

SECTION **RSU**
 REAR SUSPENSION

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RSU

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PRECAUTIONS

< SERVICE INFORMATION >

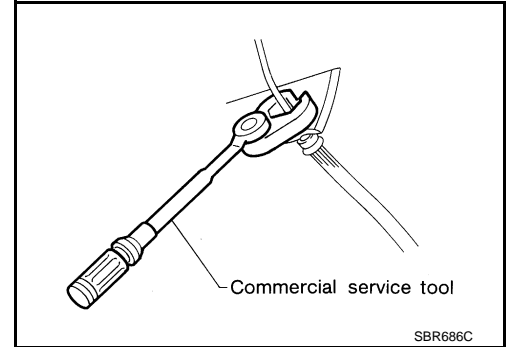
SERVICE INFORMATION

PRECAUTIONS

Precaution

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- 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 are full. Spare tire, jack, hand tools and mats in designated positions.
- Use flare nut wrench when removing or installing brake tubes.
- After installing removed suspension parts, check wheel alignment.
- Do not jack up at the trailing arm and lateral link.
- Always torque brake lines when installing.
- Lock nuts are not reusable parts; always use new ones. When replacing, do not wipe the oil off of the new lock nut before tightening.



PREPARATION

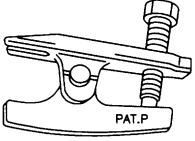
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PREPARATION

Special Service Tool

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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 suspension arm ball joint

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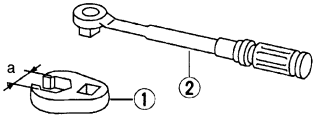
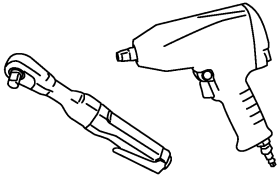
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Commercial Service Tool

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Tool name	Description
1. Flare nut crowfoot 2. Torque wrench  S-NT360	Removing and installing brake piping a: 10 mm (0.39 in)
Power tool  PBIC0190E	Loosening bolts and nuts

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NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

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NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

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

Reference page		RSU-5	RSU-11	RSU-5	RSU-5	RSU-16	RSU-5	RSU-6	RSU-17	FAX-4, "NVH Troubleshooting Chart"	RAX-4, "NVH Troubleshooting Chart"	WT-4, "NVH Troubleshooting Chart"	WT-4, "NVH Troubleshooting Chart"	BR-4, "NVH Troubleshooting Chart"	PS-5, "NVH Troubleshooting Chart"
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

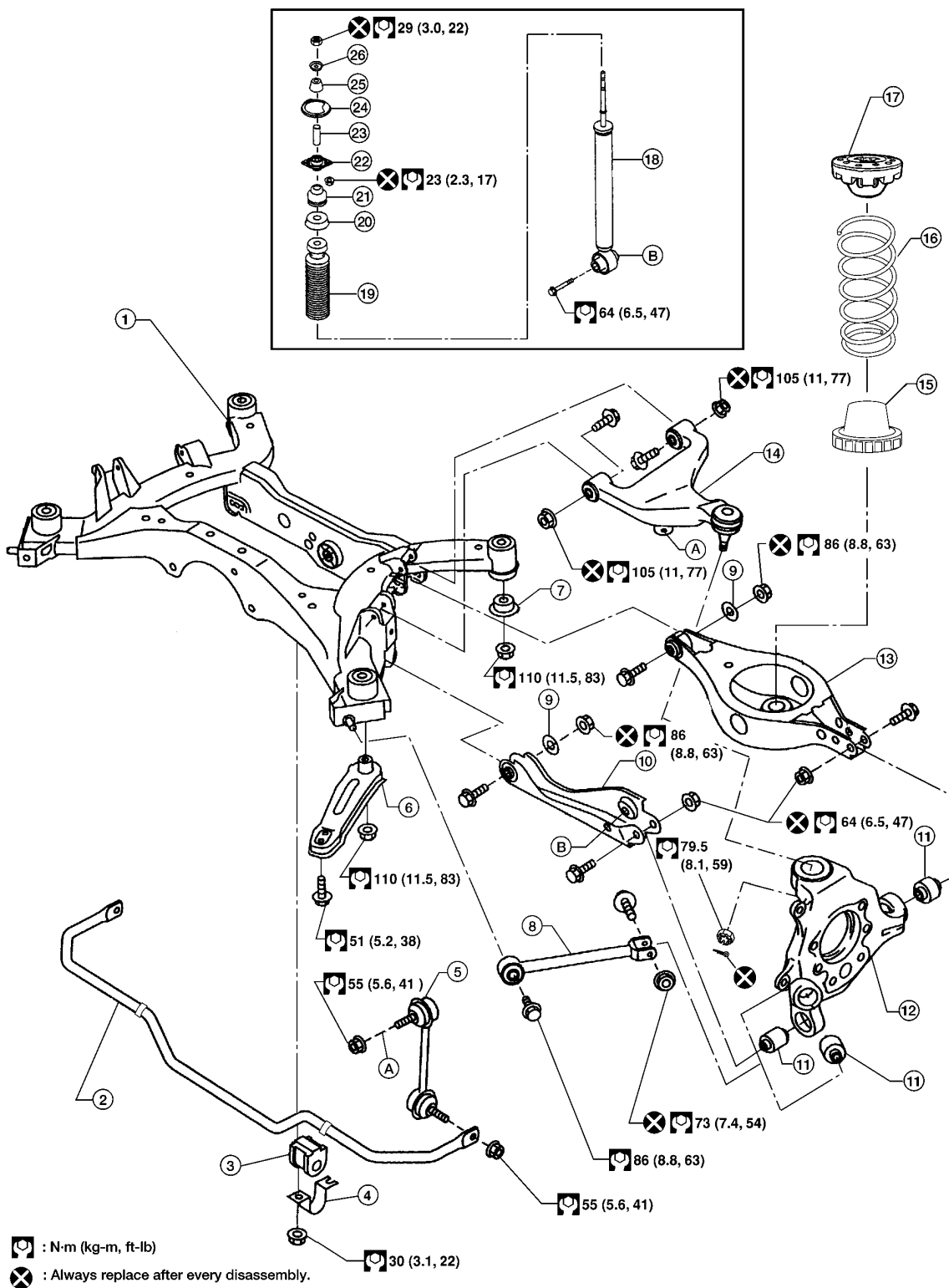
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REAR SUSPENSION ASSEMBLY

