SECTION RSU
REAR SUSPENSION

CONTENTS

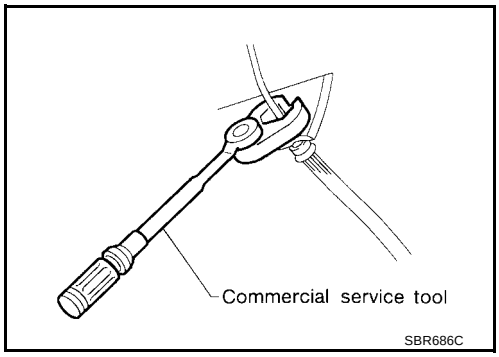
PRECAUTIONS

PFP:00001

Precautions

EES000O9

- **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.



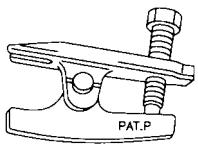
PREPARATION

PFP:00002

Special Service Tools

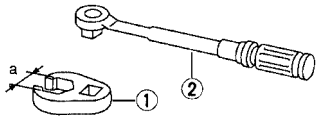
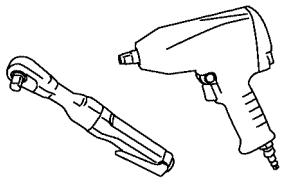
EES0016T

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

Commercial Service Tools

EES000OA

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

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

PFP:00003

NVH Troubleshooting Chart

EES000OB

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-3, "NVH Troubleshooting Chart"	WT-3, "NVH Troubleshooting Chart"	BR-5, "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		×	×	×	×	×	×			×	×	×	×	×	×
	Shake		×	×	×	×		×			×	×	×	×	×	×
	Vibration		×	×	×	×	×				×	×	×			×
	Shimmy		×	×	×	×			×			×	×	×	×	×
	Shudder		×	×	×							×	×	×	×	×
	Poor quality ride or handling		×	×	×	×	×		×	×		×	×	×		

