

SECTION **RSU**
 REAR SUSPENSION

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RSU

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PRECAUTIONS

PRECAUTIONS

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Precautions for Rear Suspension

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- 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. There are no passengers in the vehicle.
- After installing suspension components, check the wheel alignment.
- Caulking nuts are not reusable. Always use new caulking nuts for installation. New caulking nuts are pre-oiled, do not apply any additional lubrication.

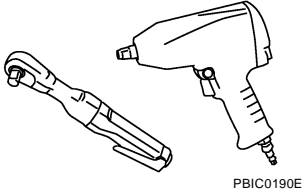
PREPARATION

PREPARATION

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Commercial Service Tools

EES001A7

Tool name	Description
<p data-bbox="133 296 259 323">Power tool</p>  <p data-bbox="915 499 987 514">PBIC0190E</p>	<p data-bbox="1052 296 1318 323">Removing bolts and nuts</p>

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REAR SUSPENSION ASSEMBLY

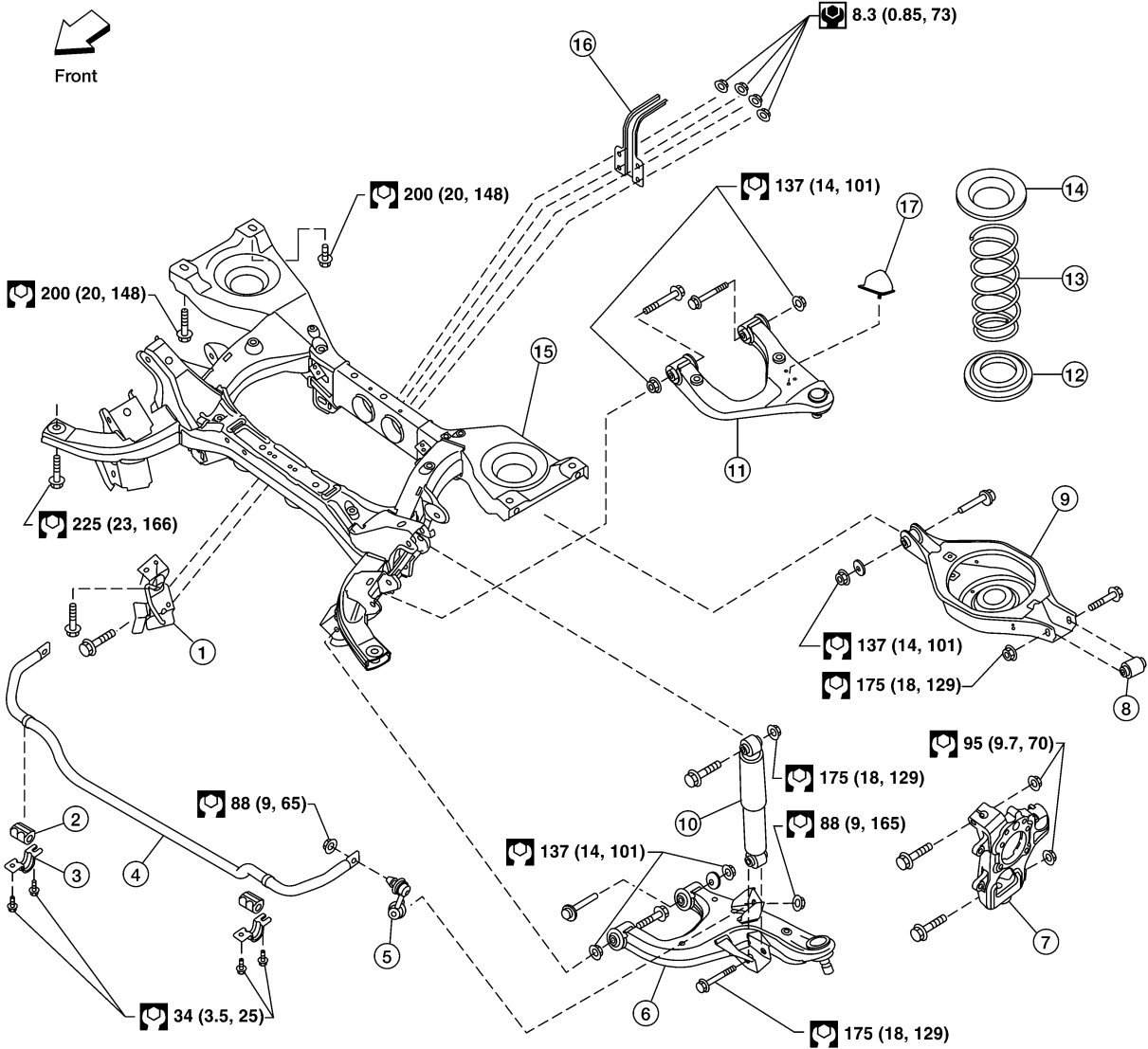
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REAR SUSPENSION ASSEMBLY

Components

SEC. 431 • 432



N-m (kg-m, in-lb)

N-m (kg-m, ft-lb)

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

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On-Vehicle Inspection

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- Check all of the component mountings for any excessive looseness, or backlash. Repair or replace the components as necessary.