Component

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|---------------------------|-------------------|---------------------------|
| 1. Rear suspension member | 2. Stabilizer bar | 3. Stabilizer bar bushing |
| 4. Stabilizer bar clamp | 5. Connecting rod | 6. Member stay |
| 7. Member stopper | 8. Radius rod | 9. Adjusting bolt cam |

RSU-5

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REAR SUSPENSION ASSEMBLY

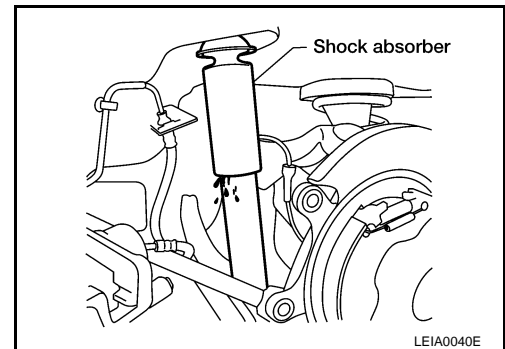
< SERVICE INFORMATION >

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|------------------------|--------------------------|------------------------------------|
| 10. Front lower link | 11. Bushing | 12. Wheel hub and spindle assembly |
| 13. Rear lower link | 14. Suspension arm | 15. Lower rubber seat |
| 16. Coil spring | 17. Upper rubber seat | 18. Shock absorber |
| 19. Bound bumper cover | 20. Bound bumper | 21. Lower bushing |
| 22. Upper bracket | 23. Upper bracket sleeve | 24. Gasket |
| 25. Upper bushing | 26. Washer | |

On-vehicle Service

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- Check 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. Refer to [RSU-5, "Component"](#).
- Make sure that the suspension arm cotter pin is inserted.
- Check the shock absorber for any oil leakage or other damage.
- Check wheelarch height. Refer to [RSU-19, "Wheelarch Height \(Unladen*\)"](#).
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.



Rear Wheel Alignment

INFOID:000000001718192

Before checking rear wheel alignment, be sure to make a preliminary inspection.

PRELIMINARY INSPECTION

- Check tires for wear and for improper inflation.
- Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout. Refer to [WT-5, "Inspection"](#).
- Check rear wheel bearings for looseness.
- Check rear suspension for looseness.
- Check that rear shock absorber works properly.
- Check wheelarch height (unladen*). Refer to [RSU-19, "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.

THE ALIGNMENT PROCESS

IMPORTANT: Use only the alignment specifications listed in this Service Manual. Refer to [RSU-18, "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.

REAR SUSPENSION ASSEMBLY

< SERVICE INFORMATION >

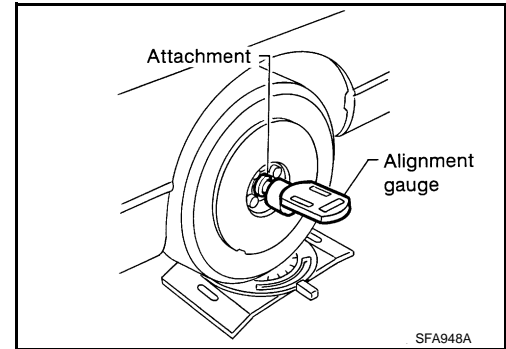
- Some newer alignment machines are equipped with an optional "Rolling Compensation" method to "compensate" the sensors (alignment targets or head units). **Do NOT use this "Rolling Compensation" method.**
 - Use the "Jacking Compensation" method. After installing the alignment targets or head units, 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 camber of both right and left wheels with a suitable alignment gauge and adjust in accordance with the following procedures.

Camber : Refer to [RSU-18. "Rear Wheel Alignment \(Unladen*\)"](#).

