# REAR SUSPENSION

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## **PRECAUTIONS**

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# **PRECAUTION**

# **PRECAUTIONS**

Precautions Concerning On-board Servicing of Hybrid Systems

INFOID:0000000008144314

#### **CAUTION:**

Be sure to turn the ignition switch OFF before performing inspection and servicing inside the engine compartment or underneath the vehicle. If the ignition switch is ON (vehicle READY state), even if the engine is stopped, the conditions of the vehicle may cause the engine to start automatically. If it is necessary to continually operate the engine during inspection or servicing, use the designated inspection mode. <a href="https://documents.com/hebc-89">HBC-89</a>, "Description".

# Precautions for Suspension

INFOID:0000000008144315

- 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.

# **PREPARATION**

# < PREPARATION >

# **PREPARATION**

# **PREPARATION**

# Special Service Tools

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name		Description
ST3127S000 (J-25765-A) Preload gauge		Measuring rotating torque of ball joint
ST35652000 ( – ) Shock absorber attachment	ZZA0806D	Disassembling and assembling shock absorber

# **Commercial Service Tools**

Tool name		Description
Power tool		Loosening bolts and nuts
	PBIC0190E	
Spring compressor		Removing and installing coil spring
	S-NT717	

Revision: 2013 March RSU-3 2013 M Hybrid

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# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

# SYMPTOM DIAGNOSIS

# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

# **NVH Troubleshooting Chart**

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Use chart be	low to find the cause of the	symptom. If necessary	, rep	air or	repla	ace th	ese p	oarts.										
Reference		RSU-8, RSU-11, RSU-14, RSU-16, RSU-18, RSU-20, RSU-21	RSU-10		1	ſ	RSU-8, RSU-11, RSU-14, RSU-16, RSU-18, RSU-20, RSU-21	RSU-6	<u>RSU-20</u>	NVH in DLN section.	NVH in DLN section.	NVH in RAX and RSU sections.	NVH in WT section.	NVH in WT section.	NVH in RAX section.	NVH in BR section.	NVH in ST 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	Stabilizer bar fatigue	PROPELLER SHAFT	DIFFERENTIAL	REAR AXLE AND REAR SUSPENSION	TIRE	ROAD WHEEL	DRIVE SHAFT	BRAKE	STEERING	
		Noise	×	×	×	×	×	×			×	×	×	×	×	×	×	×
	REAR SUSPENSION	Shake	×	×	×	×		×			×		×	×	×	×	×	×
		Vibration	×	×	×	×	×				×		×	×		×		×
Symptom		Shimmy	×	×	×	×			×				×	×	×		×	×
		Judder	×	×	×								×	×	×		×	×
		Poor quality ride or handling	×	×	×	×	×		×	×			×	×	×			

<sup>×:</sup> Applicable

# **REAR SUSPENSION ASSEMBLY**

## < PERIODIC MAINTENANCE >

# PERIODIC MAINTENANCE

# REAR SUSPENSION ASSEMBLY

Inspection INFOID:0000000008144319

#### COMPONENT PART

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

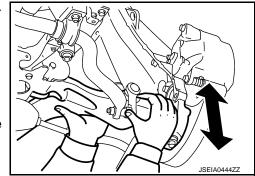
#### Ball Joint Axial End Play

Move axle side of suspension arm in the axial direction by hand. Check there is no end play.

Axial end play : Refer to RSU-23, "Ball Joint".

#### **CAUTION:**

- Never depress brake pedal when measuring.
- Never perform with tires on level ground.
- Be careful not to damage ball joint boot. Never damage the installation position by applying excessive force.



# SHOCK ABSORBER ASSEMBLY

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

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# WHEEL ALIGNMENT

Inspection INFOID:000000008144320

#### **DESCRIPTION**

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-64, "Tire Air Pressure".
- · Road wheels for runout.
- Wheel bearing axial end play. Refer to <u>RAX-6, "Inspection"</u>.
- Ball joint axial end play of suspension arm. Refer to RSU-5, "Inspection".
- Shock absorber operation.
- Each mounting point of axle and suspension for looseness and deformation.
- Each of front lower link, rear lower link, toe control link, rear suspension member, suspension arm 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.
- · Make sure 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.