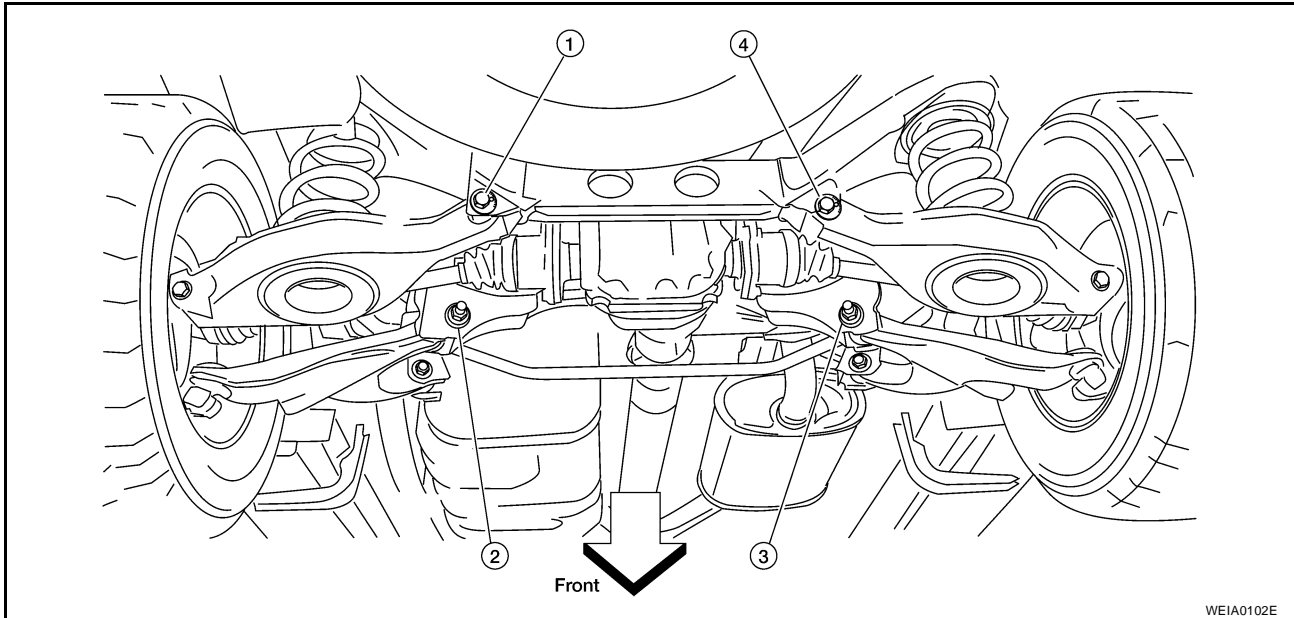
REAR SUSPENSION ASSEMBLY

- Check the components for any excessive wear, damage, or abnormal conditions. Repair or replace the components as necessary.
- Check the shock absorbers for any oil 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.

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 lubricants are all full, and that the spare tire, jack, hand tools and mats are in their designated positions, and there are no passengers in the vehicle.
2. Check the tires for incorrect air pressure and excessive wear. Refer to [WT-33, "Tire"](#).
3. Check the wheels for runout and damage. Refer to [WT-4, "Inspection"](#).
4. Check the wheel bearing axial end play.

Axial end play : 0 mm (0 in)

5. Check the shock absorbers for any oil leaks or damage.
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-22, "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.

REAR SUSPENSION ASSEMBLY

- Check with the manufacturer of your specific alignment machine for their recommended Service/Calibration Schedule.

THE ALIGNMENT PROCESS

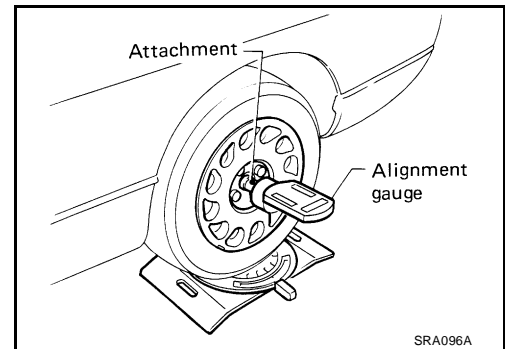
IMPORTANT: Use only the alignment specifications listed in this Service Manual. Refer to [RSU-21, "Wheel Alignment"](#) .

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

1. Measure camber of both the right and left wheels with a suitable alignment gauge and adjust as necessary to specification.

Camber : Refer to [RSU-21, "Wheel Alignment"](#) .



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

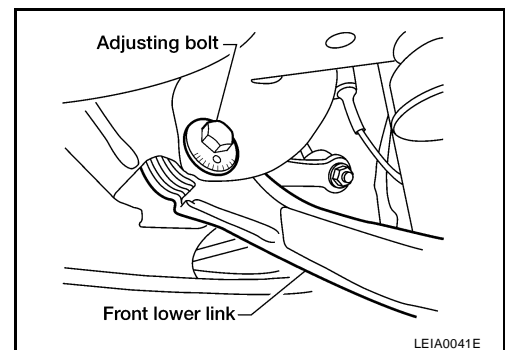
CAUTION:

After adjusting the camber then check the toe-in.

NOTE:

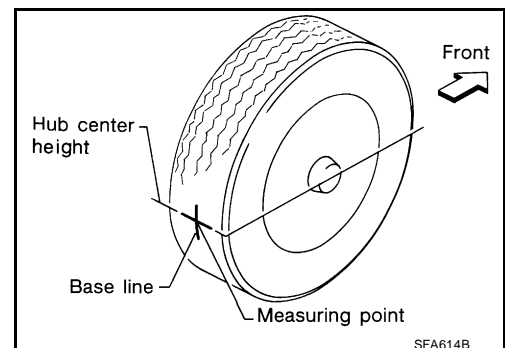
Camber changes about 0° 5' with each graduation of the adjusting bolt.

3. Tighten the adjusting bolt nuts to specification.



TOE-IN

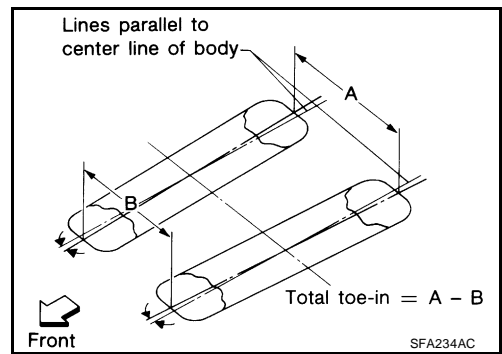
1. Bounce the rear of the vehicle up and down two to three times to stabilize the vehicle height. Refer to [RSU-22, "Wheelarch Height \(Unladen*\)"](#) .
2. Push the vehicle straight ahead about 5 m (16 ft).
3. Put a mark on the base line of the tread (rear side) of both of the tires at the same height as the center of the hub. These will be the measuring points.
4. Measure the distance "A" (rear side) across from tire to tire.