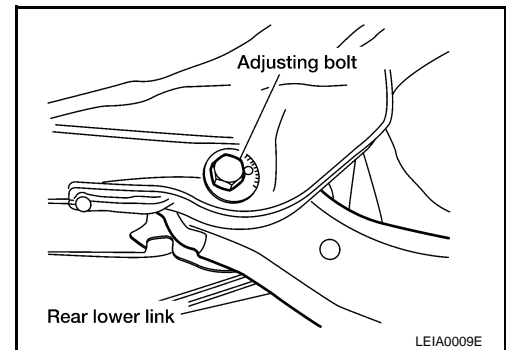
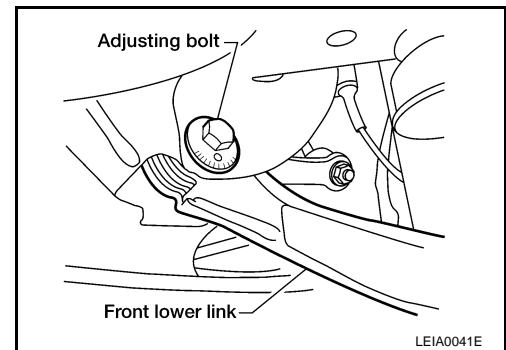
- If camber is not within specification, adjust by turning the adjusting bolts in the same direction.



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

NOTE:

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



- Tighten adjusting bolt nuts to specification. Refer to [RSU-5. "Component"](#).

TOE-IN

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

WARNING:

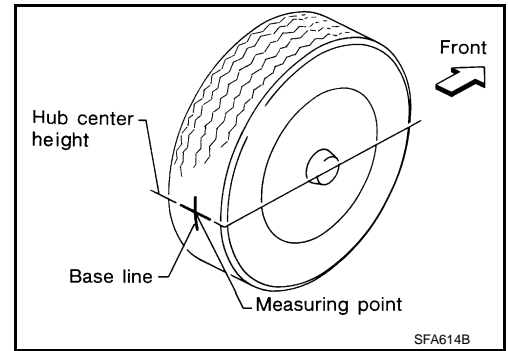
- Always perform the following procedure on a flat surface.**
- Make sure that no person is in front of the vehicle before pushing it.**

- Bounce rear of vehicle up and down to stabilize the posture.
- Push the vehicle straight ahead about 5 m (16 ft).

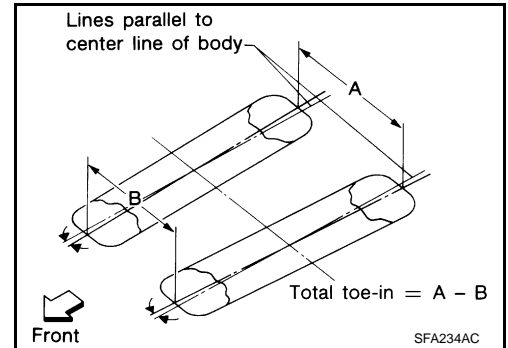
REAR SUSPENSION ASSEMBLY

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- 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.

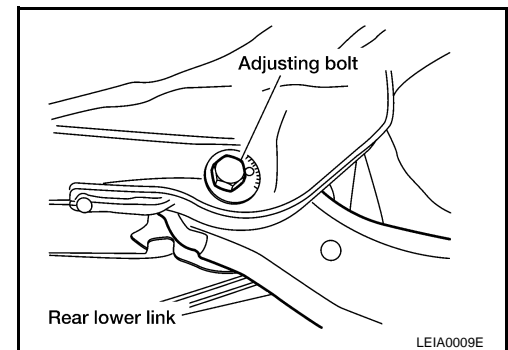
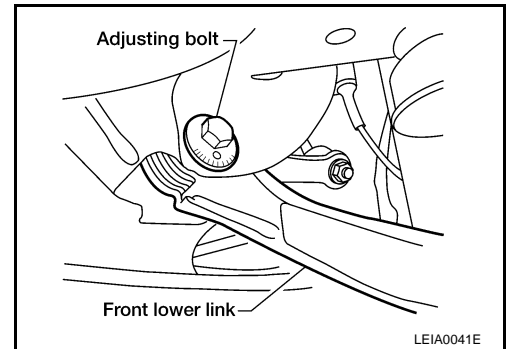


- Measure distance "A" (rear side).
- Push the vehicle slowly ahead to rotate the wheels 180° degrees (1/2 turn).
If the wheels have rotated more than 180° degrees (1/2 turn), try the above procedure again from the beginning. Never push vehicle backward.
- Measure distance "B" (front side).



Total toe-in : Refer to [RSU-18, "Rear Wheel Alignment \(Unladen*\)"](#).

- Adjust toe-in by turning the adjusting bolts.
NOTE:
Toe changes about 1.5 mm (0.059 in) [one side] with each graduation of the adjusting bolt.



- Tighten the adjusting bolt nuts to specification. Refer to [RSU-5, "Component"](#).

