

SECTION **RSU**  
 REAR SUSPENSION

A  
B  
C  
D

RSU

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# PRECAUTIONS

## PRECAUTIONS

PF0:00001

### Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EES0024S

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 SRS 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 SRS 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

EES0017F

- When installing each rubber part, final tightening must be carried out under unladen condition\* with tires on ground.  
Oil will shorten the life of rubber bushings. Be sure to wipe off any spilled oil.  
\* Fuel, engine coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
- After installing removed suspension parts, check wheel alignment.
- Do not jack up at the radius rod, front and rear lower links.
- Lock nuts are not reusable parts, always use new ones.
- When installing, do not wipe the oil off of the new lock nut before tightening.

# PREPARATION

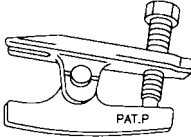
## PREPARATION

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### Special Service Tools

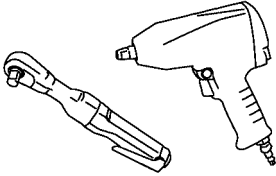
EES0017G

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
HT72520000 (J-25730-A) Ball joint remover   NT146	Removing upper ball joint

### Commercial Service Tools

EES0017H

Tool name	Description
Power tool   PBIC0190E	Loosening bolts and nuts

A  
B  
C  
D  
RSU  
F  
G  
H  
I  
J  
K  
L  
M

# NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

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

PFP:00003

### NVH Troubleshooting Chart

EES00171

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

Reference page		<a href="#">RSU-5</a>	<a href="#">RSU-9</a>	<a href="#">RSU-12</a>	<a href="#">RSU-5</a>	<a href="#">RSU-12</a>	<a href="#">RSU-5</a>	<a href="#">RSU-6</a>	<a href="#">RSU-11</a>	<a href="#">FAX-4, "NVH Troubleshooting Chart"</a>	<a href="#">FAX-4, "NVH Troubleshooting Chart"</a>	<a href="#">WT-3, "NVH Troubleshooting Chart"</a>	<a href="#">WT-3, "NVH Troubleshooting Chart"</a>	<a href="#">BR-5, "NVH Troubleshooting Chart"</a>	<a href="#">PS-5, "NVH Troubleshooting Chart"</a>
Possible Cause and SUSPECTED PARTS		Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mounting	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	Stabilizer bar fatigue	DRIVE SHAFT	AXLE	TIRES	ROAD WHEEL	BRAKES	STEERING
Symptom	Noise	x	x	x	x	x	x			x	x	x	x	x	x
	Shake	x	x	x	x		x			x	x	x	x	x	x
	Vibration	x	x	x	x	x				x	x	x			x
	Shimmy	x	x	x	x			x			x	x	x	x	x
	Shudder	x	x	x							x	x	x	x	x
	Poor quality ride or handling	x	x	x	x	x		x	x		x	x	x		