REAR SUSPENSION ASSEMBLY

5. Push the vehicle slowly ahead to rotate the wheels 180° degrees (a half turn).
If the wheels are rotated more than 180° degrees (a half turn), then repeat the above steps. Never push the vehicle backward.
6. Measure the distance "B" (front side) across from tire to tire.

Total toe-in : Refer to [RSU-21, "Wheel Alignment"](#) .



7. If the toe-in is outside the specified value, adjust the toe-in using the adjusting bolt in the rear lower link.

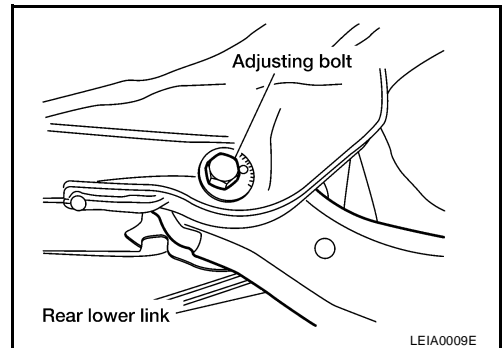
CAUTION:

Be sure to adjust equally on the 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.

8. Tighten the adjusting bolt nuts to specification.



REAR SUSPENSION MEMBER

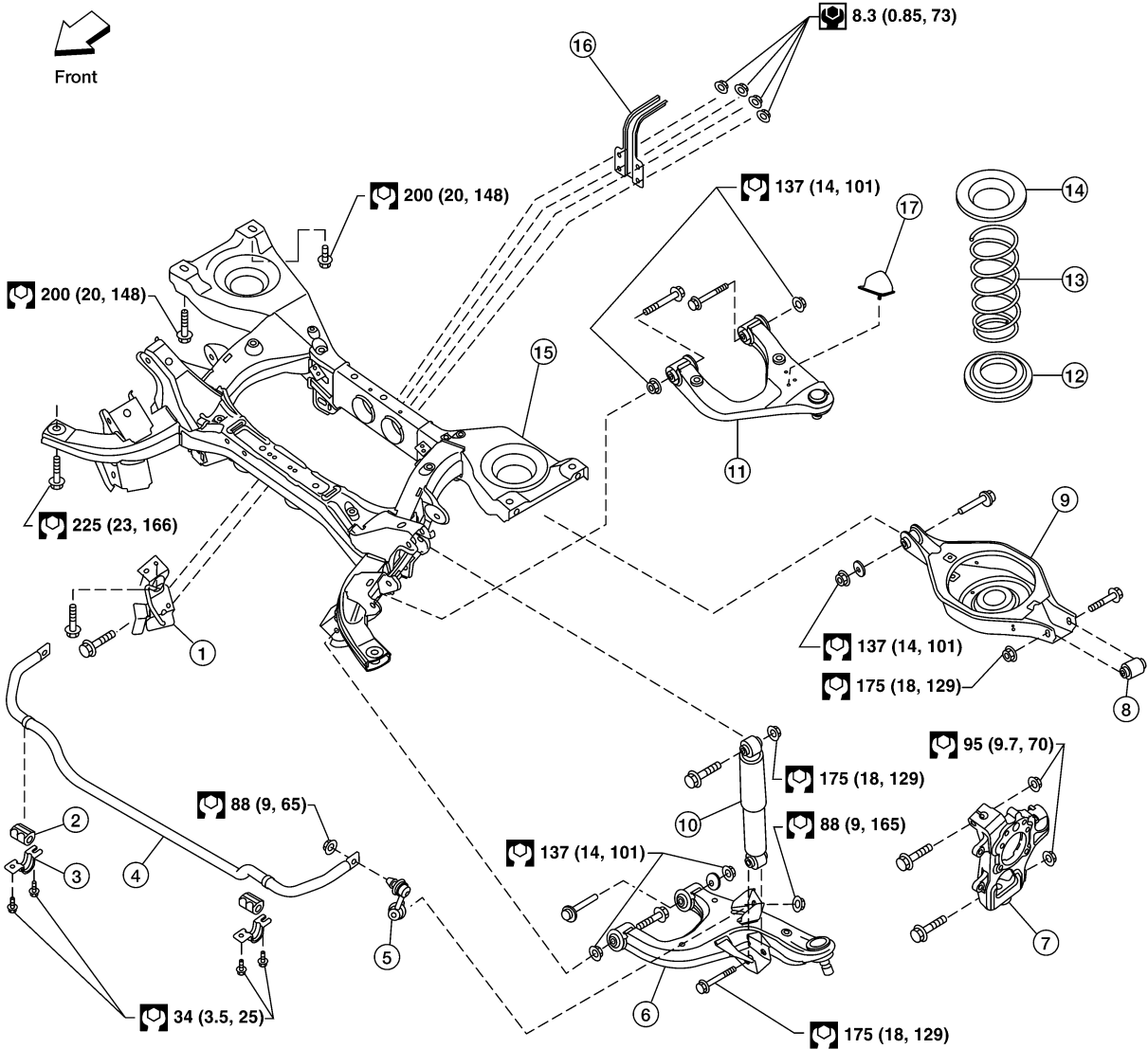
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REAR SUSPENSION MEMBER

Removal and Installation COMPONENTS

SEC. 431 • 432



N-m (kg-m, in-lb)

N-m (kg-m, ft-lb)

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

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REMOVAL

1. Remove both of the rear wheel and tire assemblies using power tool.
2. Remove the spare tire.

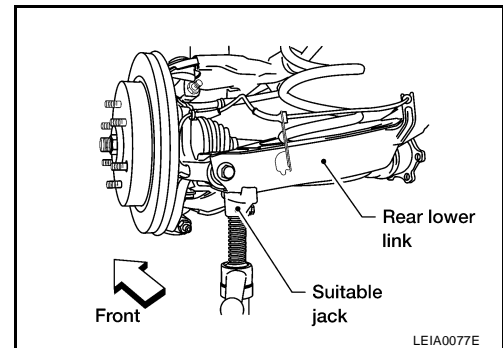
REAR SUSPENSION MEMBER

- Remove the brake caliper without disconnecting the brake hoses, using power tool. Reposition the brake caliper out of the way using a suitable wire. Refer to [BR-31, "Removal and Installation of Brake Caliper and Disc Rotor"](#) .