REAR SUSPENSION MEMBER

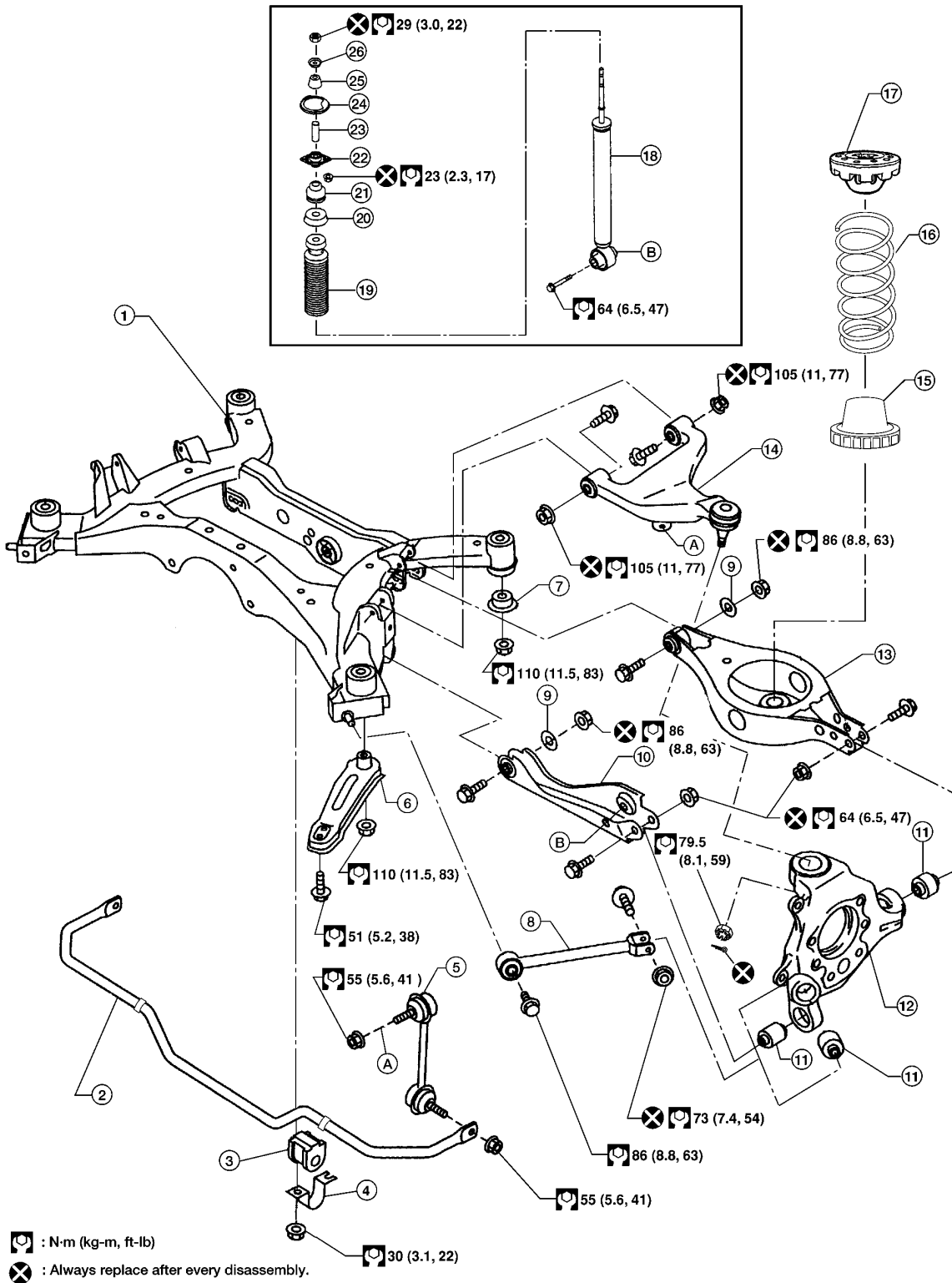
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REAR SUSPENSION MEMBER

Removal and Installation

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Rear Suspension Assembly



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|---------------------------|-------------------|---------------------------|
| 1. Rear suspension member | 2. Stabilizer bar | 3. Stabilizer bar bushing |
| 4. Stabilizer bar clamp | 5. Connecting rod | 6. Member stay |
| 7. Member stopper | 8. Radius rod | 9. Adjusting bolt cam |

RSU-9

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REAR SUSPENSION MEMBER

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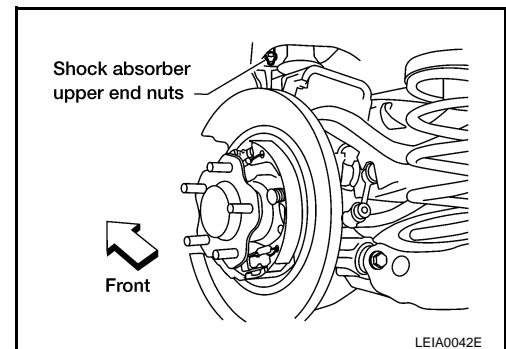
- | | | |
|------------------------|--------------------------|------------------------------------|
| 10. Front lower link | 11. Bushing | 12. Wheel hub and spindle assembly |
| 13. Rear lower link | 14. Suspension arm | 15. Lower rubber seat |
| 16. Coil spring | 17. Upper rubber seat | 18. Shock absorber |
| 19. Bound bumper cover | 20. Bound bumper | 21. Lower bushing |
| 22. Upper bracket | 23. Upper bracket sleeve | 24. Gasket |
| 25. Upper bushing | 26. Washer | |

