

SECTION **RSU**
 REAR SUSPENSION

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RSU

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000011290162

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 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.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000011290163

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

PRECAUTIONS

< PRECAUTION >

5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT.

Precaution for Rear Suspension

INFOID:000000011290164

- When installing the rubber bushings, the final tightening must be done under unladen condition and with the tires on level ground. Oil will shorten the life of the rubber bushings, so wipe off any spilled oil immediately.
- Unladen condition means the fuel tank, engine coolant and lubricants are at the full specification. The spare tire, jack, hand tools, and mats are in their designated positions.
- After installing suspension components, check the wheel alignment.
- Locking nuts are not reusable. Always use new locking nuts for installation. New locking nuts are pre-oiled, do not apply any additional lubrication.

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PREPARATION


< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tool

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Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000011290166

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

Symptom		Possible cause and SUSPECTED PARTS											Reference page										
		Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mounting deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	Stabilizer bar fatigue	PROPELLER SHAFT	DIFFERENTIAL	AXLE		TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKES	STEERING					
Symptom	Noise	x	x	x	x	x	x			x	x			x	x							RSU-9	
	Shake	x	x	x	x		x							x	x								RSU-6
	Vibration	x	x	x	x	x								x									—
	Shimmy	x	x	x	x				x						x	x							—
	Shudder	x	x	x										x	x								RSU-9
	Poor quality ride or handling	x	x	x	x	x			x	x						x	x						RSU-6
																						RSU-9	
																						DLN-192, "NVH Troubleshooting Chart"	
																						DLN-239, "NVH Troubleshooting Chart"	
																						RAX-5, "NVH Troubleshooting Chart"	
																						WT-47, "NVH Troubleshooting Chart"	
																						WT-47, "NVH Troubleshooting Chart"	
																						FAX-5, "NVH Troubleshooting Chart"	
																						BR-7, "NVH Troubleshooting Chart"	
																						ST-9, "NVH Troubleshooting Chart"	

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RSU

REAR SUSPENSION ASSEMBLY

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

REAR SUSPENSION ASSEMBLY

On-Vehicle Inspection and Service

INFOID:000000011290167

Check all of the component mountings for any excessive looseness, or back lash. Check the components for any excessive wear, damage, or abnormal conditions. Repair or replace the components as necessary.

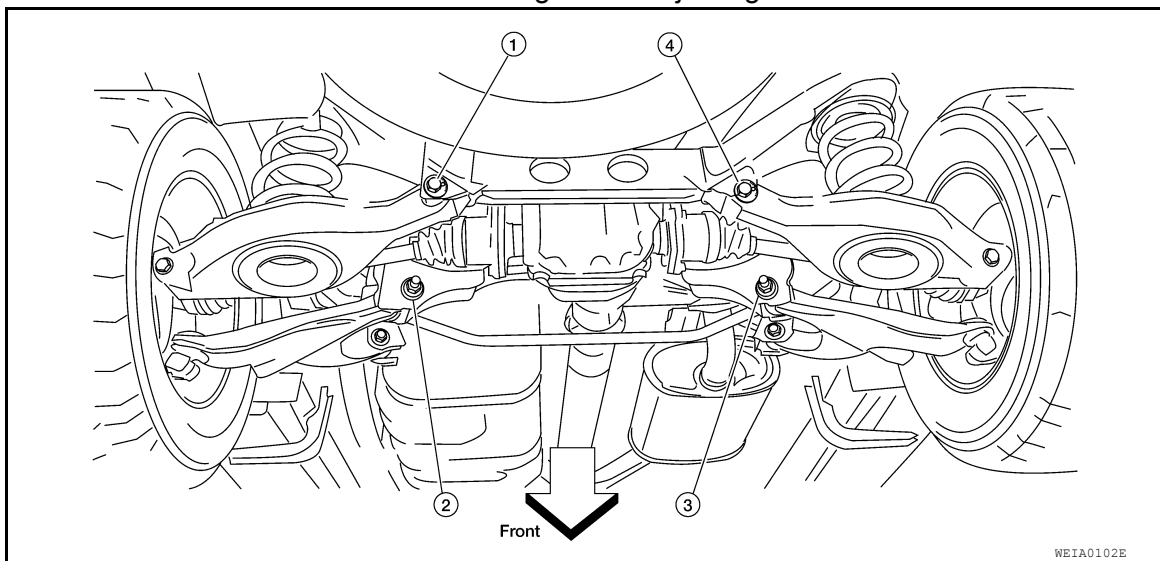
SHOCK ABSORBER INSPECTION (WITH AND WITHOUT THE AIR LEVELING SYSTEM)

- For vehicles without the rear load leveling air suspension system, check the shock absorbers for any oil leaks or damage, and replace as necessary.
- For vehicles with the rear load leveling air suspension system, check the shock absorbers for any air leaks or damage, and replace as necessary.
- For vehicles with the rear load leveling air suspension system, check the hoses for any air leaks or damage, and replace as necessary.

Wheel Alignment Inspection

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Rear Wheel Alignment Adjusting Bolts



1. Rear lower link adjusting bolt, LH
2. Front lower link adjusting bolt, LH
3. Front lower link adjusting bolt, RH
4. Rear lower link adjusting bolt, RH

PRELIMINARY INSPECTION

WARNING:

- **Always adjust the alignment with the vehicle on a flat surface.**
- **Always verify vehicle height before adjusting alignment.**

NOTE:

If alignment is out of specification, inspect and replace any damaged or worn rear suspension parts before making any adjustments.

1. Check and adjust the wheel alignment with the vehicle under unladen conditions. "Unladen conditions" means that the fuel, coolant, and lubricant are full; and that the spare tire, jack, hand tools and mats are in their designated positions.
2. Check the tires for incorrect air pressure and excessive wear.
3. Check the wheels for runout and damage.
4. Check the wheel bearing axial end play.

Axial end play : Refer to [RAX-16. "Wheel Bearing"](#).

5. Check the shock absorbers. Refer to [RSU-6. "On-Vehicle Inspection and Service"](#)

REAR SUSPENSION ASSEMBLY

< PERIODIC MAINTENANCE >

6. Check each mounting point of the suspension components for any excessive looseness or damage.
7. Check each link, arm, and the rear suspension member for any damage.
8. Check the vehicle height. Refer to [RSU-30, "Wheelarch Height \(Unladen*1\)"](#).
 - For vehicles with the rear load leveling air suspension system, if vehicle height is not within ± 10 mm (0.39 in) of the specification, perform the control unit initialization procedure. Refer to [SCS-5, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"](#).

GENERAL INFORMATION AND RECOMMENDATIONS

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

THE ALIGNMENT PROCESS

IMPORTANT: Use only the alignment specifications listed in this Service Manual. Refer to [RSU-29, "Wheel Alignment \(Unladen*1\)"](#).

1. When displaying the alignment settings, many alignment machines use "indicators": (Green/red, plus or minus, Go/No Go). **Do NOT use these indicators.**
 - The alignment specifications programmed into your alignment machine that operate these indicators may not be correct.
 - This may result in an ERROR.
2. Most camera-type alignment machines are equipped with both "Rolling Compensation" method and optional "Jacking Compensation" 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.

CAMBER

1. Measure camber of both the right and left wheels and adjust as necessary to specification.

Camber : Refer to [RSU-29, "Wheel Alignment \(Unladen*1\)"](#).

2. If outside of the specified value, adjust the camber using the adjusting bolt in the front lower link.

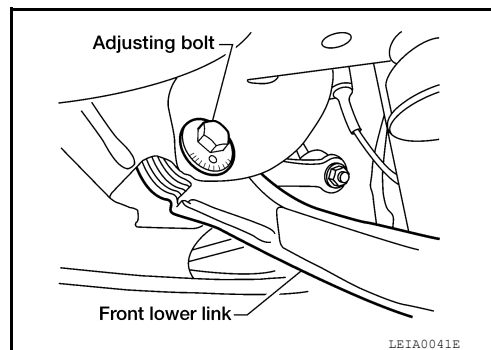
CAUTION:

After adjusting the camber then check the toe-in.

NOTE:

Camber changes about $0^{\circ} 5'$ with each graduation of the adjusting bolt.

3. Tighten the adjusting bolt nuts to specification.



TOE-IN

- Measure the toe-in of the rear wheels. If out of specification, inspect and replace any damaged or worn rear suspension parts before adjusting.

Total toe-in : Refer to [RSU-29, "Wheel Alignment \(Unladen*1\)"](#).

REAR SUSPENSION ASSEMBLY

< PERIODIC MAINTENANCE >

- Adjust toe-in by turning adjusting bolt on rear lower link.

CAUTION:

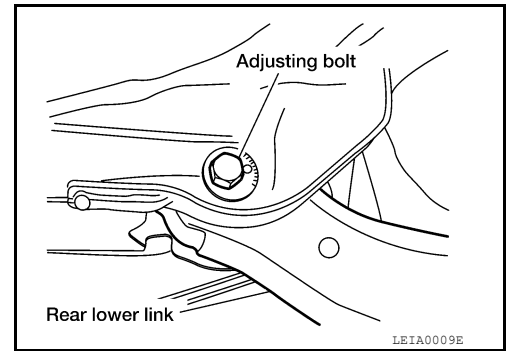
Be sure to adjust equally on RH and LH sides using the adjusting bolt.