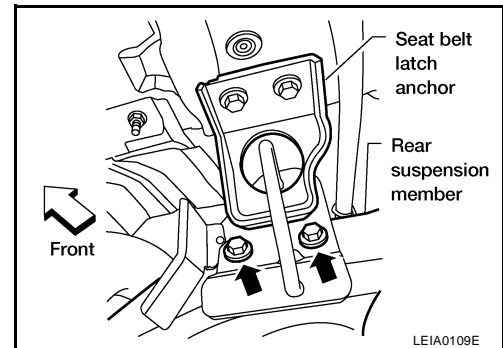
CAUTION:

- Do not crimp or stretch the brake hose when repositioning the brake caliper out of the way.
- Do not press the brake pedal while the brake caliper is positioned out of the way.

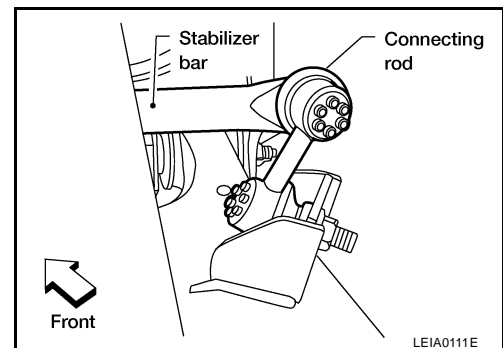
- Remove the two rear brake rotors.
- Remove the two rear drive shafts. Refer to [RAX-7, "Removal and Installation"](#) .
- Disconnect the parking brake cables brackets from the rear suspension member.
- Disconnect the two rear wheel sensor connectors and harness clips.
- Remove the rear final drive vent tube from the rear suspension member and frame.
- Remove the rear final drive. Refer to [RFD-13, "REAR FINAL DRIVE ASSEMBLY"](#) .
- Set a suitable jack to support each of the rear lower links and the coil spring tension.
- Remove both of the rear lower link outer bolts using power tool, and lower the jack to remove the rear coil springs, and the upper and lower rubber seats.



- Remove the two bolts to disconnect the seat belt latch anchor from the rear suspension member using power tool.

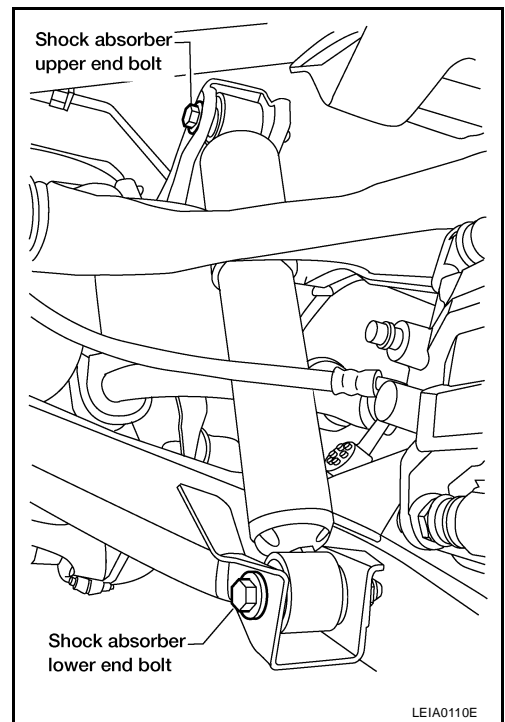


- Disconnect both of the connecting rods from the rear stabilizer bar.

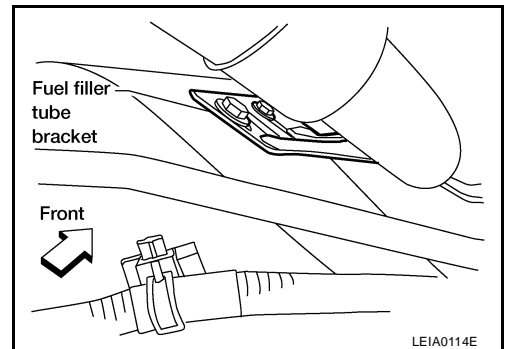


REAR SUSPENSION MEMBER

14. Set a suitable jack under each front lower link for support and remove the shock absorber upper end bolts and lower end bolts using power tool.
15. Remove both of the shock absorbers.



16. Set a suitable jack under the rear suspension member.
17. Remove the six rear suspension member bolts using power tool.
18. Slowly lower the jack supporting the rear suspension member to access the fuel filler tube bracket, then remove the two bolts to disconnect the fuel filler tube bracket from the rear suspension member.



19. Slowly lower the jack to remove the rear suspension member, suspension arm, front and rear lower links, knuckles, and stabilizer bar as an assembly.
20. Remove the suspension arm, spare tire bracket, stabilizer bar, front and rear lower links, and the knuckles from the rear suspension member using power tool.

INSPECTION AFTER REMOVAL

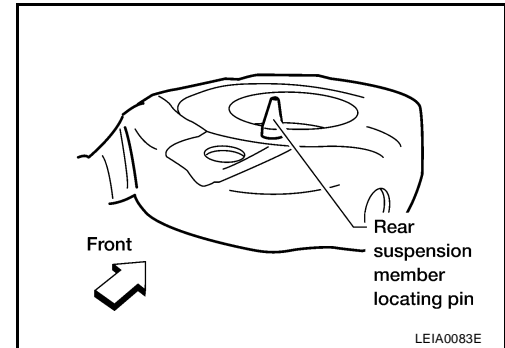
Check rear suspension member for deformation, cracks, and other damage and replace if necessary.