REMOVAL

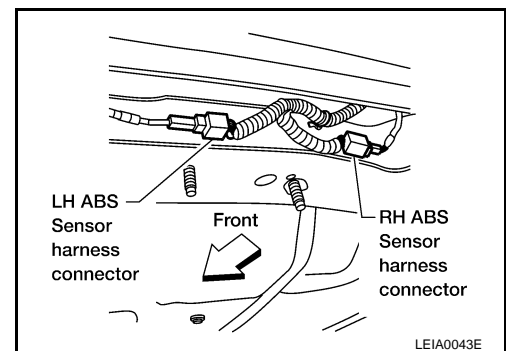
CAUTION:

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

1. Remove the center exhaust tube with mufflers using power tool. Refer to [EX-5. "Removal and Installation"](#).
2. Disconnect the parking brake cable assemblies from the front cable. Refer to [PB-5. "Removal and Installation"](#).
3. Remove the brake caliper assemblies from the rear wheel hub and spindle assemblies without disconnecting the brake lines, using power tool. Position the brake caliper assemblies aside using suitable wire. Refer to [BR-33. "Removal and Installation of Caliper Assembly and Disc Rotor"](#).
 - Leave the brake line connected to the brake caliper.
 - Do not depress the brake pedal, or the piston will pop out.
 - Do not pull or twist the brake hose.
4. Remove the shock absorber upper end nuts using power tool.



5. Disconnect the LH and RH ABS sensor harness connectors, and disconnect the ABS sensor harness from the rear suspension member.
6. Remove the LH and RH member stay bolts using power tool.
7. Use a support jack or suitable tool, to support the rear suspension member.
8. Remove the rear suspension member nuts using power tool. Then lower the rear suspension member assembly using the support jack.



INSTALLATION

Installation is in the reverse order of removal.

SHOCK ABSORBER

< SERVICE INFORMATION >

SHOCK ABSORBER

Removal and Installation

INFOID:000000001718194

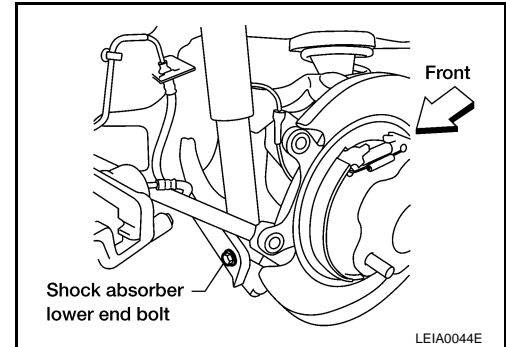
REMOVAL

1. Remove the wheel and tire assembly using power tool. Refer to [WT-6](#).
2. Set a transmission jack or suitable tool, under the rear lower link to relieve the coil spring tension, then remove the shock absorber lower end bolt using power tool.

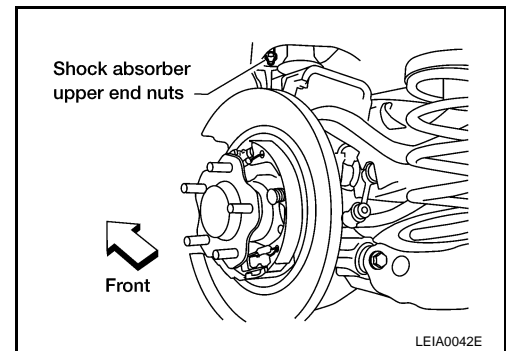
NOTE:

The rear brake rotor has been removed for clarity only.

3. Remove the transmission jack supporting the rear lower link.



4. Remove the shock absorber upper end nuts using power tool.



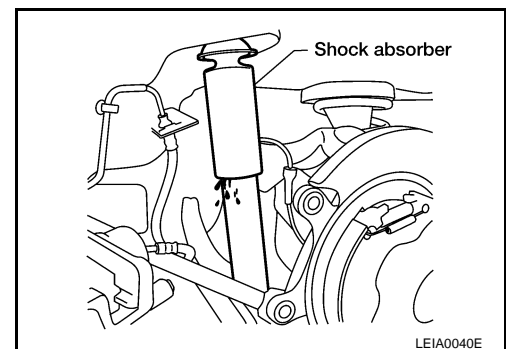
INSTALLATION

Installation is in the reverse order of removal. Refer to [RSU-5, "Component"](#).

Inspection

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



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SUSPENSION ARM

< SERVICE INFORMATION >

SUSPENSION ARM

Removal and Installation

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REMOVAL

1. Remove the rear suspension member assembly using power tool. Refer to [RSU-9. "Removal and Installation"](#).
2. Disconnect the connecting rod upper joint from the suspension arm using power tool.
3. Remove the suspension arm nuts and bolts on the suspension member side using power tool.
4. Remove the suspension arm cotter pin and lock nut on the wheel hub and spindle assembly side using power tool.
5. Disconnect the suspension arm from the wheel hub and spindle assembly using Tool.