NOTE:

Toe changes about 1.5 mm (0.059 in) [one side] with each graduation of the adjusting bolt.

- After adjusting, tighten the adjusting bolt nut to the specified torque.

Adjusting bolt nut : Refer to [RSU-9, "Exploded View"](#).



REAR SUSPENSION ASSEMBLY

< REMOVAL AND INSTALLATION >

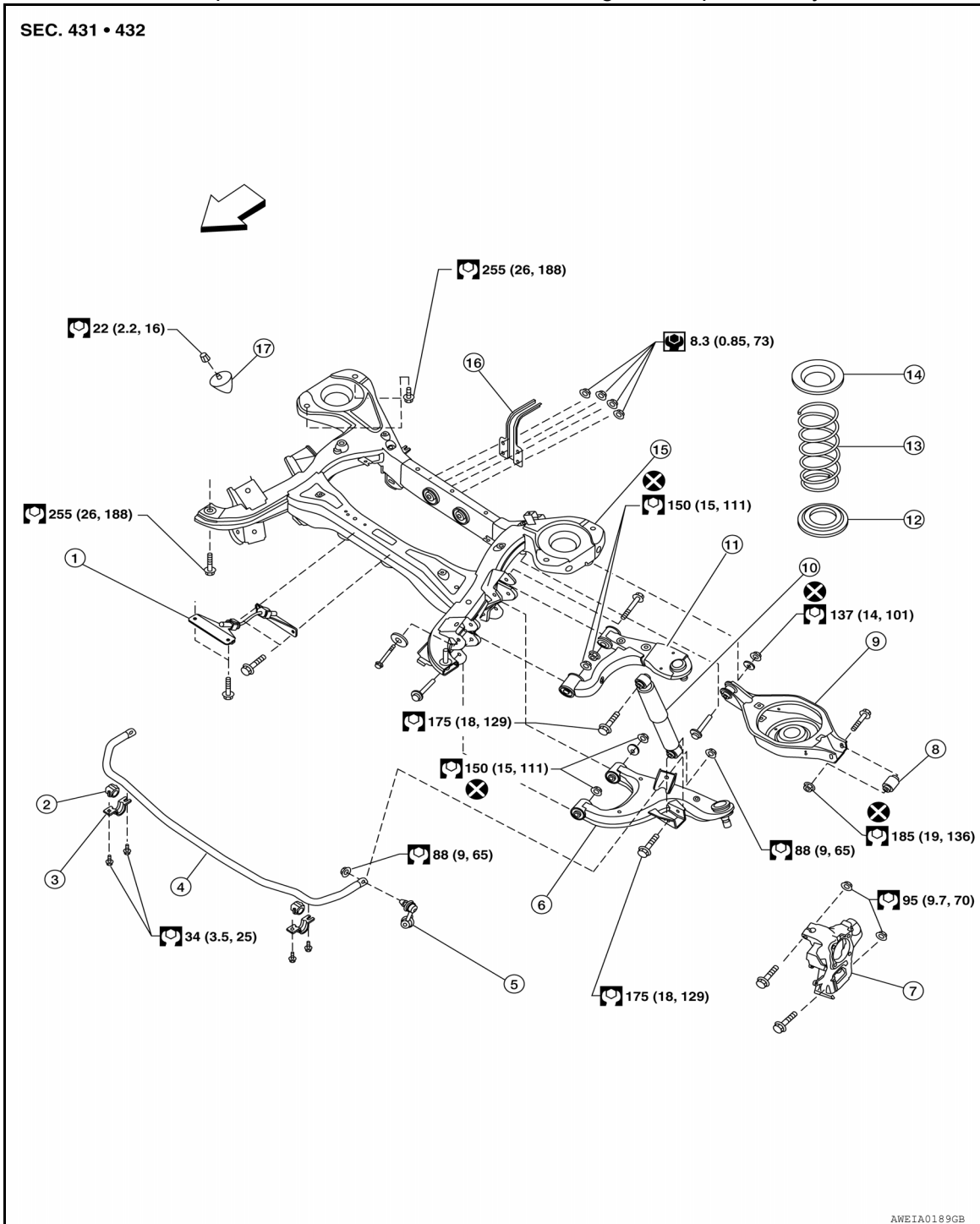
REMOVAL AND INSTALLATION

REAR SUSPENSION ASSEMBLY

Exploded View

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Rear Suspension Without Rear Load Leveling Air Suspension System



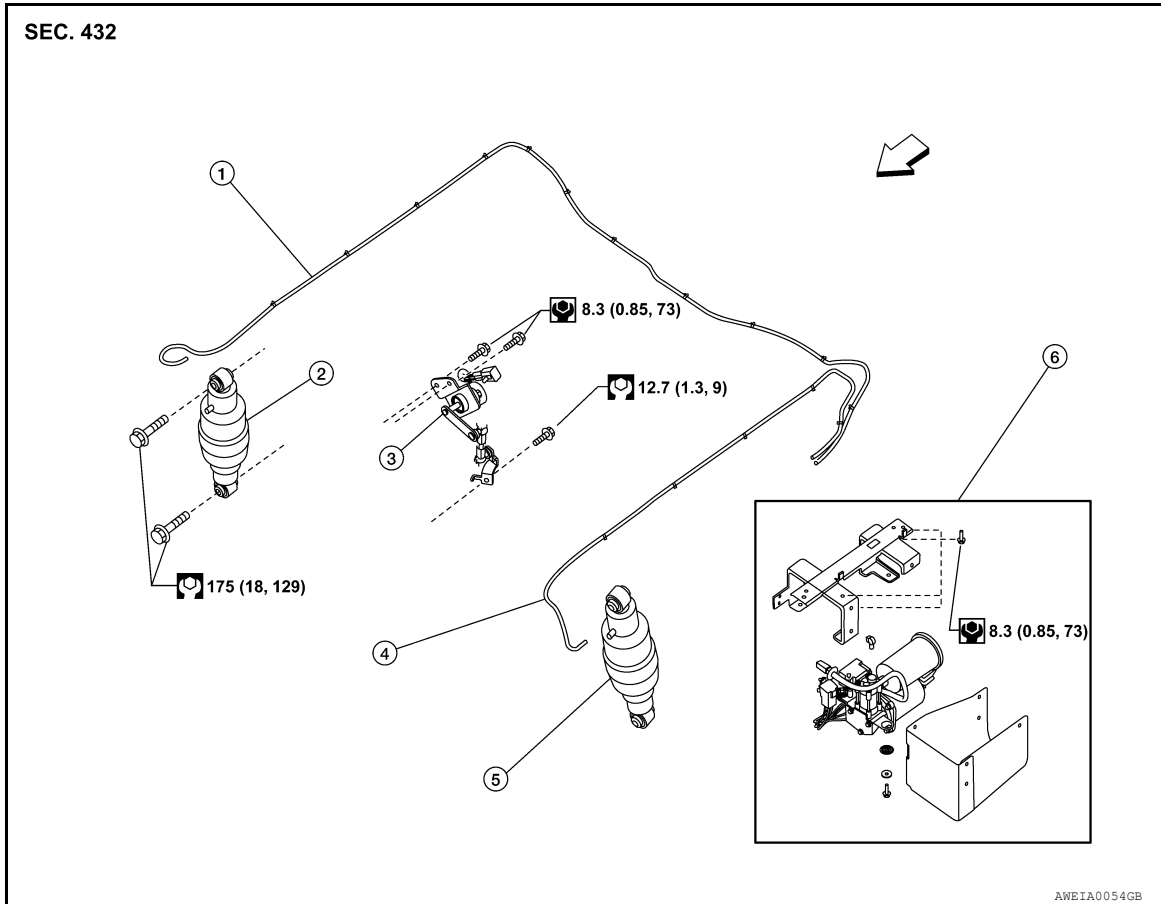
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|---------------------------|---------------------------|-------------------------|
| 1. Seat belt latch anchor | 2. Stabilizer bar bushing | 3. Stabilizer bar clamp |
| 4. Stabilizer bar | 5. Connecting rod | 6. Front lower link |
| 7. Knuckle | 8. Bushing | 9. Rear lower link |
| 10. Shock absorber | 11. Suspension arm | 12. Lower rubber seat |

REAR SUSPENSION ASSEMBLY

< REMOVAL AND INSTALLATION >

- | | | |
|------------------------|-----------------------|----------------------------|
| 13. Coil spring | 14. Upper rubber seat | 15. Rear suspension member |
| 16. Spare tire bracket | 17. Bound bumper | ⇐ Front |

Rear Load Leveling Air Suspension System



- | | | |
|---|-----------------------|--|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly (includes the bracket and the rubber cover) |

⇐ Front

SHOCK ABSORBER

< REMOVAL AND INSTALLATION >

SHOCK ABSORBER

Removal and Installation

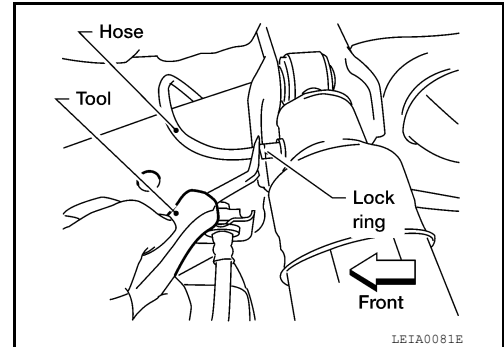
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REMOVAL

1. Remove the wheel and tire using power tool. Refer to [WT-53. "Rotation"](#).
2. If equipped with the rear load leveling air suspension system, perform the following:
 1. Use the CONSULT "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
 2. Disconnect the harness connector from the height sensor.
 3. Disconnect the rear load leveling air suspension hose from the shock absorber.