REAR SUSPENSION MEMBER

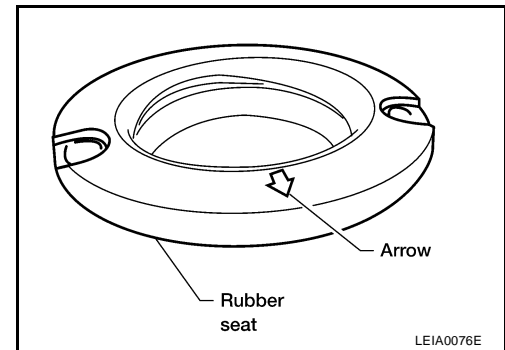
INSTALLATION

Installation is in the reverse order of removal.

- 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 assembly.



- Perform final tightening of the nuts and bolts for the links (with rubber bushings) under unladen conditions with the tires on level ground.
- Adjust the parking brake cables. Refer to [PB-3, "ADJUSTMENT"](#) .
- Check the wheel alignment. Refer to [RSU-21, "Wheel Alignment"](#) .

SHOCK ABSORBER

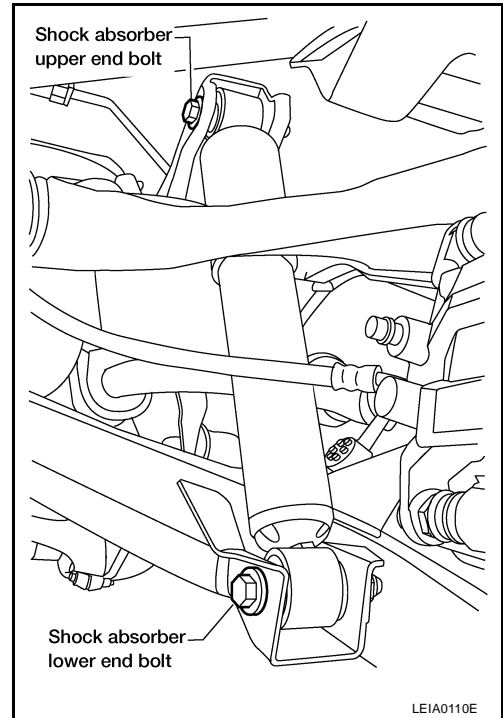
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SHOCK ABSORBER

Removal and Installation REMOVAL

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1. Remove the wheel and tire assembly using power tool. Refer to [WT-6, "Rotation"](#) .
2. Position a suitable jack under the front lower link to support the shock absorber.
3. Remove the shock absorber upper and lower end bolts using power tool.
4. Remove the shock absorber.



INSTALLATION

Installation is in the reverse order of removal.

- Tighten the shock absorber bolts to specification. Refer to [RSU-5, "Components"](#) .

Inspection

EES001AR

- Check for oil leakage on welded or gland packing portions.
- Check the shock absorber for smooth operation through a full stroke, both compression and extension.

SUSPENSION ARM

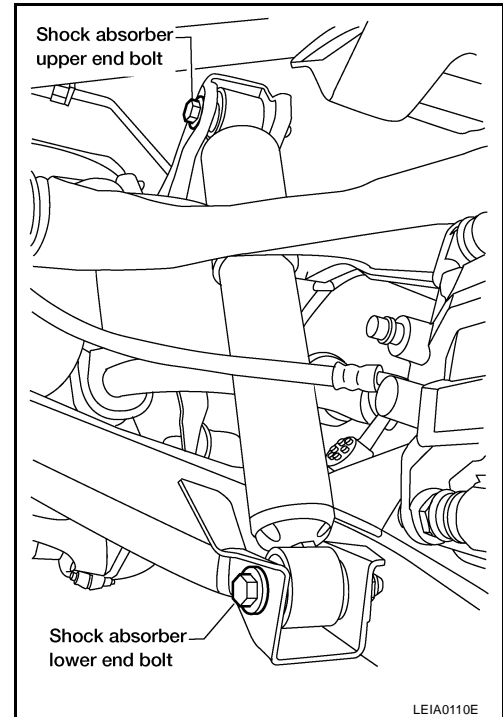
SUSPENSION ARM

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Removal and Installation REMOVAL

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1. Remove the wheel and tire assembly using power tool. Refer to [WT-6, "Rotation"](#) .
2. Remove the brake caliper without disconnecting the brake hoses, using power tool. Reposition the brake caliper out of the way using a suitable wire. Refer to [BR-31, "Removal and Installation of Brake Caliper and Disc Rotor"](#) .
3. Position a suitable jack under the front lower link to support the knuckle.
4. Remove the shock absorber upper and lower end bolts using power tool, and remove the shock absorber.

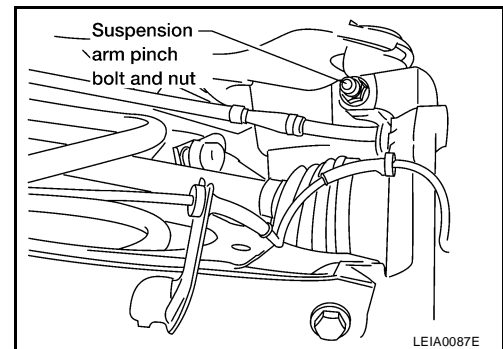


5. Remove the suspension arm upper nuts and bolts on the suspension member side using power tool.
6. Remove the suspension arm pinch bolt and nut on the knuckle side using power tool.
7. Disconnect the suspension arm from the knuckle using a soft hammer.

CAUTION:

Do not damage the ball joint with the soft hammer.

8. Remove the suspension arm.
9. Remove the bound bumper from the suspension arm if necessary to transfer to the new suspension arm.



INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-5, "Components"](#) .
- Perform final tightening of the nuts and bolts for the links (with rubber bushings) under unladen conditions with the tires on level ground.