Tool number : HT72520000 (J-25730-A)

CAUTION:

- Do not damage ball joint with Tool.
- While using Tool, temporarily tighten the lock nut so as not to damage the ball joint stud threads.

INSTALLATION

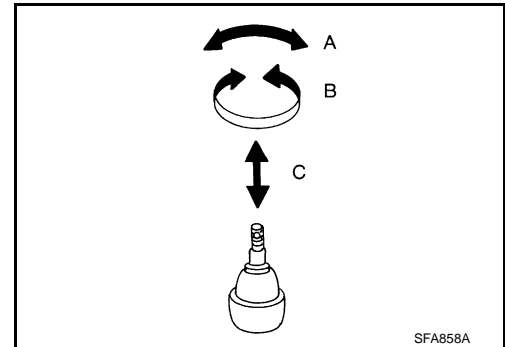
Installation is in the reverse order of removal. Refer to [RSU-5. "Component"](#).

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

Inspection

INFOID:000000001718197

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



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Swinging force "A" : Refer to [RSU-18. "Ball Joint"](#).

Turning force "B" : Refer to [RSU-18. "Ball Joint"](#).

Vertical end play "C" : Refer to [RSU-18. "Ball Joint"](#).

RADIUS ROD

< SERVICE INFORMATION >

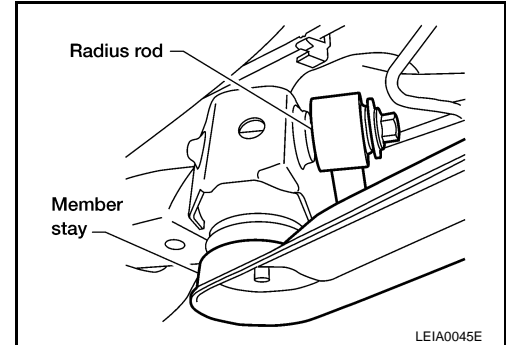
RADIUS ROD

Removal and Installation

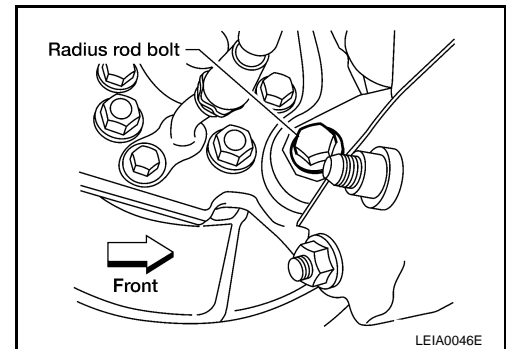
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REMOVAL

1. Remove the wheel and tire assembly using power tool. Refer to [WT-6](#).
2. Set a transmission jack or suitable tool, to relieve the coil spring tension and support the radius rod.
3. Disconnect the radius rod from the rear suspension member using power tool.



4. Disconnect the radius rod nut and bolt from the wheel hub and spindle assembly using power tool, then remove the radius rod.



INSTALLATION

Installation is in the reverse order of removal. Refer to [RSU-5. "Component"](#).

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

Inspection

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

FRONT LOWER LINK

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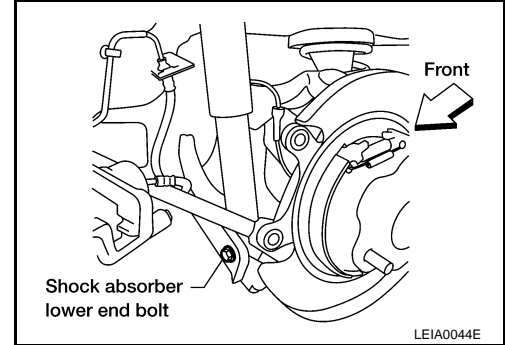
FRONT LOWER LINK

Removal and Installation

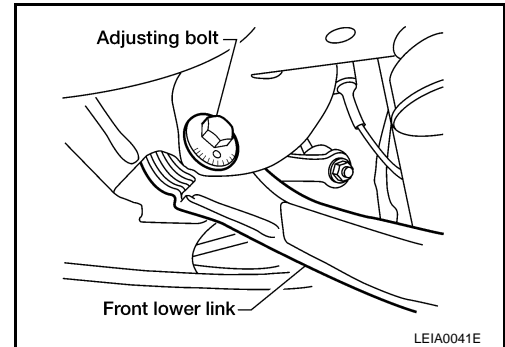
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REMOVAL

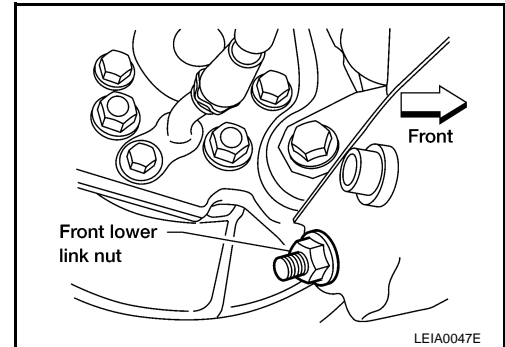
1. Remove the wheel and tire assembly using power tool. Refer to [WT-6](#).
2. Set a transmission jack or suitable tool, to relieve the coil spring tension and support the front lower link.
3. Disconnect the shock absorber lower end bolt using power tool.