x: Applicable

# REAR SUSPENSION ASSEMBLY

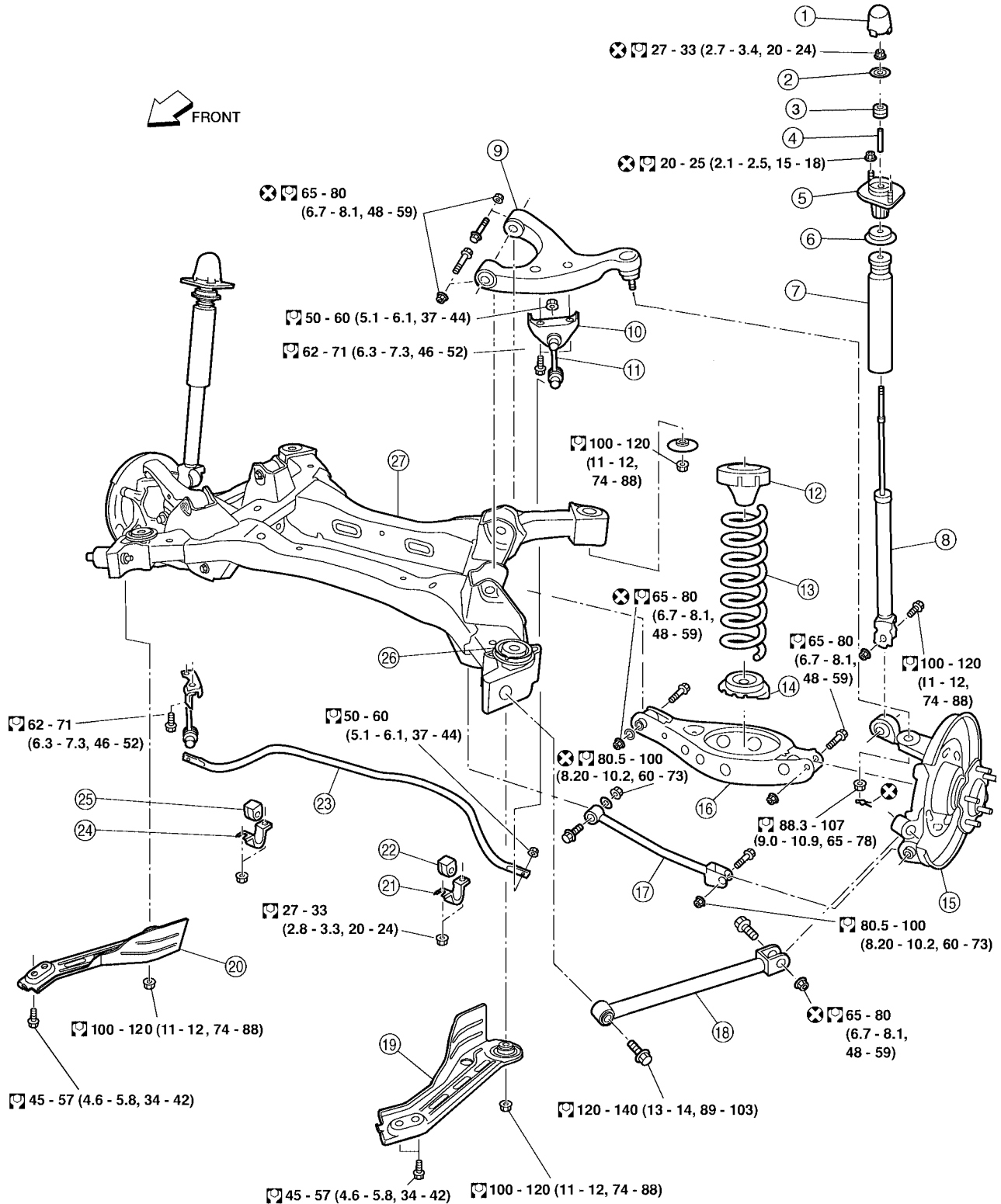
## REAR SUSPENSION ASSEMBLY

### Components

PFP:55020

EES0017J

SEC. 430 - 431



⊗ : N·m (kg - m, ft - lb)

⊗ : Always replace after every disassembly.

WEIA0100E

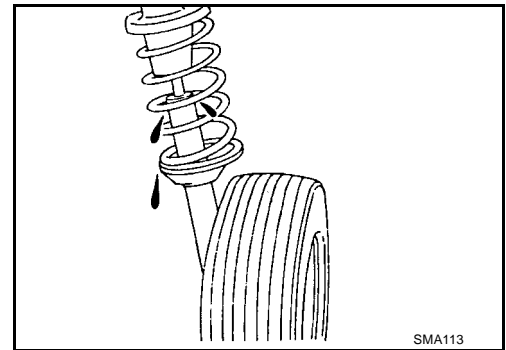
# REAR SUSPENSION ASSEMBLY

- |                                  |                                 |                            |
|----------------------------------|---------------------------------|----------------------------|
| 1. Cap                           | 2. Washer                       | 3. Bushing                 |
| 4. Distance tube                 | 5. Shock absorber mount bracket | 6. Bound bumper cover      |
| 7. Bound bumper                  | 8. Shock absorber               | 9. Suspension arm          |
| 10. Connecting rod mount bracket | 11. Connecting rod              | 12. Upper rubber seat      |
| 13. Coil spring                  | 14. Lower rubber seat           | 15. Knuckle                |
| 16. Rear lower link              | 17. Front lower link            | 18. Radius rod             |
| 19. Member stay                  | 20. Member stay                 | 21. Stabilizer bar clamp   |
| 22. Bushing                      | 23. Stabilizer bar              | 24. Stabilizer bar clamp   |
| 25. Bushing                      | 26. Member stopper              | 27. Rear suspension member |

## On-vehicle Service

EES0017K

- Check the suspension parts for excessive play, cracks, wear or damage. Shake each rear wheel to check for excessive play.
- Retighten all nuts and bolts to the specified torque.
- Make sure that the cotter pin is installed.
- Check the shock absorber for oil leakage or other damage.
- Check the wheelarch height. Refer to [RSU-14, "Wheelarch Height \(Unladen\\*\)"](#) .
- Check the suspension ball joint for grease leakage and the ball joint dust cover for cracks or other damage.