NOTE:

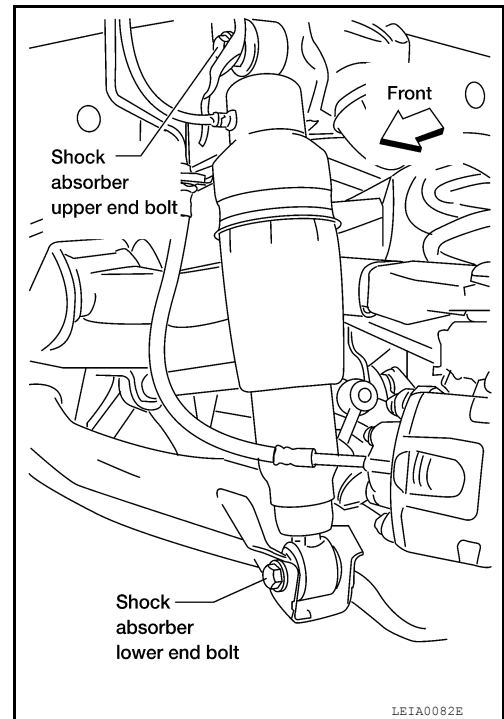
To disconnect the hose, push in on the lock ring using a suitable tool and pull the air hose out.



3. Remove rear fender protector. Refer to [EXT-27. "Removal and Installation"](#).
4. Remove the shock absorber upper and lower end bolts using power tool.
5. Remove the shock absorber.

CAUTION:

If equipped with the rear load leveling air suspension system, do not damage the rubber boot on the shock absorber.



INSTALLATION

Installation is in the reverse order of removal.

- Tighten the shock absorber bolts to specification. Refer to [RSU-9. "Exploded View"](#).

Disposal

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1. Set shock absorber horizontally with the piston rod fully extended.

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SHOCK ABSORBER

< REMOVAL AND INSTALLATION >

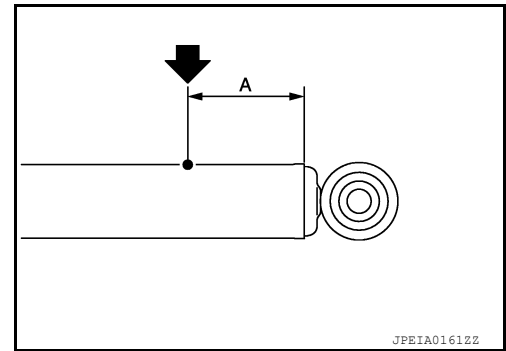
- Drill 2 – 3 mm (0.08 – 0.12 in) hole at the position (●) from top as shown to release gas gradually.

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 this direction (↙) directly into the outer tube avoiding brackets.
- The gas is clear, colorless, odorless, and harmless.



(A) : 20 – 30 mm (0.79 – 1.18 in)

- 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.

SUSPENSION ARM

< REMOVAL AND INSTALLATION >

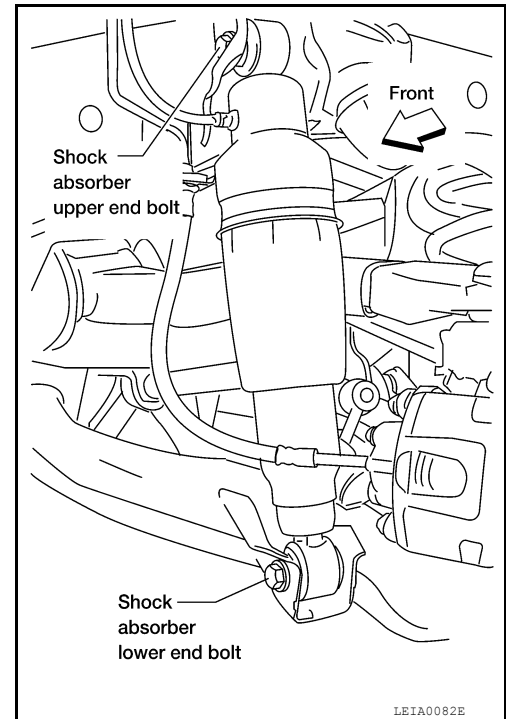
SUSPENSION ARM

Removal and Installation

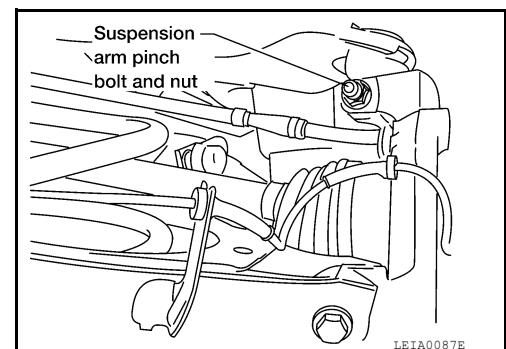
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REMOVAL

1. Remove the rear suspension member using power tool. Refer to [RSU-26. "Removal and Installation"](#).
NOTE:
It is necessary to remove the rear suspension member to remove the front upper bolt from the suspension arm.
2. Remove the shock absorber upper end bolt.
3. Remove the suspension arm upper nuts and bolts on the suspension member side using power tool.



4. Remove the suspension arm pinch bolt and nut on the knuckle side using power tool.
5. Disconnect the suspension arm from the knuckle using a soft hammer.
CAUTION:
Do not damage the ball joint with the soft hammer.
6. Remove the suspension arm.



INSPECTION AFTER REMOVAL

- Check suspension arm for damage, cracks, deformation and replace if necessary.
- Check rubber bushing for damage, cracks and deformation. Replace suspension arm assembly if necessary.
- Before checking, turn ball joint at least 10 revolutions so that ball joint is properly broken in.

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SUSPENSION ARM

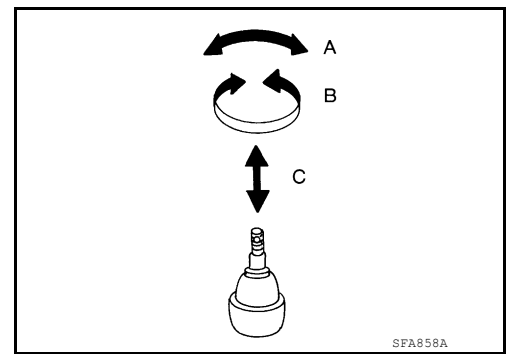
< REMOVAL AND INSTALLATION >

- Check ball joint. Replace suspension arm assembly if any of the following exists:
 - Ball stud is worn.
 - Joint is hard to swing.
 - Play in axial direction is excessive.

Swinging force (A) : Refer to [RSU-29, "Ball Joint"](#).

Turning force (B) : Refer to [RSU-29, "Ball Joint"](#).

Vertical end play (C) : Refer to [RSU-29, "Ball Joint"](#).



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse the suspension arm nuts at the rear suspension member.

- Tighten the nuts and bolts to specification. Refer to [RSU-9, "Exploded View"](#).
- Perform final tightening of nuts and bolts for the links under unladen condition with the tires on level ground. Unladen condition means that the fuel tank, engine coolant and lubricants are at the full specification, and the spare tire, jack, hand tools, and mats are in their designated positions.