Adjustment INFOID:00000008144321

#### **CAMBER**

## WHEEL ALIGNMENT

#### < PERIODIC MAINTENANCE >

• If camber is exceeds the standard value, adjust with adjusting bolt (2) in rear lower link (1).

: Vehicle front

Camber: Refer to RSU-23, "Wheel Alignment".

#### **CAUTION:**

After adjusting camber, be sure to check toe-in.

- If camber is not still within the specification, inspect and replace any damaged or worn suspension parts.

#### TOE-IN

If toe-in is exceeds the standard value, adjust with adjusting bolt
 (2) in toe control link (1).

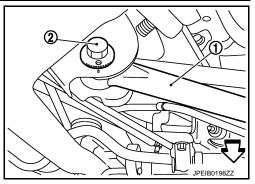
: Vehicle front

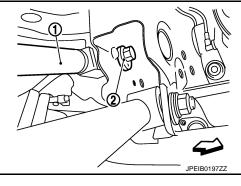
Toe-In: Refer to RSU-23, "Wheel Alignment".

#### **CAUTION:**

Be sure to adjust equally on right and left side with adjusting bolt.

- If toe-in is not still within the specification, inspect and replace any damaged or worn suspension parts.
- After toe-in adjustment, adjust neutral position of steering angle sensor. Refer to BRC-66, "Work Procedure".





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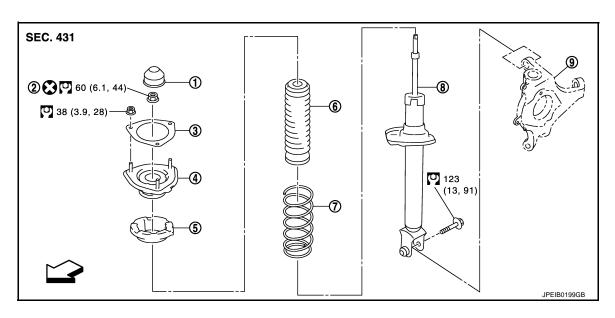
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# REMOVAL AND INSTALLATION

# REAR COIL SPRING AND SHOCK ABSORBER

Exploded View



- Cap
- 4. Mounting insulator
- Coil spring
- ∀ : Vehicle front

: N·m (kg-m, ft-lb)

- 2. Piston rod lock nut
- 5. Rubber seat
- 8. Shock absorber

- 3. Gasket
- 6. Bound bumper
- 9. Axle housing

Removal and Installation

**REMOVAL** 

- Remove tires with power tool. Refer to WT-58, "Exploded View".
- 2. Set suitable jack under axle housing.

: Always replace after every disassembly.

**CAUTION:** 

- · Never damage the axle housing with a jack.
- Check the stable condition when using a jack.
- 3. Remove shock absorber from axle housing.
- 4. Remove the rear parcel shelf finisher. Refer to <a href="INT-41">INT-41</a>, "Removal and Installation".
- 5. Remove the seat belt retractor. Refer to SB-14, "SEAT BELT RETRACTOR: Removal and Installation".
- Remove mounting insulator nuts, and then remove shock absorber assembly.

#### **INSTALLATION**

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

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

# Disassembly and Assembly

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DISASSEMBLY

## REAR COIL SPRING AND SHOCK ABSORBER

#### < REMOVAL AND INSTALLATION >

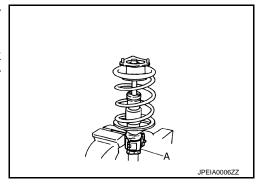
#### **CAUTION:**

Never damage shock absorber piston rod when removing components from shock absorber.

- Remove gasket and cap from mounting insulator.
- 2. Install shock absorber attachment (A) [SST: ST35652000 ( )] to shock absorber and secure it in a vise.

#### **CAUTION:**

When installing the shock absorber attachment to shock absorber, wrap a shop cloth around shock absorber to protect it from damage.



3. Using a spring compressor (A) (commercial service tool), compress coil spring between rubber seat and shock absorber until coil spring with a spring compressor is free.

#### **CAUTION:**

Be sure a spring compressor is securely attached coil spring. Compress coil spring.

4. Make sure coil spring with a spring compressor between rubber seat and shock absorber is free. And then remove piston rod lock nut while securing the piston rod tip so that piston rod does not turn.

#### **CAUTION:**

Start compressing the coil spring after checking that the spring compressor is completely attached.