## Rear Wheel Alignment

EES0017L

Before checking the rear wheel alignment, make a preliminary inspection.

- Measure the wheel alignment under unladen conditions.

### NOTE:

Unladen conditions mean that fuel, engine coolant, and lubricants are full. That the spare tire, jack, hand tools, and mats are in their designated positions.

## PRELIMINARY INSPECTION

- Check the tires for wear and for improper inflation.
- Check the wheels for deformation, cracks, and other damage. Remove the wheel and check the wheel runout. Refer to [WT-4, "Inspection"](#) .
- Check the rear wheel bearings for looseness.
- Check the rear suspension for looseness.
- Check that the rear shock absorbers work properly.
- Check the wheelarch height in the unladen condition. Refer to [RSU-14, "Wheelarch Height \(Unladen\\*\)"](#) .

## 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.

# REAR SUSPENSION ASSEMBLY

## THE ALIGNMENT PROCESS

**IMPORTANT:** Use only the alignment specifications listed in this Service Manual. Refer to [RSU-13, "Rear Wheel Alignment \(Unladen\\*\)"](#) .

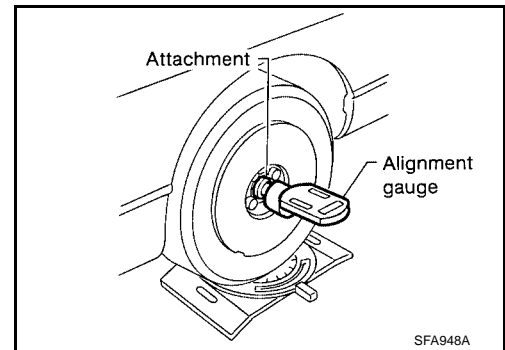
1. When displaying the alignment settings, many alignment machines use "indicators": (Green/red, plus or minus, Go/No Go). **Do NOT use these indicators.**
  - The alignment specifications programmed into your alignment machine that operate these indicators may not be correct.
  - This may result in an ERROR.
2. Some newer alignment machines are equipped with an optional "Rolling Compensation" method to "compensate" the sensors (alignment targets or head units). **Do NOT 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 are using for more information.

## CAMBER

- Measure the camber of both the right and left wheels using a suitable alignment gauge and adjust using the following procedure.

**Camber** : Refer to [RSU-6, "Rear Wheel Alignment"](#) .

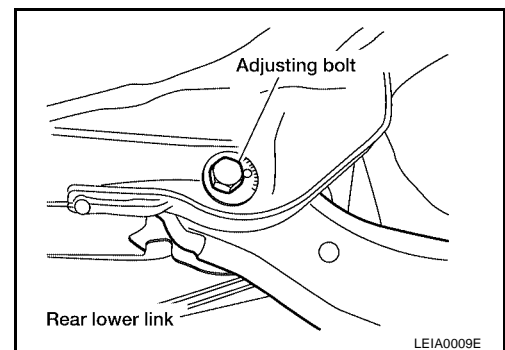
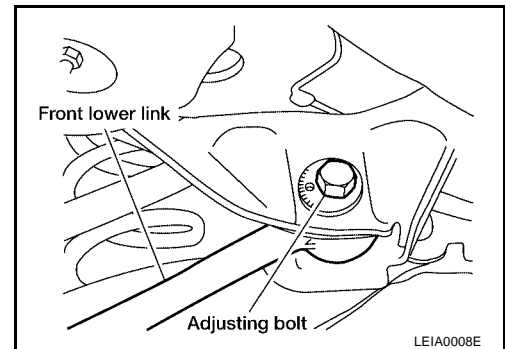
- If the camber is not within specification, adjust the camber by turning the adjusting bolts in the same direction.



1. Turn the adjusting bolts in the same direction to calibrate.

### NOTE:

Camber changes about 5° with each graduation of the adjusting bolt.