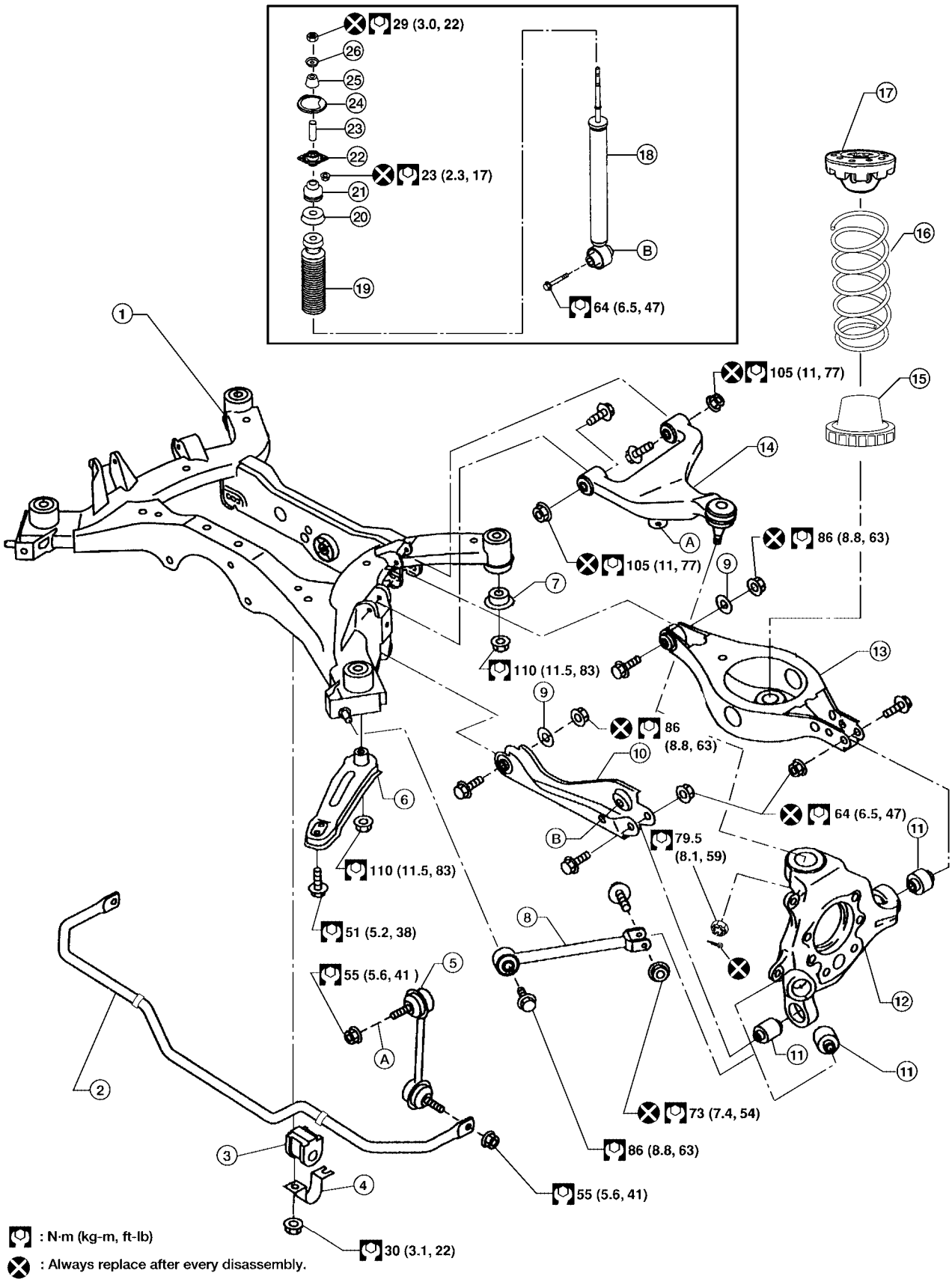
×: Applicable

REAR SUSPENSION ASSEMBLY

PFP:55020

Components

EES000OC



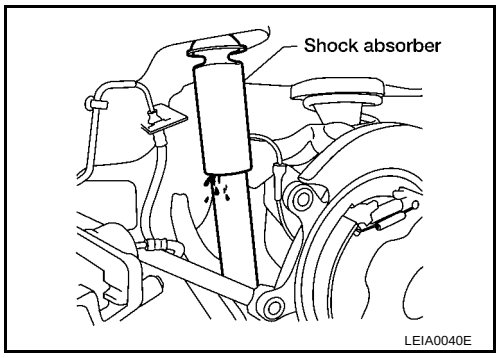
WEIA0110E

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
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

EES000OD

- 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, "Components" .
- 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

EES000OE

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

PRELIMINARY INSPECTION

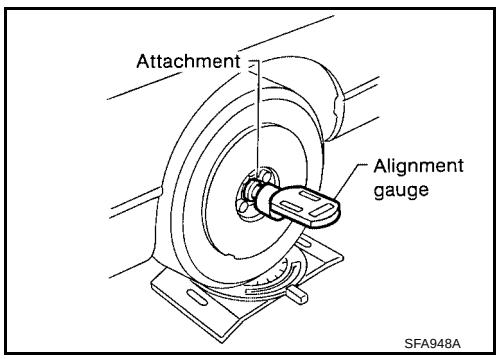
- Check tires for wear and for improper inflation.
- Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout. Refer to WT-4, "Inspection" .
- Check rear wheel bearings for looseness.
- Check rear suspension for looseness.
- Check that rear shock absorber works properly.
- Check wheelarch height (unladen*). Refer to RSU-19, "Wheelarch Height (Unladen*)" .

CAMBER

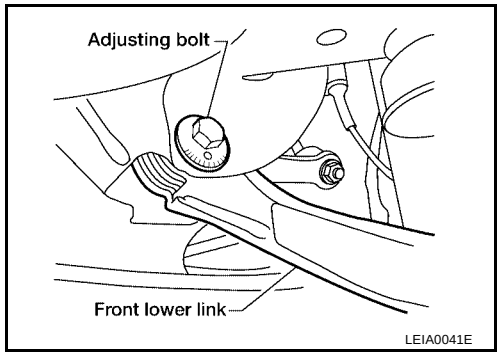
- Measure camber of both right and left wheels with a suitable alignment gauge and adjust in accordance with the following procedures.