After remove coil spring with a spring compressor, and then gradually release a spring compressor. CAUTION:

Loosen while making sure coil spring attachment position does not move.

- 7. Remove the shock absorber attachment from shock absorber.
- 8. Perform inspection after disassembly. Refer to <a href="RSU-10">RSU-10</a>, "Inspection".

#### ASSEMBLY

#### **CAUTION:**

Never damage shock absorber piston rod when installing components from shock absorber.

Install shock absorber attachment [SST: ST35652000 ( – )] to shock absorber and secure it in a vise.
 CAUTION:

When installing the shock absorber attachment to shock absorber, wrap a shop cloth around shock absorber to protect it from damage.

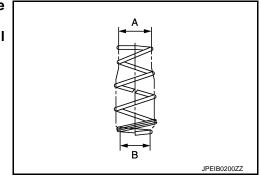
Compress coil spring using a spring compressor (commercial service tool), and install it onto shock absorber.

#### **CAUTION:**

- Install with the large-diameter side (A) facing up and the small-diameter side (B) facing down.
- Be sure a spring compressor is securely attached to coil spring. Compress coil spring.
- 3. Apply soapy water to bound bumper.

#### **CAUTION:**

Never use machine oil.



Install rubber sheet and mounting insulator to shock absorber.

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## REAR COIL SPRING AND SHOCK ABSORBER

#### < REMOVAL AND INSTALLATION >

#### **CAUTION:**

Install the mount insulator so that the stud bolt is in the position shown in the figure.

A : LH B : RH

: Vehicle front (shock absorber lower bolt insertion direction)

# **Angle (E)** : 29.7°

- 5. Secure piston rod tip so that piston rod does not turn, then tighten piston rod lock nut with specified torque.
- Gradually release a spring compressor, and remove coil spring. CAUTION:

Loosen while making sure coil spring attachment position does not move.

- 7. Remove the shock absorber attachment from shock absorber.
- Install the gasket and cap to the mounting insulator.

Inspection INFOID:000000008144325

#### INSPECTION AFTER DISASSEMBLY

#### Shock absorber

Check the following items and replace if necessary.

- Check shock absorber assembly for deformation, cracks, and other damage.
- Check piston rod for damage, uneven wear, and distortion.
- Check for oil leakage

Mounting insulator, rubber seat, bound bumper, and gasket

Check mounting insulator, rubber seat, bound bumper, and gasket for cracks, uneven wear, and damage.
 Replace if necessary.

#### Coil spring

• Check coil spring for cracks, uneven wear, and damage. Replace if necessary.

#### INSPECTION AFTER INSTALLATION

- 1. Check wheel alignment. Refer to RSU-6, "Inspection".
- Adjust neutral position of steering angle sensor. Refer to <u>BRC-66</u>, "Work <u>Procedure</u>".

Disposal INFOID:000000000814432

- Set shock absorber horizontally with the piston rod fully extended.
- Drill 2 3 mm (0.08 0.12 in) hole at the position (■) from top as shown in the figure 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.

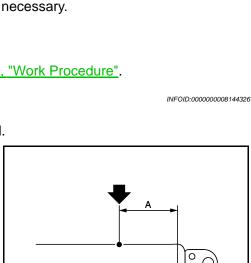
#### NOTE:

- Drill vertically in the direction show by arrow.
- Directly to 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.



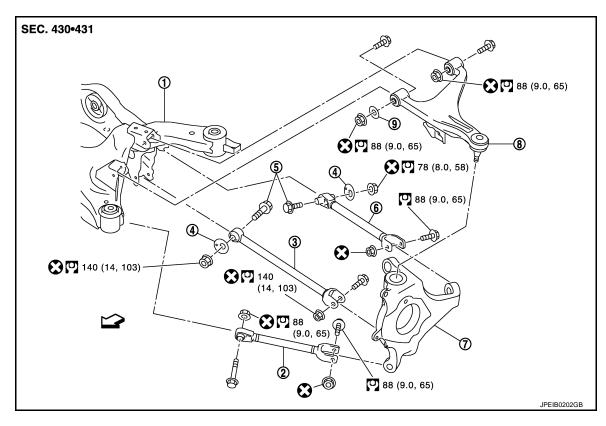
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# SUSPENSION ARM

**Exploded View** INFOID:0000000008144327



- Rear suspension member
- Eccentric disk
- Axle housing
- : Always replace after every disassembly.
- : N·m (kg-m, ft-lb)