SUSPENSION ARM

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Inspection

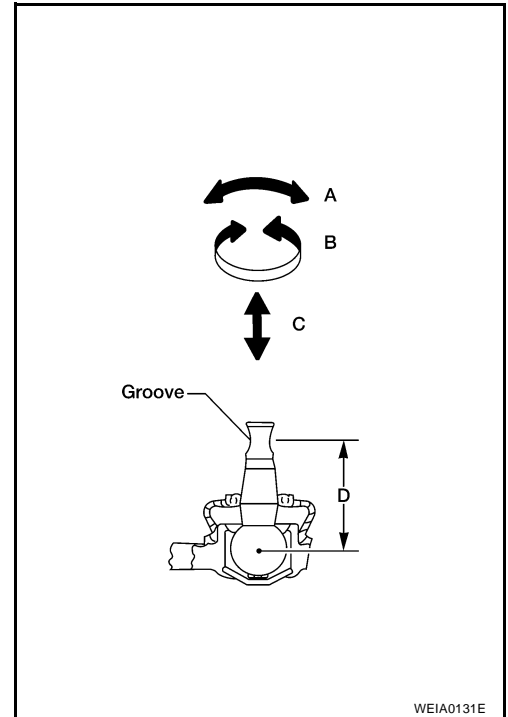
- Check the suspension arm for damage, cracks, deformation and replace if necessary.
- Check the rubber bushing for damage, cracks and deformation. Replace suspension arm assembly if necessary.
- Check the ball joint. Replace the suspension arm assembly if any of the following exists:
 - Ball stud is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

Swinging force "A" : Refer to [RSU-22, "Ball Joint"](#) .

Turning force "B" : Refer to [RSU-22, "Ball Joint"](#) .

Vertical end play "C" : Refer to [RSU-22, "Ball Joint"](#) .

Height "D" : Refer to [RSU-22, "Ball Joint"](#) .



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FRONT LOWER LINK

FRONT LOWER LINK

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Removal and Installation

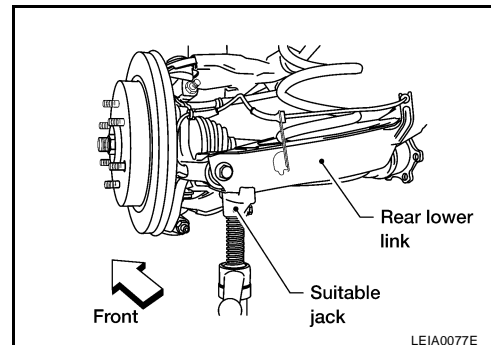
EES001AU

REMOVAL

1. Remove the wheel and tire assembly using power tool.
2. Remove the stabilizer bar. Refer to [RSU-20, "STABILIZER BAR"](#).
3. Set a suitable jack under the RH rear lower link to relieve the coil spring tension.

NOTE:

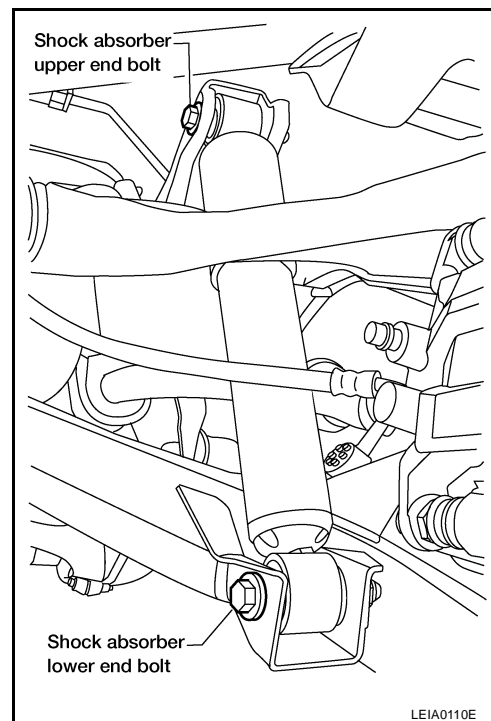
LH side shown, RH side similar.



4. Remove the RH shock absorber lower end bolt.

NOTE:

LH side shown, RH side similar.



5. Remove the adjusting bolt and nut, and the bolt and nut, from the front lower link and rear suspension member using power tool.
6. Remove the front lower link pinch bolt and nut on the knuckle side using power tool.

NOTE:

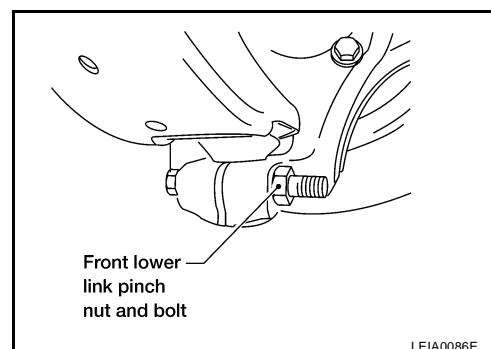
LH side shown, RH side similar.

7. Disconnect the front lower link from the knuckle using a soft hammer.

CAUTION:

Do not damage the ball joint with the soft hammer.

8. Remove the front lower link.



INSPECTION AFTER REMOVAL

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

FRONT LOWER LINK

INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-5, "Components"](#) .
- Perform the final tightening of the front lower link nuts and bolts (with rubber bushings) under unladen conditions with tires on level ground.
- Check the wheel alignment. Refer to [RSU-6, "Wheel Alignment Inspection"](#) .