4. Remove the front lower link adjusting bolt using power tool.



5. Disconnect the front lower link nut and bolt from the wheel hub and spindle assembly using power tool, then remove front lower link.



INSTALLATION

Installation is in the reverse order of removal. Refer to [RSU-5, "Component"](#).

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

Inspection

INFOID:000000001718201

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

REAR LOWER LINK AND COIL SPRING

< SERVICE INFORMATION >

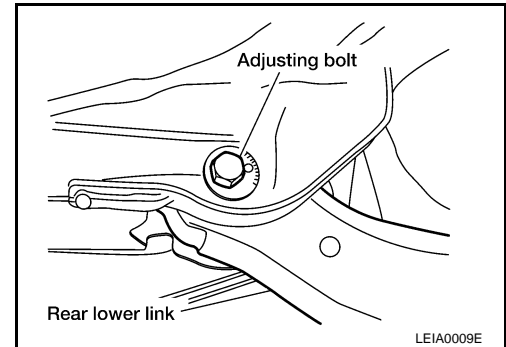
REAR LOWER LINK AND COIL SPRING

Removal and Installation

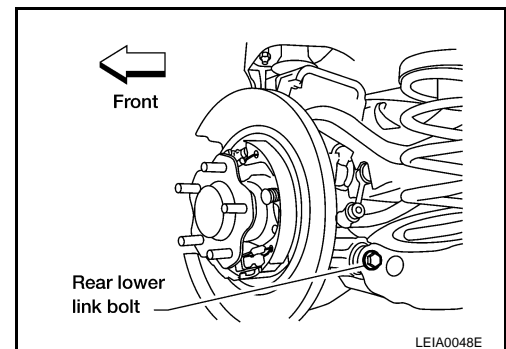
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REMOVAL

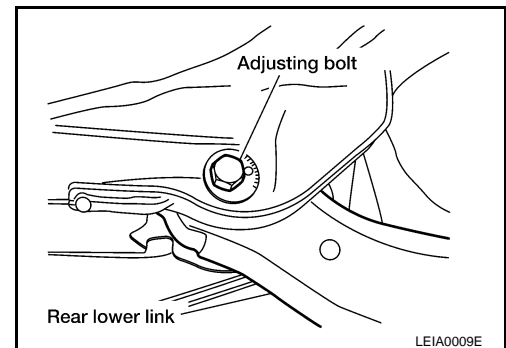
1. Remove the wheel and tire assembly using power tool. Refer to [WT-6](#).
2. Set a transmission jack or suitable tool, to relieve the coil spring tension and support the rear lower link.
3. Loosen the rear lower link adjusting bolt and nut connected to the rear suspension member, using power tool.



4. Remove the rear lower link bolt and nut from the wheel hub and spindle assembly using power tool.



5. Slowly lower the transmission jack to release the coil spring tension. Then remove upper rubber seat, coil spring and lower rubber seat from the rear lower link.
6. Remove the rear lower link adjusting bolt and nut from the rear suspension member using power tool, then remove the rear lower link.



INSTALLATION

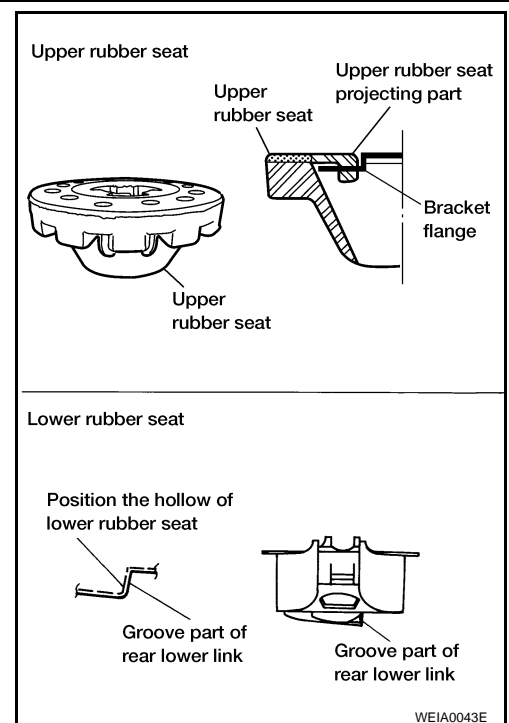
Installation is in the reverse order of removal. Refer to [RSU-5. "Component"](#).

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REAR LOWER LINK AND COIL SPRING

< SERVICE INFORMATION >

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



Inspection

Check for deformation, cracks, or other damage and replace if necessary.