- Front lower link 2.
- 5. Adjusting bolt
- Suspension arm

- Rear lower link 3.
- 6. Toe control link
- Stopper bushing

# Removal and Installation

# **REMOVAL**

Right Side

- Remove rear suspension assembly. Refer to RSU-21, "Removal and Installation". 1.
- Remove stabilizer connecting rod from suspension arm. Refer to RSU-20, "Removal and Installation". 2.
- Separate suspension arm from axle housing. Refer to RAX-8, "Removal and Installation". 3.
- 4. Remove suspension arm from axle housing.
- 5. Remove stopper bushing, bolts, and nuts, and then remove suspension arm from suspension member.
- Perform inspection after removal. Refer to RSU-12, "Inspection". 6.

#### Left Side

#### NOTE:

When removing and installing the right side at the same time, it is efficient to remove the suspension arm assembly.

- Remove tire with power tool. Refer to WT-58, "Exploded View". 1.
- Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work. Refer to BR-299, "BRAKE CALIPER ASSEMBLY: Removal and Installation".

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## SUSPENSION ARM

#### < REMOVAL AND INSTALLATION >

#### **CAUTION:**

#### Never depress brake pedal while brake caliper is removed.

- Remove disc rotor. Refer to <u>RAX-8</u>, "Removal and Installation".
- Remove drive shaft. Refer to <u>RAX-12</u>, "Removal and Installation".
- 5. Remove shock absorber from axle housing. Refer to <a href="RSU-8">RSU-8</a>, "Removal and Installation".
- Remove height sensor from suspension arm. (With AFS) Refer to EXL-115, "Removal and Installation".
- 7. Remove stabilizer connecting rod from suspension arm. Refer to RSU-20, "Removal and Installation".
- 8. Separate suspension arm from axle housing. Refer to RAX-8, "Removal and Installation".
- Remove stopper bushing, bolt, and nut, and then remove suspension arm from suspension member.
- 10. Perform inspection after removal. Refer to RSU-12, "Inspection".

#### INSTALLATION

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

- Perform final tightening of rear suspension member installation position (rubber bussing), under unladen conditions with tires on level ground.
- Never reuse suspension arm mounting nut.
- Perform inspection after installation. Refer to RSU-12, "Inspection".

Inspection INFOID:000000008144329

#### INSPECTION AFTER REMOVAL

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

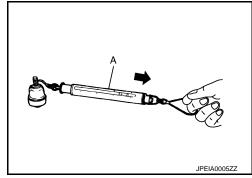
- Check suspension arm and bushing for deformation, cracks, and other damage.
- Check ball joint boot for cracks, damage, and leakage of grease.

#### Swing Torque Inspection

- 1. Manually move ball stud to confirm that it moves smoothly with no binding.
- 2. Move the ball stud at least ten times by hand to check for smooth movement.
- Hook spring balance (A) at cotter pin mounting hole. Confirm spring balance measurement value is within specifications when ball stud begins moving.

#### Swing torque : Refer to RSU-23, "Ball Joint".

 If swing torque exceeds the standard range, replace suspension arm assembly.

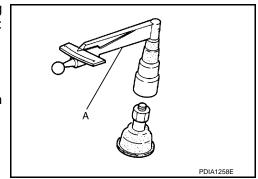


#### **Rotating Torque Inspection**

- 1. Manually move ball stud to confirm that it moves smoothly with no binding.
- Move the ball stud at least ten times by hand to check for smooth movement.
- 3. Attach the mounting nut to ball stud. Make sure that rotating torque is within the specifications with a preload gauge (A) [SST: ST3127S000 (J-25765-A)].

#### Rotating torque : Refer to RSU-23, "Ball Joint".

 If rotating torque exceeds the standard range, replace suspension arm assembly.



#### Axial End Play Inspection

- 1. Manually move ball stud to confirm that it moves smoothly with no binding.
- Move the ball stud at least ten times by hand to check for smooth movement.

#### SUSPENSION ARM

#### < REMOVAL AND INSTALLATION >

3. Move tip of ball stud in axial direction to check for looseness.

# Axial end play : Refer to RSU-23, "Ball Joint".

If axial end play exceeds the standard range, replace suspension arm assembly.