Inspection

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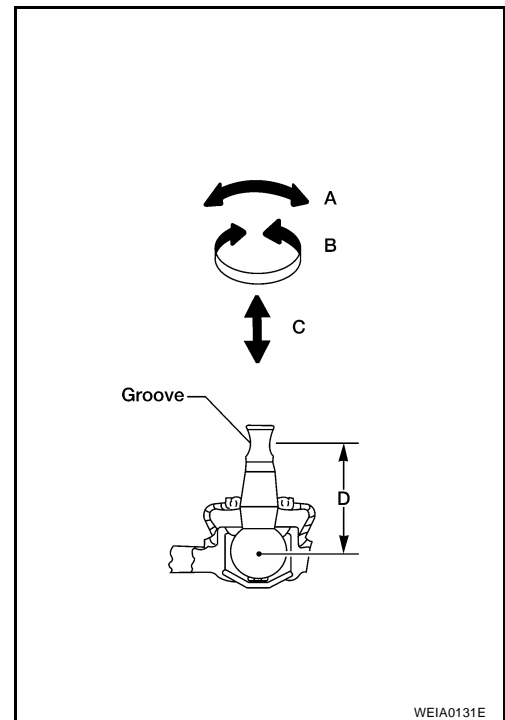
- Check suspension arm for damage, cracks, deformation and replace if necessary.
- Check rubber bushing for damage, cracks and deformation. Replace suspension arm assembly if necessary.
- Check ball joint. Replace suspension arm assembly if any of the following exists:
 - Ball stud is worn.
 - Joint 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.

Swinging force "A" : Refer to [RSU-22, "Ball Joint"](#) .

Turning force "B" : Refer to [RSU-22, "Ball Joint"](#) .

Vertical end play "C" : Refer to [RSU-22, "Ball Joint"](#) .

Height "D" : Refer to [RSU-22, "Ball Joint"](#) .



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REAR LOWER LINK & COIL SPRING

REAR LOWER LINK & COIL SPRING

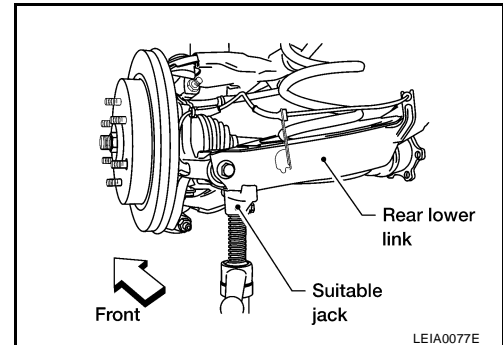
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Removal and Installation

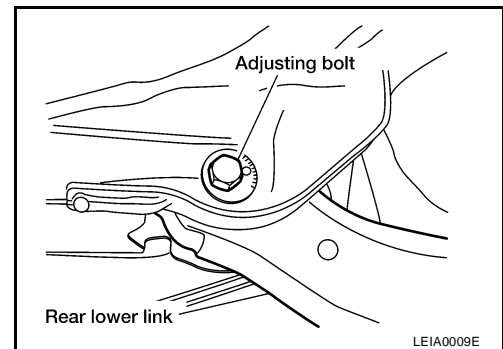
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REMOVAL

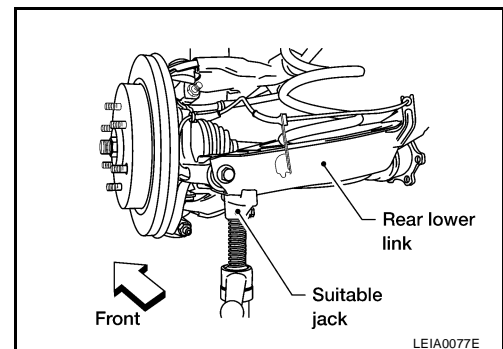
1. Remove the wheel and tire assembly using power tool. Refer to [WT-6, "Rotation"](#) .
2. If removing the LH rear lower link and coil spring, remove the spare wheel and tire assembly.
3. Set a suitable jack to relieve the coil spring tension and support the rear lower link.



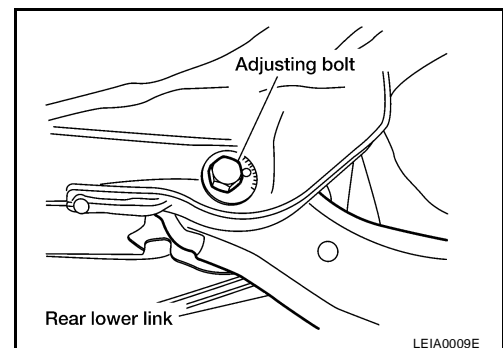
4. Loosen the rear lower link adjusting bolt and nut connected to the rear suspension member without removing the adjusting bolt and nut, using power tool.



5. Remove the rear lower link bolt and nut from the knuckle using power tool.



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



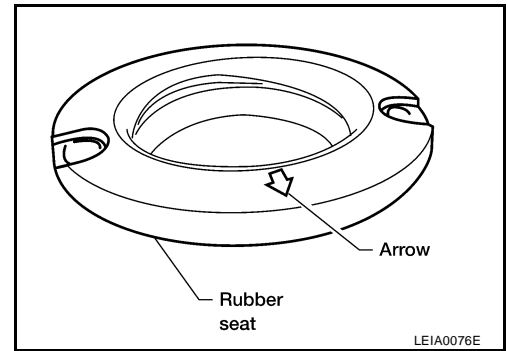
INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-5, "Components"](#) .

REAR LOWER LINK & COIL SPRING

- 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.
- Perform the final tightening of the rear lower link nuts and bolts (with rubber bushings) under unladen conditions with tires on level ground.
- Check the wheel alignment. Refer to [RSU-6, "Wheel Alignment Inspection"](#) .