INFOID:000000001718203

STABILIZER BAR

< SERVICE INFORMATION >

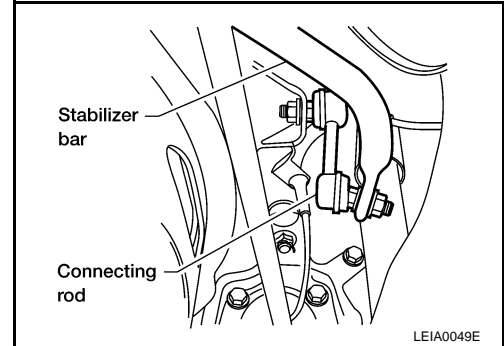
STABILIZER BAR

Removal and Installation

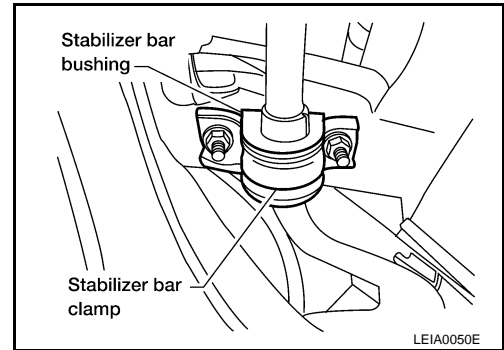
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REMOVAL

1. Disconnect the stabilizer bar ends from the connecting rods using power tool.



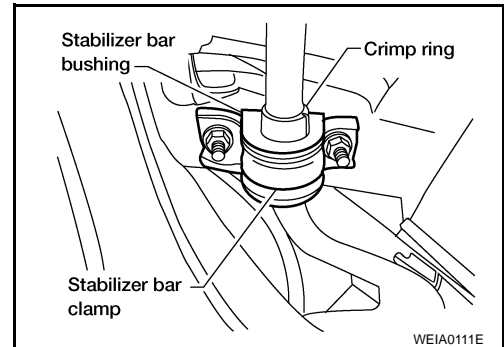
2. Remove the stabilizer bar clamps using power tool, and remove the stabilizer bar bushings.
3. Remove the stabilizer bar.



INSTALLATION

Installation is in the reverse order of removal. Refer to [RSU-5. "Component"](#).

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



Inspection

INFOID:000000001718205

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

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SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE INFORMATION >

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification (Rear)

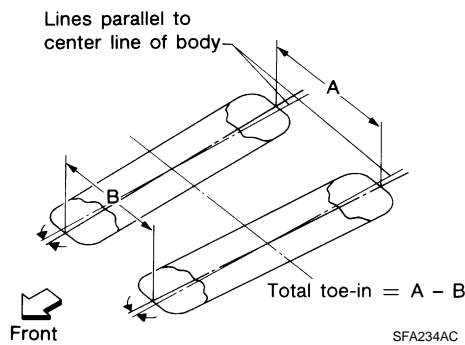
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Suspension type	Independent multi-link suspension
Shock absorber type	Double-acting hydraulic

Rear Wheel Alignment (Unladen*)

INFOID:000000001718207

Market		United States and Canada	Mexico
		Camber Degree minute (Decimal degree)	Minimum Nominal Maximum

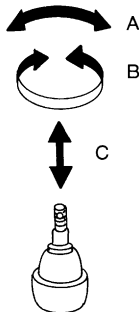


Total toe-in	Distance ("A" - "B") mm (in)	Minimum	1.6 (0.063)	1.6 (0.063)
		Nominal	3.2 (0.126)	3.2 (0.126)
		Maximum	4.8 (0.189)	4.8 (0.189)
	Difference between LH, RH	Minimum	-2.0 (-0.079)	-2.0 (-0.079)
		Nominal	0 (0)	0 (0)
		Maximum	2.0 (0.079)	2.0 (0.079)
Angle (left plus right) Degree minute (Decimal degree)	Minimum	0° 3' 35" (0.06°)	0° 3' 35" (0.06°)	
	Nominal	0° 7' 48" (0.13°)	0° 7' 48" (0.13°)	
	Maximum	0° 12' 0" (0.20°)	0° 12' 0" (0.20°)	

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

Ball Joint

INFOID:000000001718208



SFA858A

Swinging force "A" (measuring point: cotter pin hole of ball stud)	7.8 - 54.9 N (0.8 - 5.6 kg-f, 1.8 - 12.3 lb-f)
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SERVICE DATA AND SPECIFICATIONS (SDS)

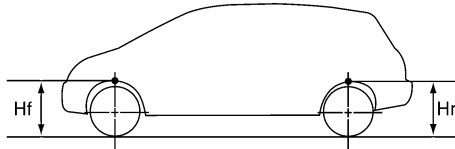
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Turning torque "B"	0.49 - 3.43 N·m (5.0 - 35.0 kg-cm, 4.3 - 30.4 in-lb)
Vertical end play "C"	0 mm (0 in)

Wheelarch Height (Unladen*)

INFOID:000000001718209

Unit: mm (in)



WEIA0030E

Market	United States and Canada	Mexico
Front (Hf)	740 (29.13)	770 (30.31)
Rear (Hr)	749 (29.49)	779 (30.67)

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

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