#### INSPECTION AFTER INSTALLATION

#### Right Side

- 1. Adjust parking brake operation (stroke). Refer to PB-4, "Inspection and Adjustment".
- 2. Check wheel alignment. Refer to RSU-6, "Inspection".
- 3. Adjust neutral position of steering angle sensor. Refer to BRC-66, "Work Procedure".
- 4. Adjust levelizer adjustment of height sensor. (with AFS) Refer to <u>EXL-50</u>, "<u>ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (HEIGHT SENSOR)</u>: <u>Special Repair Requirement"</u>.

#### Left Side

- 1. Check wheel alignment. Refer to <a href="RSU-6">RSU-6</a>, "Inspection".
- Adjust neutral position of steering angle sensor. Refer to <u>BRC-66</u>, "Work Procedure".
- 3. Adjust levelizer adjustment of height sensor. (With AFS) Refer to <a href="EXL-50">EXL-50</a>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (HEIGHT SENSOR): Special Repair Requirement".

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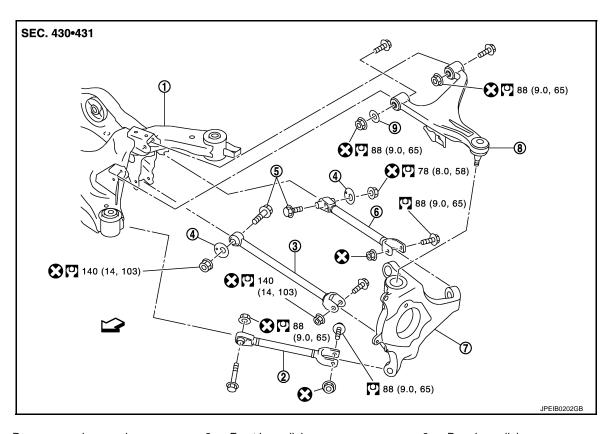
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# FRONT LOWER LINK

Exploded View



- 1. Rear suspension member
- 4. Eccentric disk
- 7. Axle housing
- ∀: Vehicle front

- 2. Front lower link
- 5. Adjusting bolt
- 8. Suspension arm

- 3. Rear lower link
- 6. Toe control link
- 9. Stopper bushing

- : Always replace after every disassembly.
  - ∷: N⋅m (kg-m, ft-lb)

# Removal and Installation

**REMOVAL** 

- 1. Remove tires with power tool. Refer to WT-58, "Exploded View".
- 2. Set suitable jack under axle housing.

**CAUTION:** 

- Never damage the axle housing with a jack.
- Check the stable condition when using a jack.
- 3. Separate shock absorber from axle housing. Refer to <a href="RSU-8">RSU-8</a>, "Removal and Installation".
- 4. Remove rear suspension member stay. Refer to RSU-21, "Removal and Installation".
- Remove nuts and bolts, and remove front lower link.
- 6. Perform inspection after removal. Refer to RSU-15, "Inspection".

# **INSTALLATION**

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

- Perform final tightening of rear suspension member installation position (rubber bussing), under unladen conditions with tires on level ground.
- · Never reuse front lower link mounting nut.
- Perform inspection after installation. Refer to RSU-15, "Inspection".

INFOID:0000000008144331

# FRONT LOWER LINK

## < REMOVAL AND INSTALLATION >

Inspection INFOID:000000008144332

## INSPECTION AFTER REMOVAL

Check front lower link and bushing for any deformation, cracks, or damage. Replace it if necessary.

# INSPECTION AFTER INSTALLATION

- 1. Check wheel alignment. Refer to RSU-6, "Inspection".
- 2. Adjust neutral position of steering angle sensor. Refer to <u>BRC-66</u>, "Work <u>Procedure"</u>.

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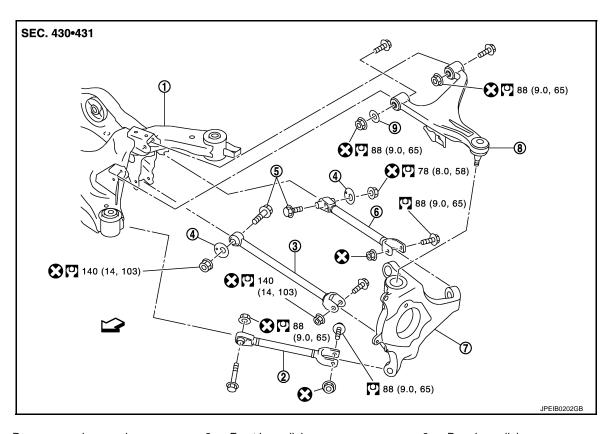
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# **REAR LOWER LINK**