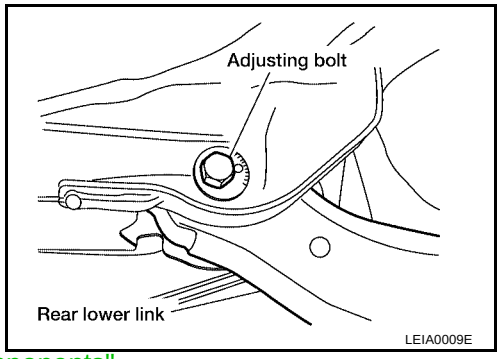
Camber : Refer to RSU-18, "Rear Wheel Alignment (Unladen*)" .

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



1. Turn the adjusting bolts in the same direction to calibrate.
   NOTE:
   Camber changes about 5' minutes with each graduation of the adjusting bolt.





2. Tighten adjusting bolt nuts to specification. Refer to RSU-5, "Components" .

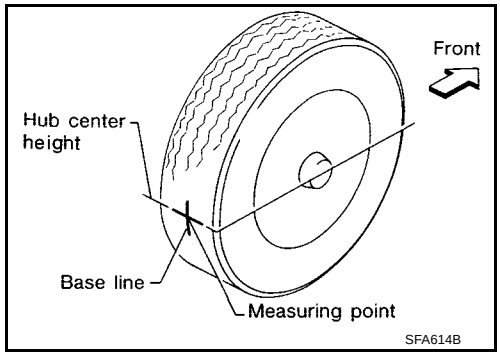
TOE-IN

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

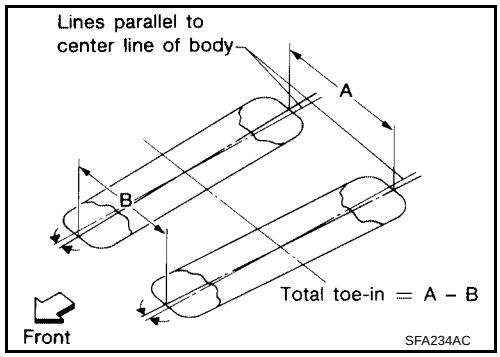
WARNING:

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

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.

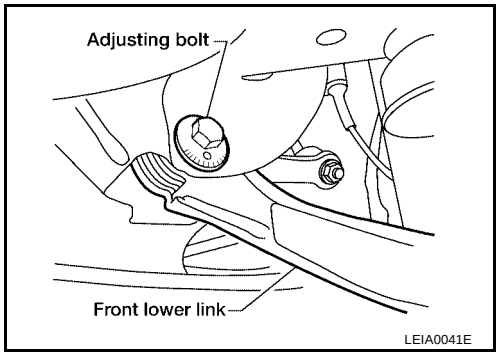


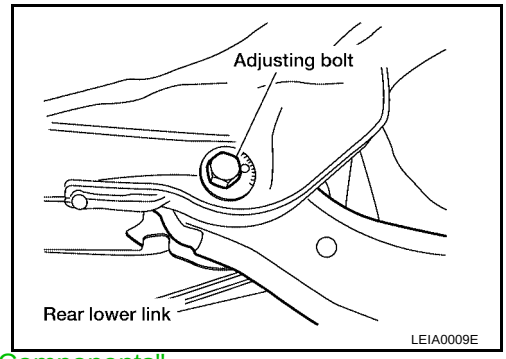
4. Measure distance “A” (rear side).
5. Push the vehicle slowly ahead to rotate the wheels 180° degrees (1/2 turn).
   If the wheels have rotated more than 180° degrees (1/2 turn), try the above procedure again from the beginning. Never push vehicle backward.
6. Measure distance “B” (front side).



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

7. 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.