FRONT LOWER LINK

< REMOVAL AND INSTALLATION >

FRONT LOWER LINK

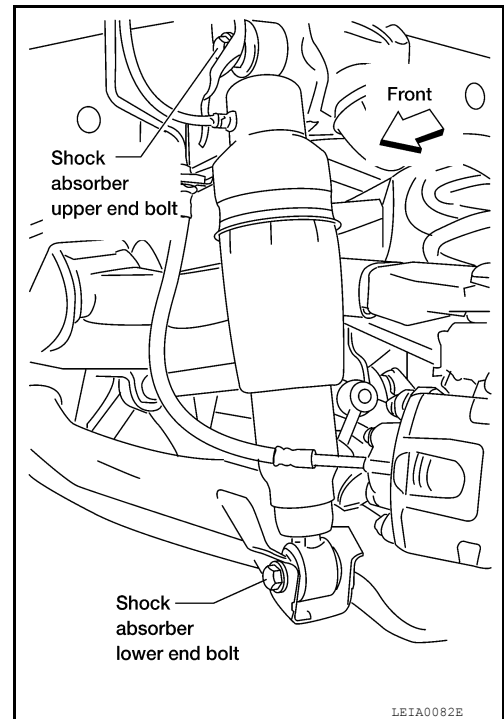
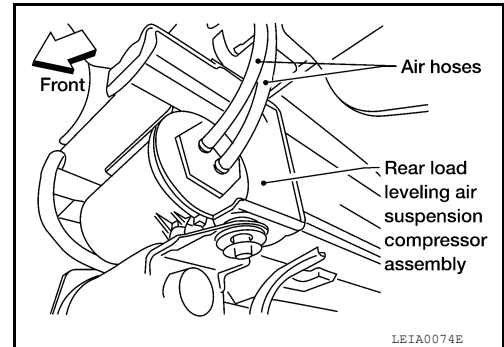
Removal and Installation

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REMOVAL

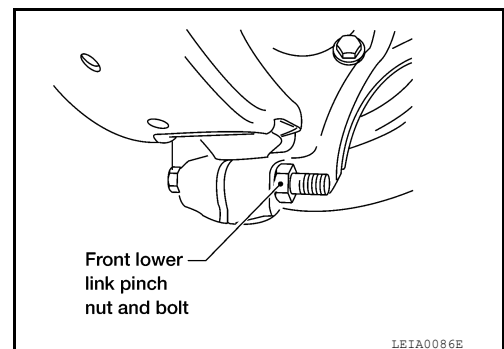
1. Remove the wheel and tire using power tool. Refer to [WT-53. "Rotation"](#).
2. Set suitable jack to support rear lower link.
3. If equipped with the rear load leveling air suspension system, perform the following:
 1. Use the CONSULT "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
 2. Remove the rubber cover to access the rear load leveling air suspension compressor assembly.
 3. Disconnect the rear load leveling air suspension hoses at the rear load leveling air suspension compressor assembly.

NOTE:
To disconnect the hoses, push in on the lock ring using a suitable tool and pull the hose out.
4. Remove the shock absorber lower end bolt.
5. Remove the nut and disconnect the connecting rod from the front lower link.
6. Remove the bolts and the stabilizer bar clamps. Position the stabilizer bar aside.
7. Remove the nuts, the bolt, and the adjusting bolt from the front lower link at the rear suspension member using power tool.



8. Remove the front lower link pinch bolt and nut on the knuckle side using power tool.
9. Disconnect the front lower link from the knuckle using a soft hammer.

CAUTION:
Do not damage the ball joint or axle boot with the soft hammer.
10. Remove the front lower link.



INSPECTION AFTER REMOVAL

- Check the front lower link and bushing for any deformation, crack, or damage. Replace if necessary.
- Check the rubber bushing for damage, cracks and deformation. Replace suspension arm assembly if necessary.

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FRONT LOWER LINK

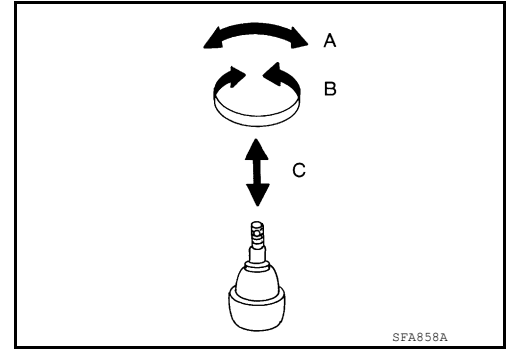
< REMOVAL AND INSTALLATION >

- Before checking, turn ball joint at least 10 revolutions so that ball joint is properly broken in.
- Check the ball joint. Replace suspension arm assembly if any of the following exists:
 - Ball stud is worn.
 - Joint is hard to swing.
 - Play in axial direction is excessive.

Swinging force (A) : Refer to [RSU-29, "Ball Joint"](#).

Turning force (B) : Refer to [RSU-29, "Ball Joint"](#).

Vertical end play (C) : Refer to [RSU-29, "Ball Joint"](#).



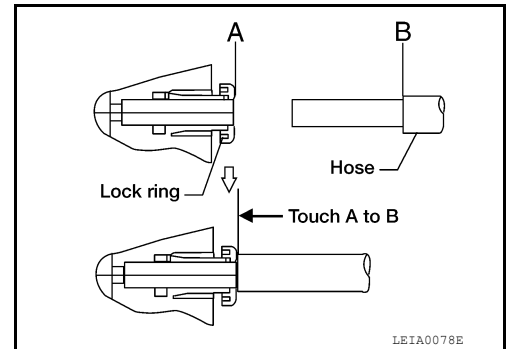
INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse the front lower link nuts at the rear suspension member.

- To connect the rear load leveling air suspension hoses, the lock ring must be fully seated in the fitting. Insert the hose (B) into the lock ring (A) until the lock ring is touching the hose as shown. Pull on the hose to check that it is securely inserted.



- Tighten the nuts and bolts to specification. Refer to [RSU-9, "Exploded View"](#).
- Perform final tightening of nuts and bolts for the links under unladen condition with the tires on level ground. Unladen condition means that the fuel tank, engine coolant and lubricants are at the full specification, and the spare tire, jack, hand tools, and mats are in their designated positions.
- Check the wheel alignment. Refer to [RSU-6, "Wheel Alignment Inspection"](#).
- Adjust the neutral position of the steering angle sensor. Refer to [BRC-8, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).

REAR LOWER LINK & COIL SPRING

< REMOVAL AND INSTALLATION >

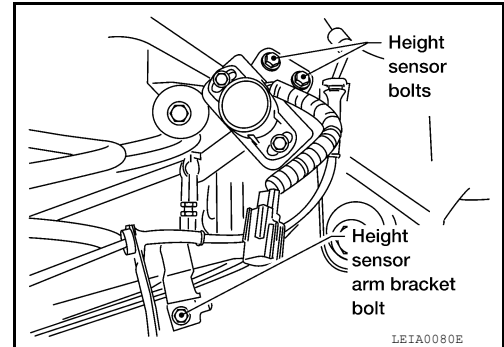
REAR LOWER LINK & COIL SPRING

Removal and Installation

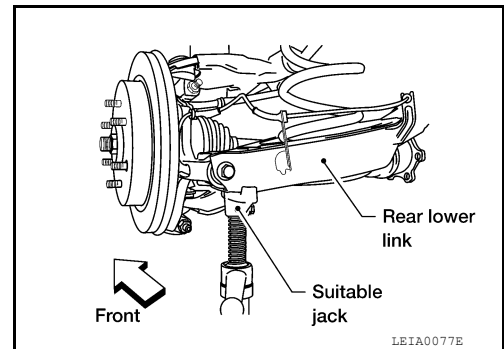
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REMOVAL

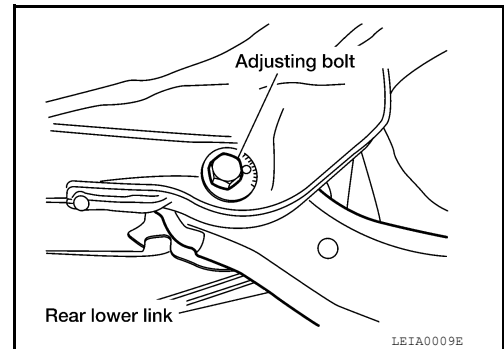
1. Remove the wheel and tire using power tool. Refer to [WT-53. "Rotation"](#).
2. If equipped with rear load leveling air suspension system, perform the following:
 1. Use the CONSULT "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
 2. For removing the LH rear lower link and coil spring, remove the height sensor arm bracket bolt from the rear lower link.



3. Remove the rear wheel sensor harness bracket from the rear lower link.
4. Set a suitable jack to relieve the coil spring tension and support the rear lower link.



5. Loosen the rear lower link adjusting bolt and nut connected to the rear suspension member using power tool.



6. Remove the rear lower link bolt and nut from the knuckle using power tool.
7. Slowly lower the suitable jack to release the coil spring tension.
8. Remove the upper rubber seat, coil spring and lower rubber seat from the rear lower link.
9. Remove the rear lower link adjusting bolt and nut from the rear suspension member using power tool. Remove the rear lower link.

INSPECTION AFTER REMOVAL

Check the coil spring and rubber seats for deformation, cracks, or other damage and replace if necessary.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

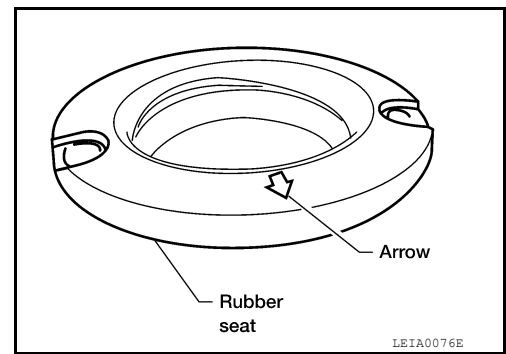
Do not reuse the rear lower link nuts.

- Tighten the nuts and bolts to specification. Refer to [RSU-9. "Exploded View"](#).