Exploded View



- Rear suspension member
- 4. Eccentric disk
- 7. Axle housing
- ∀: Vehicle front

: N·m (kg-m, ft-lb)

- 2. Front lower link
- 5. Adjusting bolt
- 8. Suspension arm

- 3. Rear lower link
- 6. Toe control link
- 9. Stopper bushing

# Removal and Installation

**REMOVAL** 

- 1. Remove tires with power tool. Refer to WT-58, "Exploded View".
- 2. Set suitable jack under axle housing.

: Always replace after every disassembly.

**CAUTION:** 

- Never damage the axle housing with a jack.
- Check the stable condition when using a jack.
- 3. Separate shock absorber from axle housing. Refer to RSU-8, "Removal and Installation".
- 4. Remove eccentric disc, adjusting bolt, mounting bolt, and nut. Remove rear lower link.
- 5. Perform inspection after removal. Refer to RSU-17, "Inspection".

#### **INSTALLATION**

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

- Perform final tightening of rear suspension member installation position (rubber bussing), under unladen conditions with tires on level ground.
- Never reuse rear lower link mounting nut.
- Perform inspection after installation. Refer to <u>RSU-17</u>, "<u>Inspection</u>".

INFOID:0000000008144334

# **REAR LOWER LINK**

## < REMOVAL AND INSTALLATION >

Inspection INFOID:000000008144335

## INSPECTION AFTER REMOVAL

Check rear lower link and bushing for any deformation, cracks, or damage. Replace it if necessary.

# INSPECTION AFTER INSTALLATION

- 1. Check wheel alignment. Refer to RSU-6, "Inspection".
- 2. Adjust neutral position of steering angle sensor. Refer to <u>BRC-66</u>, "Work <u>Procedure"</u>.

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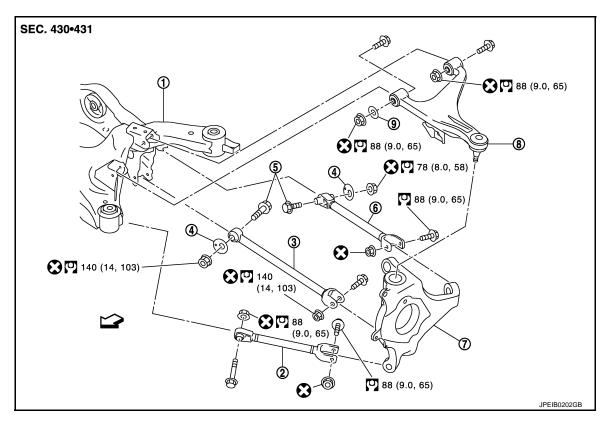
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# TOE CONTROL LINK

Exploded View



- Rear suspension member
- 4. Eccentric disk
- 7. Axle housing
- ∀: Vehicle front

- 2. Front lower link
- 5. Adjusting bolt
- 8. Suspension arm

- 3. Rear lower link
- 6. Toe control link
- 9. Stopper bushing

- ∷: N⋅m (kg-m, ft-lb)

## Removal and Installation

INFOID:0000000008144337

# **REMOVAL**

- 1. Remove tires with power tool. Refer to WT-58, "Exploded View".
- 2. Set suitable jack under axle housing.

: Always replace after every disassembly.

#### **CAUTION:**

- Never damage the axle housing with a jack.
- Check the stable condition when using a jack.
- 3. Separate shock absorber from axle housing. Refer to <a href="RSU-8">RSU-8</a>, "Removal and Installation".
- 4. Remove eccentric disk, adjusting bolt, mounting bolt, and nut. Remove toe control link.
- 5. Perform inspection after removal. Refer to RSU-19, "Inspection".

#### **INSTALLATION**

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

- Perform final tightening of rear suspension member and axle installation position (rubber bushing), under unladen conditions with tires on level ground.
- Never reuse toe control link mounting nut.
- Perform inspection after installation. Refer to <u>RSU-19</u>, "<u>Inspection</u>".