2. Tighten the adjusting bolt nuts to the specified torque.

**Adjusting bolt nuts** : Refer to [RSU-5, "Components"](#) .

# REAR SUSPENSION ASSEMBLY

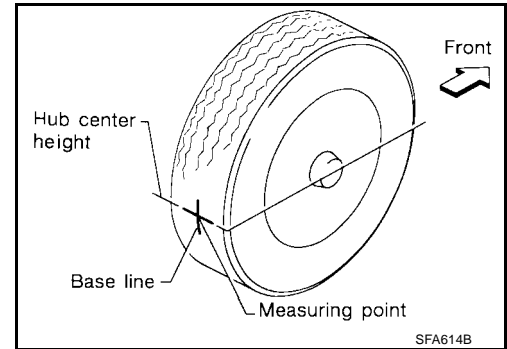
## TOE-IN

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

### WARNING:

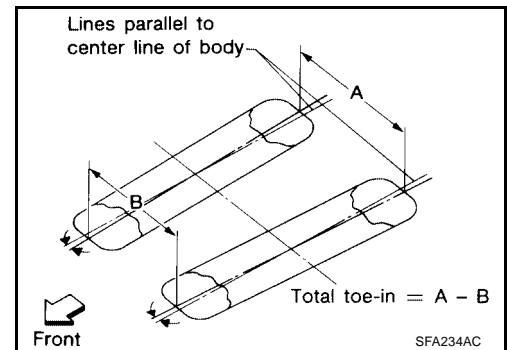
- Always perform the following procedure on a flat surface.
- Make sure that no person is in front of the vehicle before pushing it.

1. Bounce rear of vehicle up and down to stabilize the posture.
2. Push the vehicle straight ahead about 5 m (16 ft).
3. Put a mark on base line of the tread (rear side) of both tires at the same height of hub center. This mark is a measuring point.



4. Measure distance "A" (rear side).
5. Push the vehicle slowly ahead to rotate the wheels 180° degrees (1/2 a turn).
  - If the wheels have rotated more than 180° degrees (1/2 a turn), try the above procedure again from the beginning. Never push vehicle backward.
6. Measure distance "B" (front side).

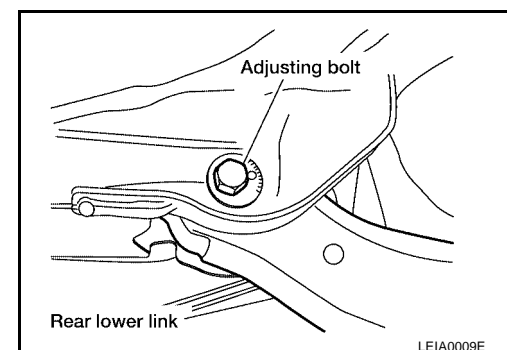
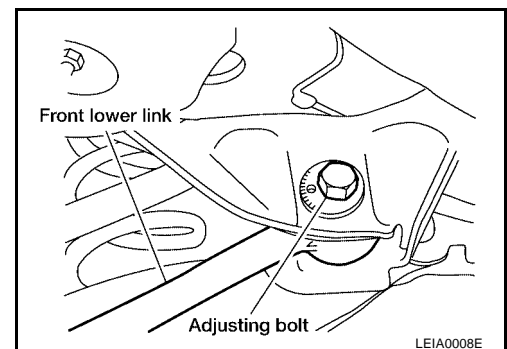
**Total toe-in** : Refer to [RSU-13. "Rear Wheel Alignment \(Unladen\\*\)"](#) .



7. Adjust toe-in by turning adjusting bolts.

### NOTE:

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



8. Tighten the adjusting bolt nuts to the specified torque.

**Adjusting bolt nuts** : Refer to [RSU-5. "Components"](#) .



# REAR SUSPENSION ASSEMBLY

EES0017M

## Removal and Installation REAR SUSPENSION ASSEMBLY

### Removal

#### CAUTION:

Before removing the rear suspension assembly, disconnect the ABS wheel sensor from the assembly. Failure to do so may result in damage to the sensor wires and the sensor becoming inoperative.

1. Remove the center exhaust tube with muffler(s). Refer to [EX-4, "Removal and Installation"](#) (QR25DE) or [EX-7, "Removal and Installation"](#) (VQ35DE).
2. Remove the brake caliper assembly and reposition aside, without disconnecting the hydraulic hose, using power tools. Refer to [BR-22, "Removal and Installation of Caliper Assembly and Disc Rotor"](#).
  - Leave the brake hydraulic hose connected to the brake caliper.
  - Do not depress the brake pedal, or the caliper piston will pop out.
  - Do not pull or twist the brake hydraulic hose.
3. Disconnect the parking brake wire front end. Refer to [PB-4, "Removal and Installation"](#).
4. Remove the rear ABS wheel sensors. Refer to [BRC-43, "Removal and Installation"](#).
5. Set a suitable jack to support the rear suspension assembly.
6. Remove the upper shock absorber nuts using power tools.
7. Remove the suspension member nuts and member stay bolts using power tools.
8. Use the jack to support and lower the rear suspension assembly for removal.