REAR LOWER LINK & COIL SPRING

< REMOVAL AND INSTALLATION >

- When installing the upper and lower rubber seats for the rear coil springs, the arrow embossed on the rubber seats must point out toward the wheel and tire assembly.
- Check the wheel alignment. Refer to [RSU-6. "Wheel Alignment Inspection"](#).
- Adjust the neutral position of the steering angle sensor. Refer to [BRC-8. "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).



STABILIZER BAR

< REMOVAL AND INSTALLATION >

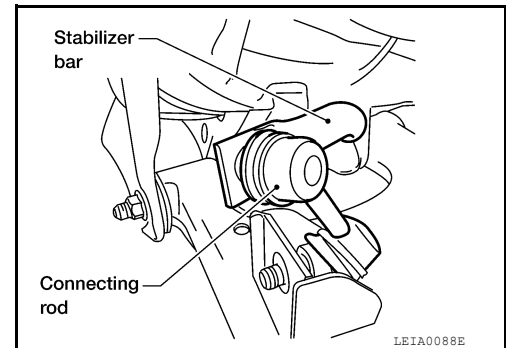
STABILIZER BAR

Removal and Installation

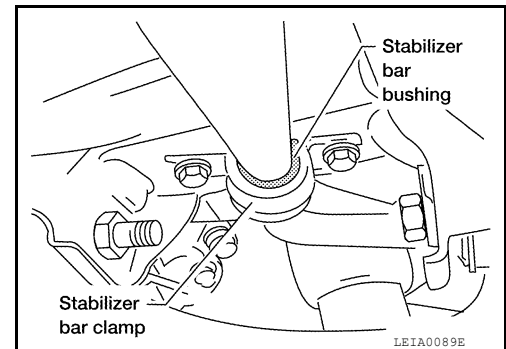
INFOID:000000011290175

REMOVAL

1. Remove the nuts and disconnect the stabilizer bar ends from the connecting rods using power tool.



2. Remove the bolts and the stabilizer bar clamps using power tool.
3. Remove the stabilizer bar bushings.
4. Remove the stabilizer bar.



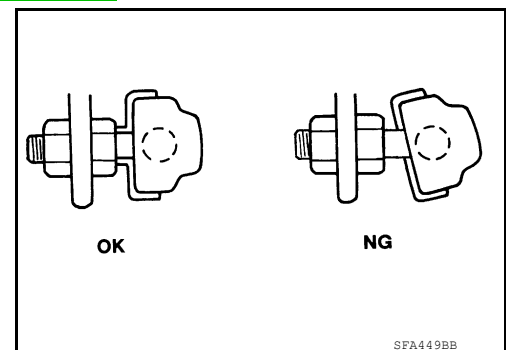
INSPECTION AFTER REMOVAL

- Check the stabilizer bar for any deformation, cracks, or damage and replace if necessary.
- Check the stabilizer bar bushings for deterioration, or cracks and replace if necessary.

INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-9. "Exploded View"](#).
- Install the stabilizer bar with the ball joint sockets properly aligned.



- Install the stabilizer bar bushing and clamp so they are positioned inside of the sideslip prevention clamp on the stabilizer bar.

REAR LOAD LEVELING AIR SUSPENSION COMPRESSOR ASSEMBLY

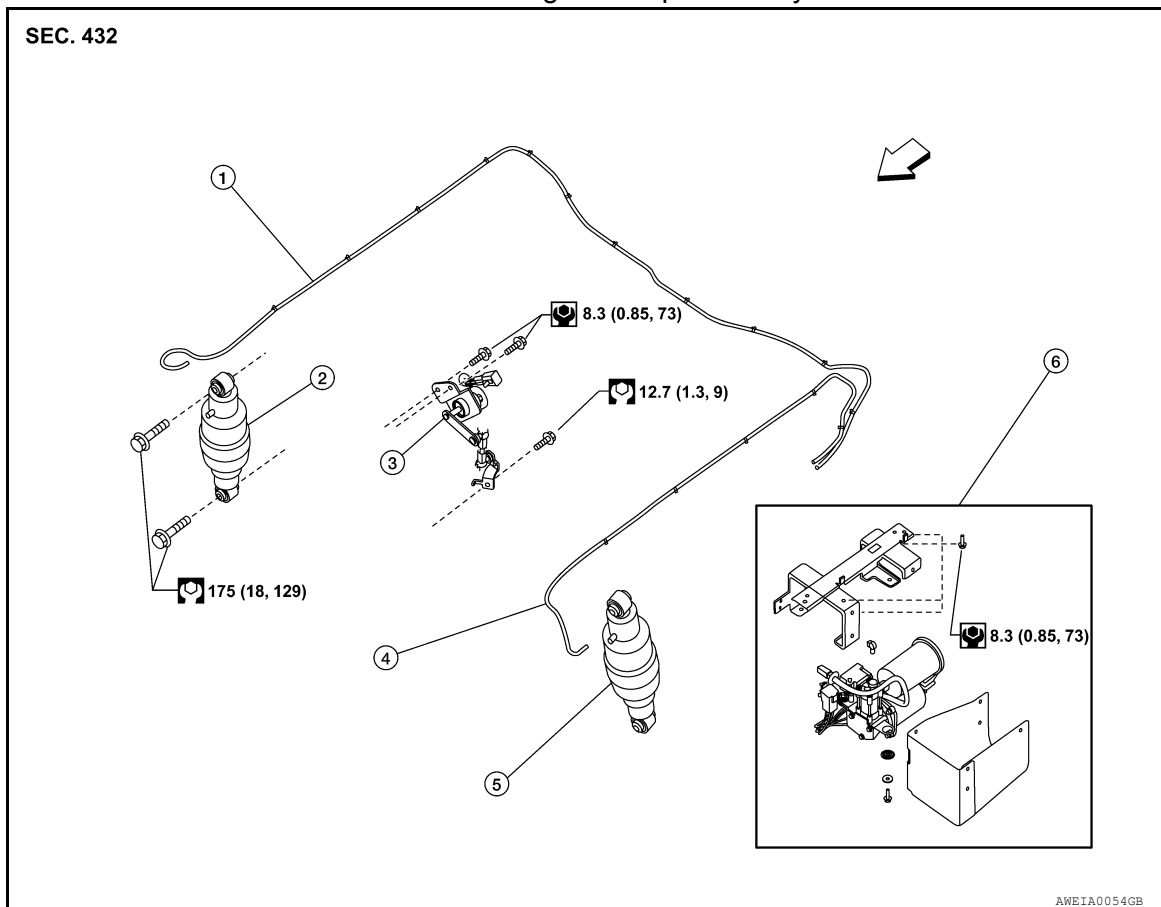
< REMOVAL AND INSTALLATION >

REAR LOAD LEVELING AIR SUSPENSION COMPRESSOR ASSEMBLY

Removal and Installation

INFOID:000000011290176

Rear Load Leveling Air Suspension System



- | | | |
|---|-----------------------|--|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly (includes the bracket and rubber cover) |

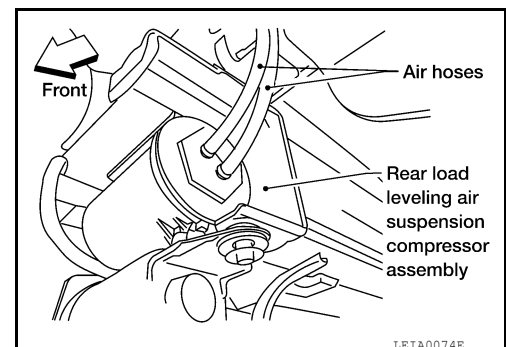
↩ Front

REMOVAL

1. Use CONSULT "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
2. Disconnect the harness connectors from the rear load leveling air suspension compressor assembly.
3. Remove the rubber cover to access the rear load leveling air suspension compressor assembly.
4. Disconnect the rear load leveling air suspension hoses at the rear load leveling air suspension compressor assembly.

NOTE:

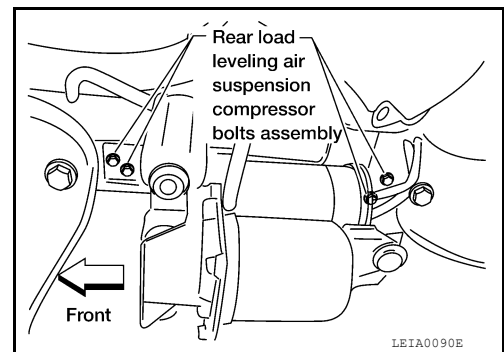
To disconnect the hoses, push in on the lock ring using a suitable tool and pull the hose out.



REAR LOAD LEVELING AIR SUSPENSION COMPRESSOR ASSEMBLY

< REMOVAL AND INSTALLATION >

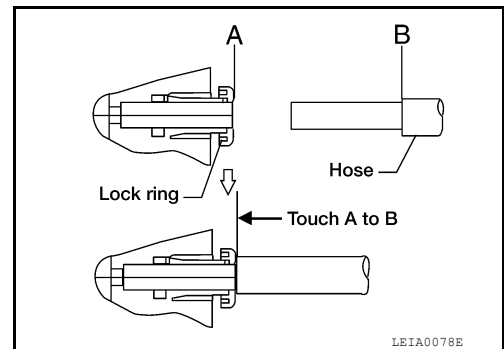
5. Remove the four bolts that mount the rear load leveling air suspension compressor assembly to the underbody.