# **TOE CONTROL LINK**

## < REMOVAL AND INSTALLATION >

Inspection INFOID:000000008144338

## INSPECTION AFTER REMOVAL

Check toe control link and bushing for any deformation, cracks, or damage. Replace it if necessary.

# INSPECTION AFTER INSTALLATION

- 1. Check wheel alignment. Refer to RSU-6, "Inspection".
- 2. Adjust neutral position of steering angle sensor. Refer to <u>BRC-66</u>, "Work <u>Procedure"</u>.

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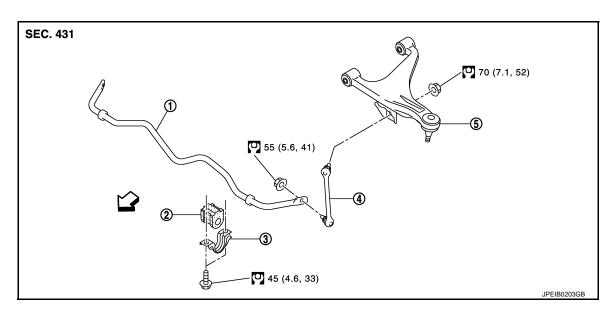
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# REAR STABILIZER

Exploded View



- 1. Stabilizer bar
- 4. Stabilizer connecting rod
- ∀
   : Vehicle front
- : N·m (kg-m, ft-lb)

- 2. Bushing
- 5. Suspension arm

3. Stabilizer clamp

#### Removal and Installation

INFOID:0000000008144340

#### **REMOVAL**

- Remove member stay. Refer to <u>RSU-21, "Removal and Installation"</u>.
- 2. Remove stabilizer connecting rod.
- 3. Remove stabilizer clamp and bushing.
- Remove stabilizer bar.
- 5. Perform inspection after removal. Refer to RSU-20, "Inspection".

#### INSTALLATION

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

• Perform final tightening of rear suspension member and axle installation position (rubber bushing), under unladen conditions with tires on level ground.

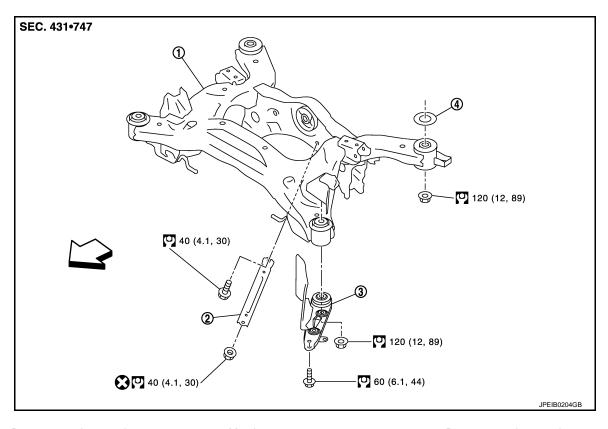
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#### INSPECTION AFTER REMOVAL

Check stabilizer bar, stabilizer connecting rod, stabilizer bushing and stabilizer clamp for deformation, cracks or damage. Replace it if necessary.

# REAR SUSPENSION ASSEMBLY

**Exploded View** INFOID:0000000008144342



- Rear suspension member
- Member stay

3. Rear suspension member stay

- Mount stopper
- : Always replace after every disassembly.
- : N·m (kg-m, ft-lb)

#### Removal and Installation

#### **REMOVAL**

- Remove tires with power tool. Refer to WT-58, "Exploded View".
- Remove caliper assemblies. Hang caliper assembly in a place where it will not interfere with work. Refer to BR-299, "BRAKE CALIPER ASSEMBLY: Removal and Installation". **CAUTION:**

## Avoid depressing brake pedal while brake caliper is removed.

- 3. Remove disc rotor. Refer to RAX-8, "Removal and Installation".
- Remove main muffler. Refer to <u>EX-6</u>, "Removal and Installation".
- Remove member stay and rear final drive assembly. Refer to <u>DLN-25, "Removal and Installation"</u>.
- Remove drive shaft. Refer to <a href="RAX-12">RAX-12</a>, "Removal and Installation". 6.
- Separate rear cable from front cable, and then remove rear cable from rear suspension member. Refer to PB-7, "Removal and Installation".
- Remove wheel sensor and sensor harness from rear suspension member. Refer to BRC-160. "REAR WHEEL SENSOR: Removal and Installation".
- 9. Disconnect height sensor harness connector. Refer to EXL-115, "Removal and Installation" (with AFS).