### Installation

Installation is in the reverse order of removal. Refer to [RSU-2, "Precautions"](#).

- Check the rear wheel alignment and adjust if necessary. Refer to [RSU-6, "Rear Wheel Alignment"](#).

## SHOCK ABSORBER

### Removal

1. Remove the wheel and tire using power tools.
2. Set a suitable jack on the rear lower link to remove the lower shock absorber nut and bolt using power tools.
3. Remove the suitable jack from the rear lower link.
4. Remove the upper shock absorber nut and bolt using power tools.
5. Remove the shock absorber.

### Installation

Installation is in the reverse order of removal.

## SUSPENSION ARM

### Removal

1. Remove the rear suspension assembly. Refer to [RSU-9, "Removal and Installation"](#).
2. Remove the connecting rod bracket from the suspension arm using power tools.
3. Remove the two suspension arm bolts and nuts from the suspension member side of the suspension arm using power tools.
4. Remove the ball joint cotter pin and lock nut using power tools.
  - Discard the cotter pin, use a new cotter pin for installation.
5. Remove the suspension arm from the knuckle using Tool.

**Tool number** : HT72520000 (J-25730-A)

#### CAUTION:

- Do not damage ball joint when removing.
- While using Tool, temporarily tighten the nut so as not to damage screw threads.

### Installation

Installation is in the reverse order of removal.

- Discard the cotter pin, use a new cotter pin for installation.
- Check the rear wheel alignment and adjust if necessary. Refer to [RSU-6, "Rear Wheel Alignment"](#).

# REAR SUSPENSION ASSEMBLY

## RADIUS ROD

### Removal

1. Remove the rear suspension assembly. Refer to [RSU-9, "Removal and Installation"](#) .
2. Remove the radius rod using power tools.

### Installation

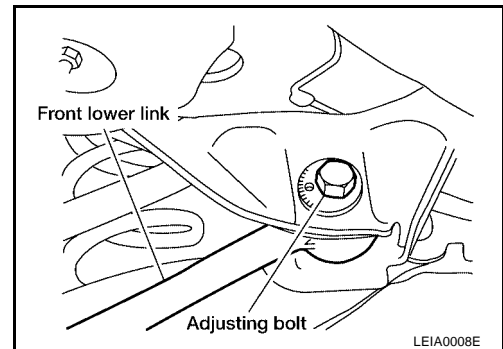
Installation is in the reverse order of removal.

- Check the rear wheel alignment and adjust if necessary. Refer to [RSU-6, "Rear Wheel Alignment"](#) .

## FRONT LOWER LINK

### Removal

1. Remove the front lower link nut and bolt from the knuckle side and the adjusting bolt and nut from the suspension member side using power tools.
  - Do not reuse the adjusting nut, use a new adjusting nut for installation.
2. Remove the front lower link.



### Installation

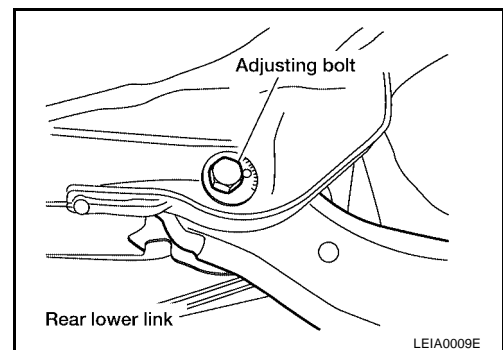
Installation is in the reverse order of removal.

- Do not reuse the adjusting nut, use a new adjusting nut for installation.
- Check the rear wheel alignment and adjust if necessary. Refer to [RSU-6, "Rear Wheel Alignment"](#) .