INSTALLATION

Installation is in the reverse order of removal.

- To connect the rear load leveling air suspension hoses, the lock ring must be fully seated in the fitting. Insert the hose (B) into the lock ring (A) until the lock ring is touching the hose as shown. Pull on the hose to check that it is securely inserted.



A
B
C
D

RSU

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HEIGHT SENSOR

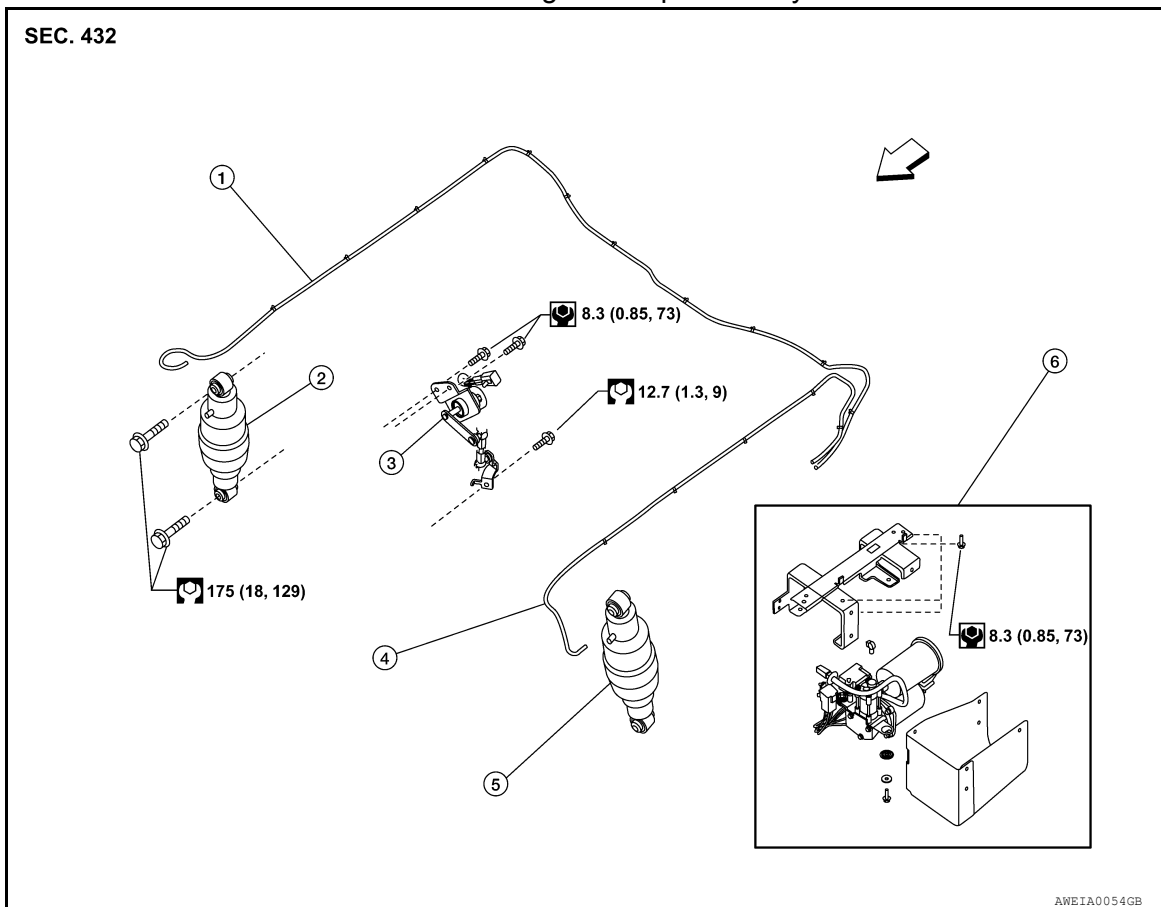
< REMOVAL AND INSTALLATION >

HEIGHT SENSOR

Removal and Installation

INFOID:000000011290177

Rear Load Leveling Air Suspension System

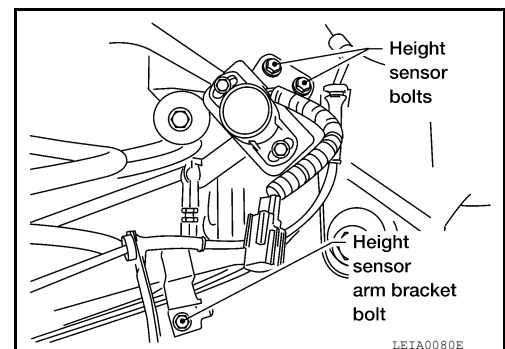


- | | | |
|---|-----------------------|--|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly (includes the bracket and rubber cover) |

⇐ Front

REMOVAL

1. Disconnect the harness connector from the height sensor.
2. Remove the two height sensor bolts and height sensor arm bracket bolt.
3. Remove the height sensor.



INSTALLATION

Installation is in the reverse order of removal.

1. Start the engine.

HEIGHT SENSOR

< REMOVAL AND INSTALLATION >

2. Use CONSULT to perform "STANDARD HEIGHT LEVEL" work support function.
3. Using data monitor of CONSULT, verify "HEIGT CALC" is at 0 mm.
4. Check the vehicle height. Refer to [RSU-30. "Wheelarch Height \(Unladen*1\)"](#). If vehicle height is not within ± 10 mm (0.39 in) of the specification, perform the initialization procedure. Refer to [SCS-5. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"](#).

A

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RSU

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CONTROL UNIT

< REMOVAL AND INSTALLATION >

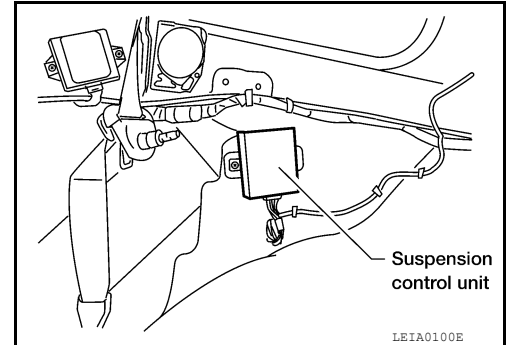
CONTROL UNIT

Removal and Installation

INFOID:000000011290178

REMOVAL

1. Remove the luggage side finisher lower and upper (LH). Refer to [INT-19. "Removal and Installation"](#).
2. Disconnect the battery negative terminal. Refer to [PG-81. "Removal and Installation"](#).
3. Disconnect the suspension control unit harness connector.
4. Remove the two bolts and remove the suspension control unit.



INSTALLATION

Installation is in the reverse order of removal.

- Tighten the suspension control bolts to the specified torque.

Suspension control unit bolts : 6 N·m (0.6 kg-m, 53 in-lb)

- Perform initialization procedure. Refer to [SCS-5. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"](#).