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10. Remove shock absorber from axle housing. Refer to RSU-8, "Removal and Installation".

## REAR SUSPENSION ASSEMBLY

#### < REMOVAL AND INSTALLATION >

11. Set suitable jack under rear suspension member.

#### **CAUTION:**

- Never damage the suspension member with a jack.
- Check the stable condition when using a jack.
- Remove rear under cover from rear suspension member stay. Refer to <u>EXT-29</u>, "<u>REAR UNDER COVER</u>: <u>Removal and Installation</u>".
- 13. Remove rear suspension member stay.
- 14. Remove rear suspension member mounting nuts.
- 15. Slowly lower jack, then remove rear suspension member, suspension arms, front lower links, wheel hub and housings from vehicle as a unit.

#### **CAUTION:**

## Operate while checking that jack supporting status is stable.

- 16. Remove mount stopper from rear suspension member.
- 17. Remove height sensor from suspension arm (left side). Refer to <a href="EXL-115">EXL-115</a>, "Removal and Installation" (with AFS).
- 18. Remove toe control link from rear suspension member. Refer to RSU-18, "Removal and Installation".
- 19. Remove suspension arms, front lower link, rear lower link, and axle housing from rear suspension member.
- 20. Perform inspection after removal. Refer to RSU-22, "Inspection".

#### INSTALLATION

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

- Perform final tightening of rear suspension member installation position (rubber bussing), under unladen conditions with tires on level ground.
- Never reuse member stay mounting nut.
- Perform inspection after installation. Refer to RSU-22, "Inspection".

Inspection INFOID:000000008144344

#### INSPECTION AFTER REMOVAL

Check rear suspension member for deformation, cracks, or any other damage. Replace if necessary.

#### INSPECTION AFTER INSTALLATION

- Check wheel sensor and harness for proper connection. Refer to <u>BRC-160</u>, "<u>REAR WHEEL SENSOR</u>: <u>Exploded View</u>".
- 2. Adjust parking brake operation (stroke). Refer to PB-4, "Inspection and Adjustment".
- 3. Check wheel alignment. Refer to RSU-6, "Inspection".
- Adjust levelizer adjustment of height sensor. (With AFS) Refer to <u>EXL-50</u>, "<u>ADDITIONAL SERVICE</u> <u>WHEN REPLACING CONTROL UNIT (HEIGHT SENSOR)</u>: <u>Special Repair Requirement</u>".
- Adjust neutral position of steering angle sensor. Refer to <u>BRC-66, "Work Procedure"</u>.

# **SERVICE DATA AND SPECIFICATIONS (SDS)**

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# SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Alignment

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Item			Standard	_
		Minimum	-1° 30′ (-1.50°)	-
Camber Degree	minute (Decimal degree)	Nominal	-1° 00′ (-1.00°)	_
D09.00 .	minute (200mai dogreo)	Maximum	-0° 30′ (-0.50°)	_
	Total toe-in Distance	Minimum	0 mm (0 in)	_
		Nominal	In 2.9 mm (In 0.114 in)	
Toe-in	Distance	Maximum	In 5.8 mm (In 0.228 in)	
roe-in	Total toe-angle Degree minute (Decimal degree)	Minimum	0° 00′ (0.00°)	
		Nominal	In 0° 14′ 24″ (In 0.24°)	_
		Maximum	In 0° 28′ 12″ (In 0.47°)	_

Measure value under unladen\* conditions.

Ball Joint INFOID:000000008144346

Item	Standard
Swing torque	0.5 − 3.4 N·m (0.06 − 0.34 kg-m, 5 − 30 in-lb)
Measurement on spring balance (cotter pinhole position)	8.1 – 54.8 N (0.83 – 5.59 kg, 1.83 – 12.31 lb)
Rotating torque	0.5 − 3.4 N·m (0.06 − 0.34 kg-m, 5 − 30 in-lb)
Axial end play	0 mm (0 in)

# Wheelarch Height

INFOID:0000000008144347

Item	Standard
Front (Hf)	752 mm (29.61 in)
Rear (Hr)	743 mm (29.25 in)

Hf

SFA818A

Measure value under unladen\* conditions.

Revision: 2013 March RSU-23 2013 M Hybrid

<sup>\*:</sup> Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

<sup>\*:</sup> Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.