## REAR LOWER LINK AND COIL SPRING

### Removal

1. Loosen the rear lower link bolt and nut from the suspension member side.
2. Support the rear lower link by placing a suitable jack under the knuckle.
3. Remove the rear lower link adjusting bolt and nut from the suspension member side using power tool.
  - Do not reuse the adjusting nut, use a new adjusting nut for installation.
4. Slowly lower the jack to lower the rear lower link and coil spring.
5. Remove the upper rubber seat, coil spring, and lower rubber seat from the rear lower link.
6. Remove rear lower link bolt and nut from the suspension member side using power tool.
7. Remove the rear lower link.



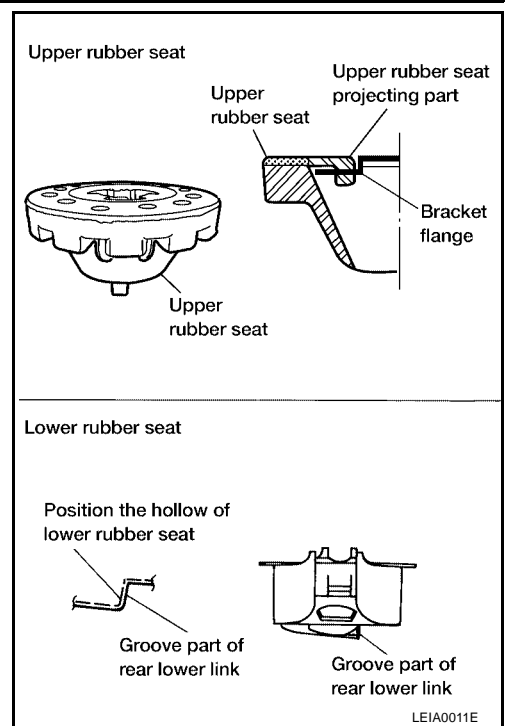
### Installation

Installation is in the reverse order of removal.

- Do not reuse the adjusting nut, use a new adjusting nut for installation.

# REAR SUSPENSION ASSEMBLY

- Check that the projecting part inside the upper rubber seat and the bracket flange are attached as shown.
- Check that the projection part outside the upper rubber seat is directed toward the front of the vehicle.
- Position the hollow of the lower rubber seat with the groove part of the rear lower link.
- Install the coil spring so that the side with the two paint markers is directed toward the lower side.
- Check the rear wheel alignment and adjust if necessary. Refer to [RSU-6, "Rear Wheel Alignment"](#) .



## STABILIZER BAR

### Removal

1. Disconnect the stabilizer bar from connecting rod, using power tools.
2. Remove the stabilizer bar clamps and bushings using power tools.
3. Remove the stabilizer bar.

### Installation

Installation is in the reverse order of removal.

## Inspection

### SHOCK ABSORBER ASSEMBLY

EES0017N

- Check for smooth operation through a full stroke for both compression and extension.
- Check for oil leakage on the welded or gland packing portions.
- Check the shock absorber piston rod for cracks, deformation, or other damage and replace if necessary.

## SUSPENSION ARM

- Check the suspension arm for damage, cracks, deformation and replace if necessary.
- Check the rubber bushings for damage, cracks and deformation. Replace suspension arm if necessary.
- Check the ball joint. Replace the suspension arm assembly if any of the following conditions exist:
  - Ball stud is worn.
  - Joint is hard to swing.
  - Check if the swinging force "A", turning force "B", or vertical end play "C" is out of specification.

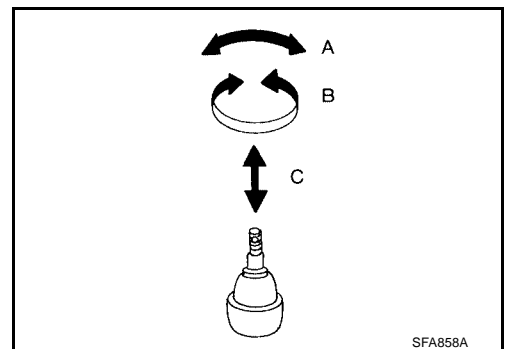
### NOTE:

Before checking specifications, turn the ball joint at least 10 revolutions so the ball joint is properly broken in.

**Swinging force "A"** : Refer to [RSU-13, "Ball Joint"](#) .

**Turning force "B"** : Refer to [RSU-13, "Ball Joint"](#) .

**Vertical end play "C"** : Refer to [RSU-13, "Ball Joint"](#) .



## RADIUS ROD

- Check the radius rod for any deformation, cracks, or damage and replace if necessary.