REAR SUSPENSION MEMBER

< UNIT REMOVAL AND INSTALLATION >

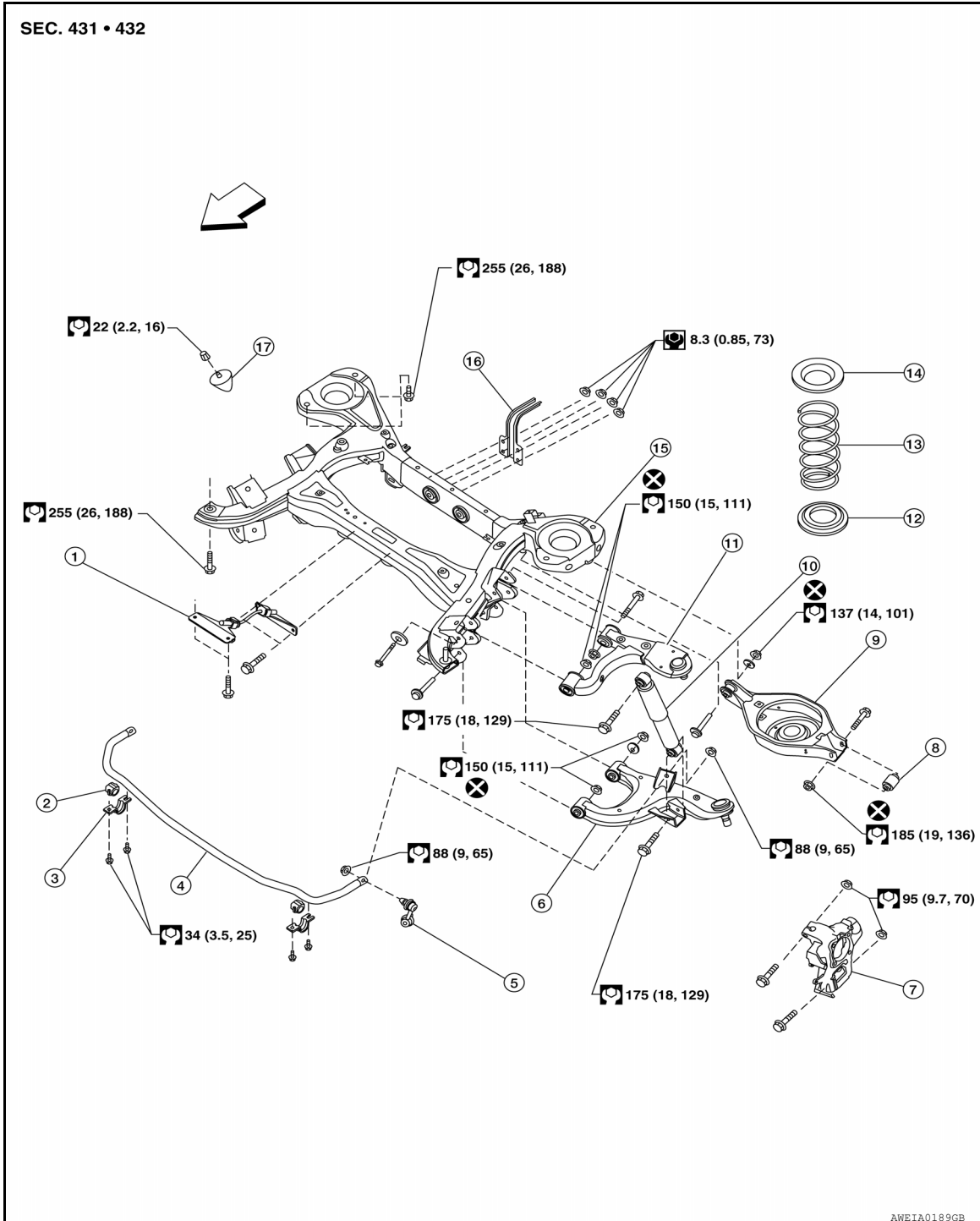
UNIT REMOVAL AND INSTALLATION

REAR SUSPENSION MEMBER

Exploded View

INFOID:000000011290179

Rear Suspension Without Rear Load Leveling Air Suspension System



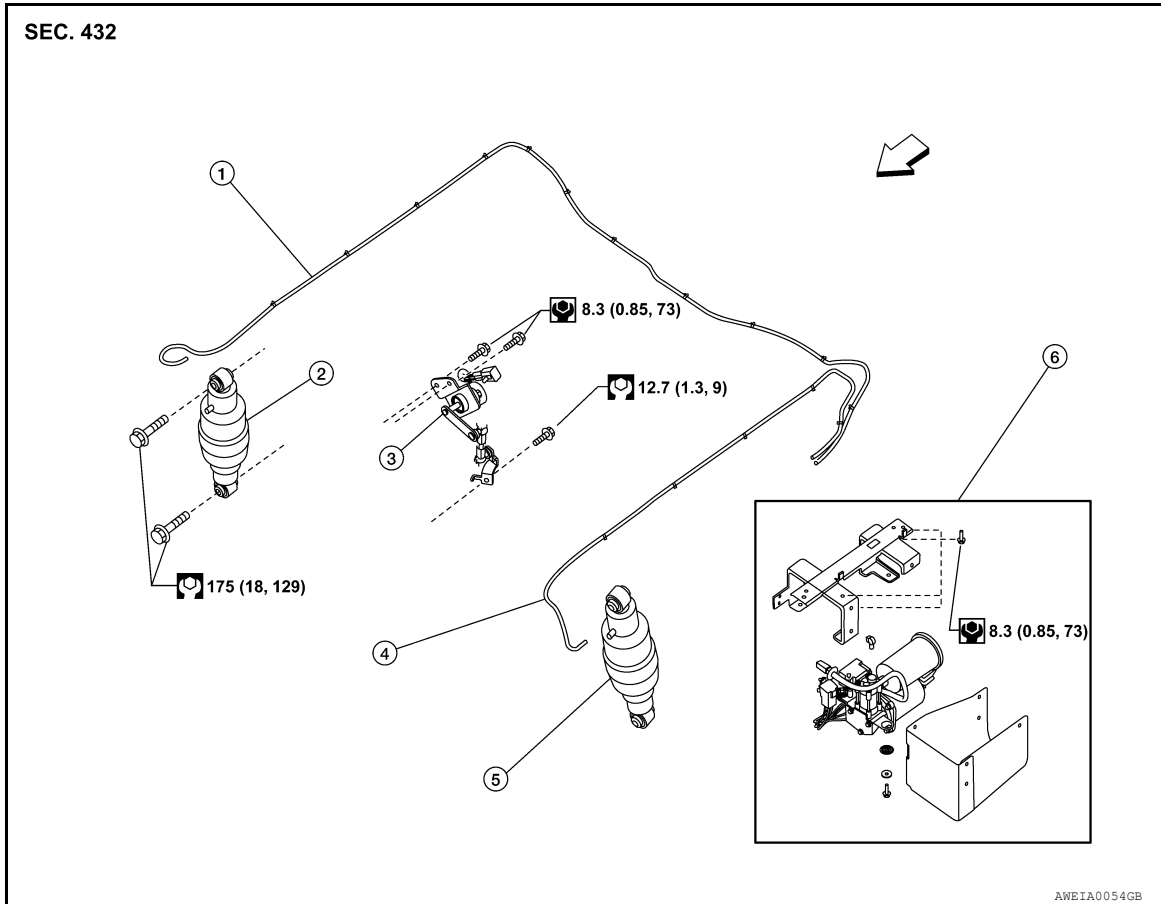
- | | | |
|---------------------------|---------------------------|-------------------------|
| 1. Seat belt latch anchor | 2. Stabilizer bar bushing | 3. Stabilizer bar clamp |
| 4. Stabilizer bar | 5. Connecting rod | 6. Front lower link |
| 7. Knuckle | 8. Bushing | 9. Rear lower link |
| 10. Shock absorber | 11. Suspension arm | 12. Lower rubber seat |

REAR SUSPENSION MEMBER

< UNIT REMOVAL AND INSTALLATION >

- | | | |
|------------------------|-----------------------|----------------------------|
| 13. Coil spring | 14. Upper rubber seat | 15. Rear suspension member |
| 16. Spare tire bracket | 17. Bound bumper | ⇐ Front |

Rear Load Leveling Air Suspension System



- | | | |
|---|-----------------------|--|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly (includes the bracket and rubber cover) |

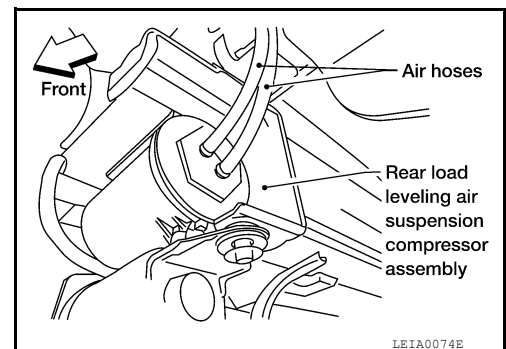
⇐ Front

Removal and Installation

INFOID:000000011290180

REMOVAL

- If equipped with rear load leveling air suspension system, perform the following:
 - Use the CONSULT "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
 - Disconnect the harness connectors from the height sensor and from the rear load leveling air suspension compressor assembly.
 - Remove the rubber cover to access the rear load leveling air suspension compressor assembly.
 - Disconnect the rear load leveling air suspension hoses at the rear load leveling air suspension compressor assembly.



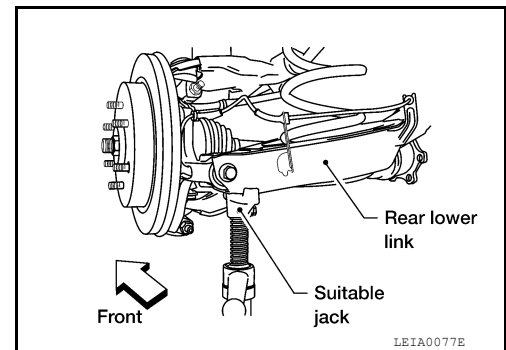
NOTE:

- To disconnect the hoses, push in on the lock ring using a suitable tool and pull the hose out.
- Remove the height sensor bracket bolt from the LH lower link.