EES001AX

Inspection

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

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STABILIZER BAR

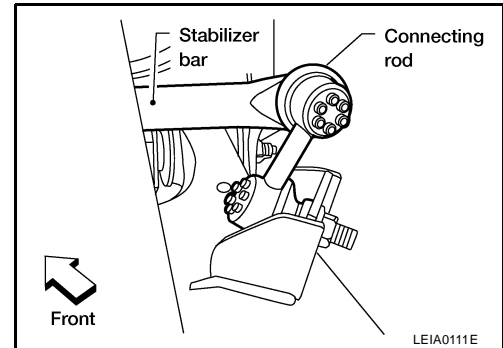
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STABILIZER BAR

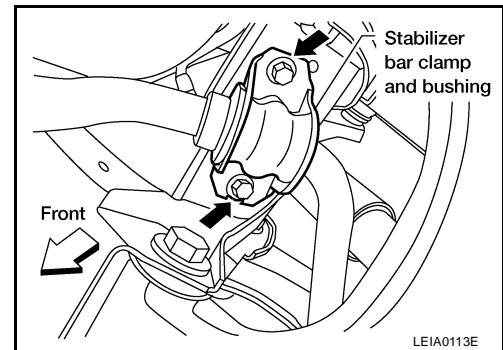
Removal and Installation

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



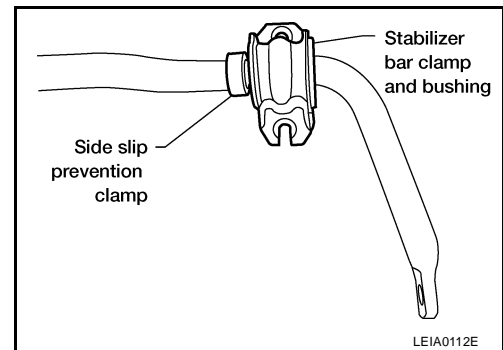
2. Remove the stabilizer bar clamps using power tool, and remove the stabilizer bar bushings.
3. Remove the stabilizer bar.



INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-5, "Components"](#) .
- Install the stabilizer bar bushings and clamps so they are positioned outside of the sideslip prevention clamp on the stabilizer bar.



Inspection

EES001AZ

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

SERVICE DATA AND SPECIFICATIONS (SDS)

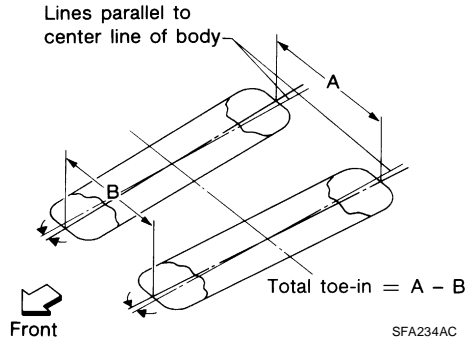
SERVICE DATA AND SPECIFICATIONS (SDS)

PF0:00030

Wheel Alignment

EES001B4

Camber Degree minute (decimal degree)	Minimum	- 0° 32' (- 0.53°)
	Nominal	- 0° 2' (- 0.03°)
	Maximum	0° 28' (0.47°)



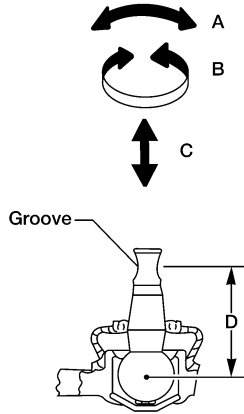
Total toe-in	Distance (A - B)	Minimum	- 1.4 mm (- 0.055 in)
		Nominal	1.9 mm (0.075 in)
		Maximum	5.2 mm (0.205 in)
		Cross toe	0 ± 2 mm (0 ± 0.079 in)
	Angle (left, right) Degree minute (decimal degree)	Minimum	- 0° 3' (-0.05°)
		Nominal	0° 4' (0.07°)
Maximum		0° 11' (0.18°)	

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

SERVICE DATA AND SPECIFICATIONS (SDS)

Ball Joint

EES001B5



WEIA0131E

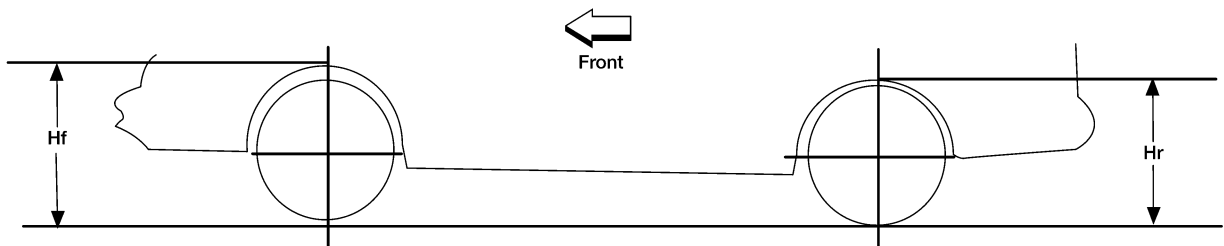
Ball joint position	Upper	Lower
Swinging force* "A"	11.4 - 145.5 N (1.16 - 14.8 kg, 2.56 - 32.7 lb)	11.0 - 140.7 N (1.12 - 14.35 kg, 2.47 - 31.63 lb)
Turning torque "B"	0.5 - 6.4 N·m (0.06 - 0.65 kg·m, 5 - 56 in-lb)	0.5 - 6.4 N·m (0.06 - 0.65 kg·m, 5 - 56 in-lb)
Vertical end play "C"	0 mm (0 in)	0 mm (0 in)
Height "D"	44 mm (1.73 in)	45.5 mm (1.79 in)

*: Measurement point is at the bolt groove of the ball stud.

Wheelarch Height (Unladen*)

EES001B6

Unit: mm (in)



LEIA0085E

Drive type	4X2				Part time 4X4			Full time 4X4
	XE	SE		LE	XE	SE	LE	
Applied model								
Tire size	245/75R16	265/70R16	265/75R16	265/65R17	245/75R16	265/70R16	265/75R16	265/65R17
Front wheelarch height (Hf)	866 (34.09)	867 (34.13)	879 (34.61)	868 (34.17)	874 (34.41)	876 (34.49)	888 (34.96)	878 (34.57)
Rear wheelarch height (Hr)	875 (34.45)	876 (34.49)	888 (34.96)	877 (34.53)	885 (34.84)	886 (34.88)	898 (35.35)	887 (34.92)

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