## REAR SUSPENSION ASSEMBLY

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- After installing the radius rod, check the wheel alignment and adjust if necessary. Refer to [RSU-6, "Rear Wheel Alignment"](#).

### FRONT LOWER LINK

- Check the front lower link for any deformation, cracks, or damage and replace if necessary.

### UPPER AND LOWER RUBBER SEATS

- Check the upper and lower rubber seats for deterioration, or cracks and replace if necessary.

### REAR LOWER LINK AND COIL SPRING

- Check the rear lower link and coil spring for any deformation, cracks, or other damage and replace if necessary.

### STABILIZER BAR

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

# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

PF0:00030

### General Specifications (Rear)

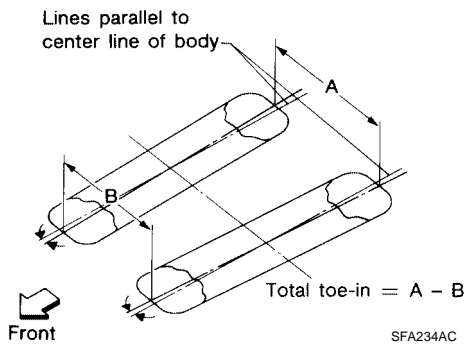
EES00170

Suspension type	Multi-link independent suspension
Shock absorber type	Double-acting hydraulic

### Rear Wheel Alignment (Unladen\*)

EES0017P

Market		United States and Canada			Mexico
		QR25DE	VQ35DE		QR25DE VQ35DE
Engine		QR25DE	VQ35DE		QR25DE VQ35DE
Model		Base / S	SL / SE	SE-R	Base / S / SE
Camber Degree minute (Decimal degree)	Minimum	-0° 04' (-0.07°)	-0° 2' (-0.03°)	-0° 13' (-0.22°)	-0° 30' (0.50°)
	Nominal	-0° 34' (-0.57°)	-0° 32' (-0.53°)	-0° 43' (-0.72°)	0° 0' (0°)
	Maximum	-0° 64' (-1.07°)	-1° 2' (-1.03°)	-1° 13' (-1.22°)	0° 30' (0.50°)

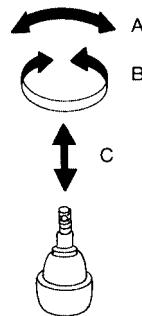


Total toe-in	Distance (A - B) mm (in)	Minimum	2.4 (0.09)	2.3 (0.09)	1.3 (0.05)
		Nominal	3.9 (0.15)	3.8 (0.15)	2.8 (0.11)
		Maximum	5.4 (0.21)	5.3 (0.21)	4.3 (0.17)
	Distance difference between RH and LH side mm (in)	Minimum	-2 (-0.08)		
		Nominal	0 (0)		
		Maximum	2 (0.08)		
	Angle (left plus right) Degree minute (decimal degree)	Minimum	0° 6' (0.10°)		0° 3' (0.05°)
		Nominal	0° 10' (0.17°)		0° 7' (0.12°)
		Maximum	0° 14' (0.23°)		0° 11' (0.18°)

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

### Ball Joint

EES0017Q



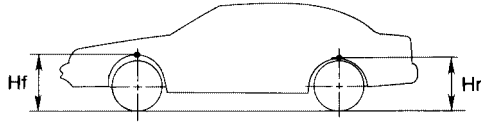
Swinging force "A" (Measuring point: cotter pin hole of ball stud) N (kg-f, lb-f)	7.8 - 54.9 (0.8 - 5.6, 1.8 - 12.3)
Turning torque "B" N-m (kg-cm, in-lb)	0.49 - 3.43 (5.0 - 35.0, 4.3 - 30.4)
Vertical end play "C" mm (in)	0 (0)

# SERVICE DATA AND SPECIFICATIONS (SDS)

## Wheelarch Height (Unladen\*)

EES001C1

Unit: mm (in)



SFA818A

Market	United States and Canada				Mexico	
Engine	QR25DE	VQ35DE			QR25DE	VQ35DE
Model	Base/S	SL	SE	SE-R	Base/S	SE
Tire size	215/60R16	215/60R16	215/55R17	225/45R18	215/60R16	215/55R17
Front (Hf)	722 (28.43)	717 (28.23)	722 (28.43)	721 (28.39)	742 (29.21)	741 (29.17)
Rear (Hr)	695 (27.36)	696 (27.40)	701 (27.60)	695 (27.36)	715 (28.15)	718 (28.27)

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