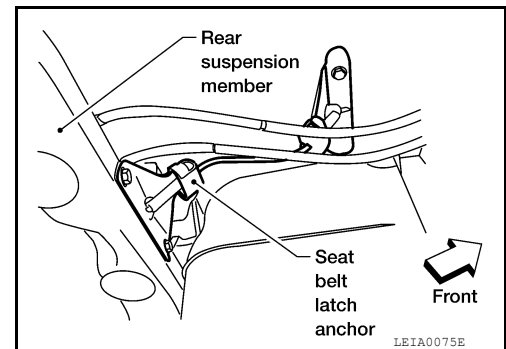
REAR SUSPENSION MEMBER

< UNIT REMOVAL AND INSTALLATION >

2. Remove rear wheels and tires using power tool. Refer to [WT-53, "Rotation"](#).
3. Remove the rear brake rotor and caliper without disconnecting the brake hoses, using power tool. Reposition the brake caliper out of the way using a suitable wire. Refer to [BR-37, "Removal and Installation of Brake Caliper and Disc Rotor"](#).
CAUTION:
 - Do not crimp or stretch the brake hose when repositioning the brake caliper out of the way.
 - Do not press brake pedal while the brake caliper is removed.
4. Remove the spare tire.
5. Remove lower shock bolts.
6. Disconnect the harness connectors from rear wheel sensors.
7. Remove rear drive shafts. Refer to [RAX-9, "Removal and Installation"](#).
8. Remove the rear final drive. Refer to [DLN-247, "Removal and Installation"](#).
9. Remove the EVAP canister bolt from the top of the rear suspension member.
10. Disconnect the parking brake cables from the brackets on the rear suspension member.
11. Disconnect the parking brake cables at the equalizer. Refer to [PB-7, "Removal and Installation"](#).
12. Set a suitable jack to support each of the rear lower links and the coil spring tension.



13. Remove rear lower link outer bolts.
14. Lower the jack to remove the rear coil springs.
15. Remove the 2 bolts and disconnect the seat belt latch anchor from the rear suspension member.
16. Remove the nuts and disconnect connecting rods from the front lower links.
17. Set a suitable jack under the rear suspension member.
18. Remove the 6 rear suspension member bolts.
19. Slowly lower the jack to remove the rear suspension member, suspension arm, front and rear lower links and stabilizer bar as an assembly.
20. If necessary, remove the suspension arm, spare tire bracket, height sensor, rear load leveling air suspension hoses, stabilizer bar, and front and rear lower links from the rear suspension member.



INSPECTION AFTER REMOVAL

Check rear suspension member for deformation, cracks, and other damage and replace if necessary.

INSTALLATION

Installation is in the reverse order of removal.

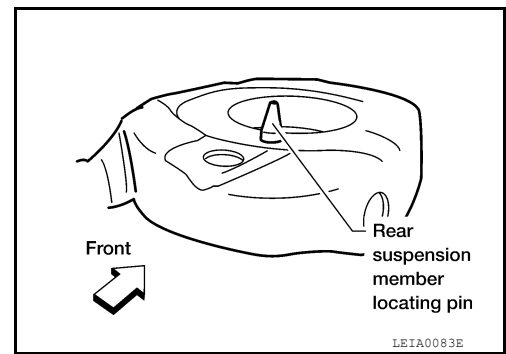
CAUTION:

- Do not reuse the suspension arm nuts.
- Do not reuse the front lower link nuts.
- Do not reuse the rear lower link nuts.

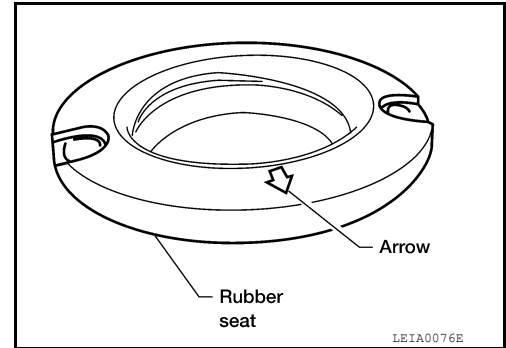
REAR SUSPENSION MEMBER

< UNIT REMOVAL AND INSTALLATION >

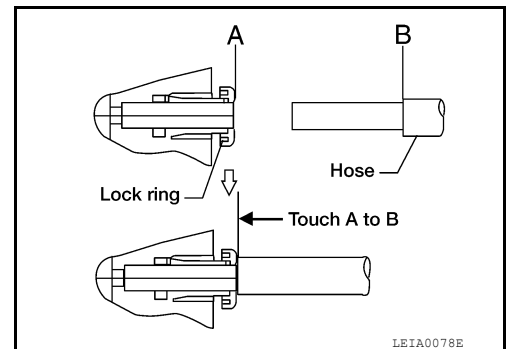
- When raising the rear suspension member assembly, use the locating pins to align the rear suspension member to the vehicle body.



- When installing the upper and lower rubber seats for the rear coil springs, the arrow embossed on the rubber seats must point out toward the wheel and tire.



- To connect the rear load leveling air suspension hoses, the lock ring must be fully seated in the fitting. Insert the hose (B) into the lock ring (A) until the lock ring is touching the hose as shown. Pull on the hose to check that it is securely inserted.



- Perform final tightening of nuts and bolts for the links under unladen condition with the tires on level ground. Unladen condition means that the fuel tank, engine coolant and lubricants are at the full specification, and the spare tire, jack, hand tools, and mats are in their designated positions.
- Check the wheel alignment. Refer to [RSU-6, "Wheel Alignment Inspection"](#).
- Adjust the neutral position of the steering angle sensor. Refer to [BRC-8, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).
- Adjust the parking brake. Refer to [PB-5, "On-Vehicle Service"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

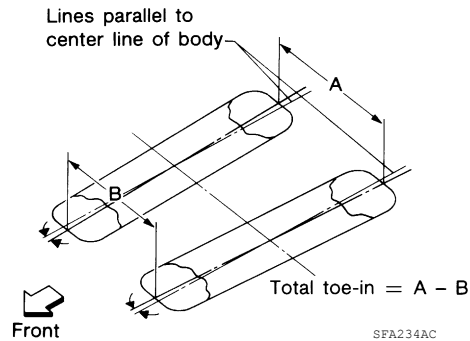
SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Alignment (Unladen ^{*1})

INFOID:000000011290181

Suspension		Standard	With air leveling
Camber Degree minute (decimal degree)	Minimum	- 0° 25' (- 0.4°)	- 1° 0' (- 1°)
	Nominal	0° 5' (0.1°)	- 0° 30' (- 0.5°)
	Maximum	0° 35' (0.6°)	0° 0' (0°)
	Cross camber	0° 45' (0.75°) or less	

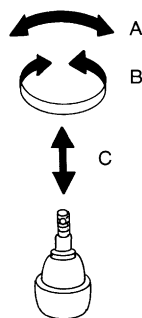


Toe-in	Total toe-in Distance (A-B)	Minimum	Out 2.4 mm (Out 0.094 in)	0 mm (0 in)
		Nominal	In 0.9 mm (In 0.035 in)	In 3.3 mm (In 0.130 in)
		Maximum	In 4.2 mm (In 0.165 in)	In 6.6 mm (In 0.260 in)
		Cross toe	2 mm (0.079 in) or less	
	Total toe-in Angle Degree minute (Decimal degree)	Minimum	Out 0° 8' 24" (Out 0.14°)	In 0° 1' 12" (In 0.02°)
		Nominal	In 0° 3' 36" (In 0.06°)	In 0° 13' 12" (In 0.22°)
		Maximum	In 0° 15' 36" (In 0.26°)	In 0° 25' 12" (In 0.42°)
		Cross toe	0° 8' (0.14°) or less	

*1: Fuel tank, engine coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

Ball Joint

INFOID:000000011290182



Swinging force (measurement point at cotter pin hole of ball stud) (A)	11.4 - 145.5 N (1.16 - 14.8 kg, 2.56 - 32.7 lb)
Turning torque (B)	0.5 - 6.4 N·m (0.06 - 0.65 kg·m, 5 - 56 in·lb)
Vertical end play (C)	0 mm (0 in)

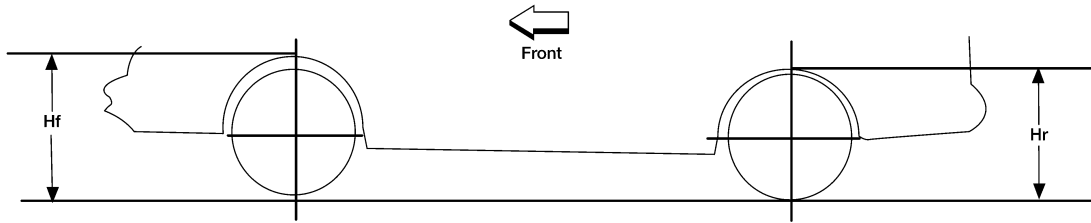
SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

Wheelarch Height (Unladen*¹)

INFOID:000000011290183

Unit: mm (in)



LEIA0085E

Suspension type	With air leveling* ²				Without air leveling			
Applied model	2WD		4WD		2WD		4WD	
Tire size	P265/ 70R18	P275/ 60R20	P265/ 70R18	P275/ 60R20	P265/ 70R18	P275/ 60R20	P265/ 70R18	P275/ 60R20
Front wheelarch height (Hf)	914 (35.98)	920 (36.22)	931 (36.65)	937 (36.89)	914 (35.98)	920 (36.22)	931 (36.65)	937 (36.89)
Rear wheelarch height (Hr)	911 (35.87)	917 (36.10)	931 (36.65)	937 (36.89)	931 (36.65)	937 (36.89)	951 (37.44)	957 (37.68)

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

*2: Verify the vehicle height. If vehicle height is not within ± 10 mm (0.39 in) of the specification, perform the control unit initialization procedure. Refer to [SCS-5. "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"](#).