Inspection and Adjustment".
3. Check wheel alignment. Refer to RSU-7, "Inspection".
4. Adjust neutral position of steering angle sensor. Refer to BRC-59, "Work Procedure".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Alignment

INFOID:0000000006827791

Item			Standard
Camber Degree minute (Decimal degree)		Minimum	–1° 59′ (–1.98°)
		Nominal	–1° 29′ (–1.48°)
		Maximum	–0° 59′ (–0.99°)
Toe-in	Total toe-in Distance	Minimum	In 1.5 mm (In 0.06 in)
		Nominal	In 5.5 mm (In 0.22 in)
		Maximum	In 9.5 mm (In 0.37 in)
	Toe angle (left wheel or right wheel) Degree minute (Decimal degree)	Minimum	In 0° 04′ 05″ (In 0.068°)
		Nominal	In 0° 14′ 56″ (In 0.249°)
		Maximum	In 0° 25′ 48″ (In 0.43°)

Measure value under unladen* conditions.
*: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

Wheelarch Height

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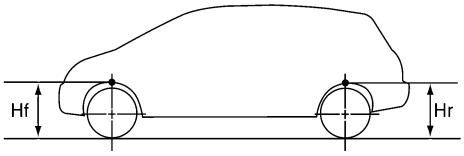
Item	Standard
Front (Hf)	707 mm (27.83 in)
Rear (Hr)	708 mm (27.87 in)



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Measure value under unladen* conditions.
*: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.