8. Tighten the adjusting bolt nuts to specification. Refer to RSU-5, "Components" .

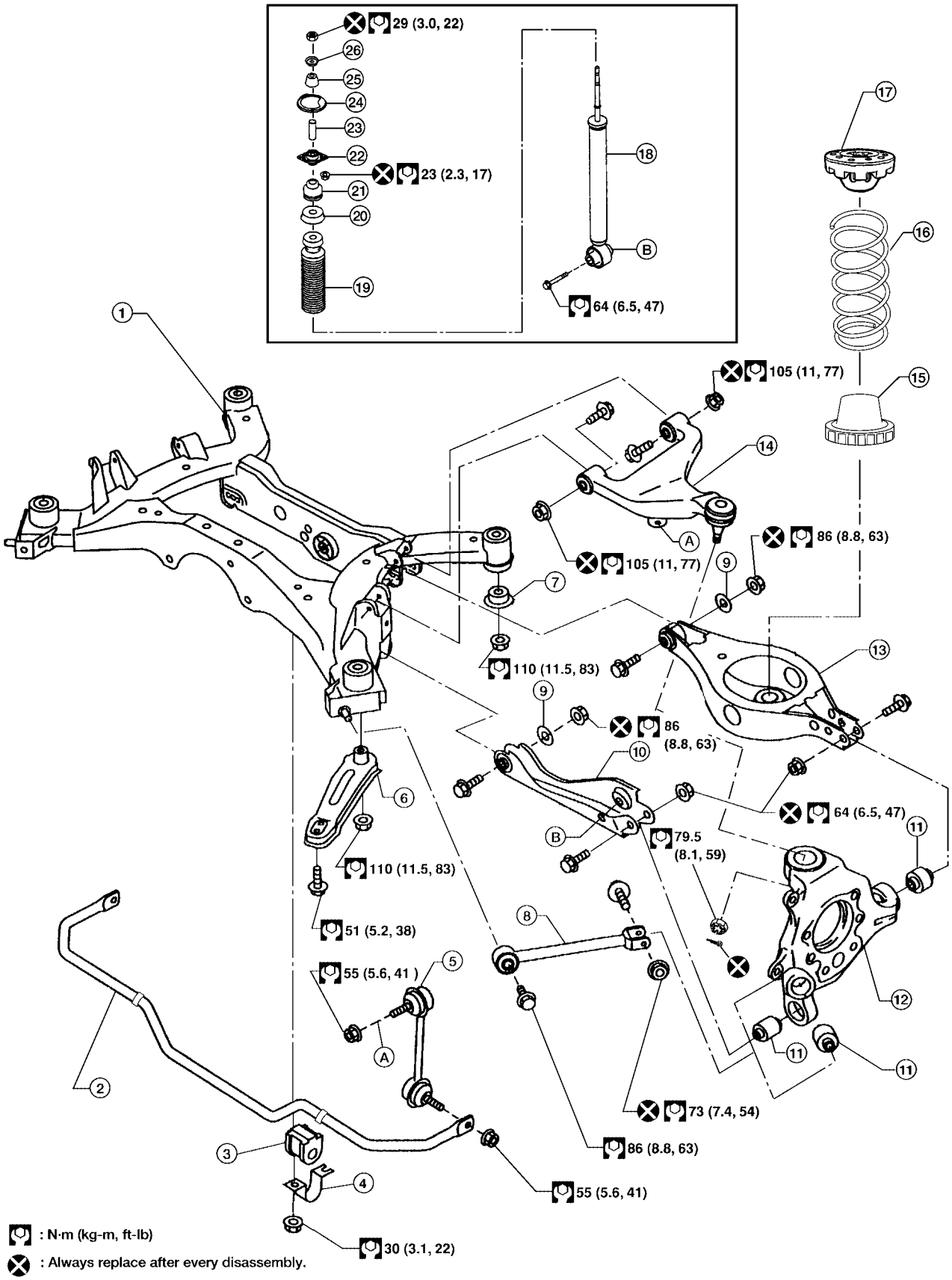
REAR SUSPENSION MEMBER

PFP:55501

Removal and Installation

EES000S3

Rear Suspension Assembly



WEIA0110E

1. Rear suspension member
2. Stabilizer bar
3. Stabilizer bar bushing
4. Stabilizer bar clamp
5. Connecting rod
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8. Radius rod
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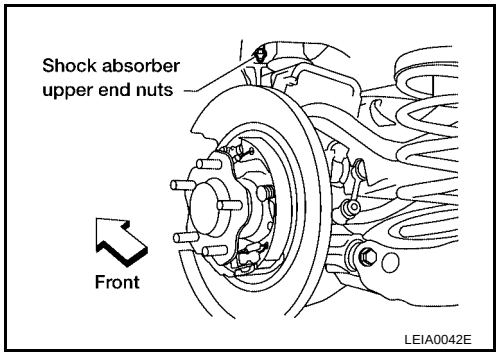
13. Rear lower link
14. Suspension arm
15. Lower rubber seat
16. Coil spring
17. Upper rubber seat
18. Shock absorber
19. Bound bumper cover
20. Bound bumper
21. Lower bushing
22. Upper bracket
23. Upper bracket sleeve
24. Gasket
25. Upper bushing
26. Washer

REMOVAL

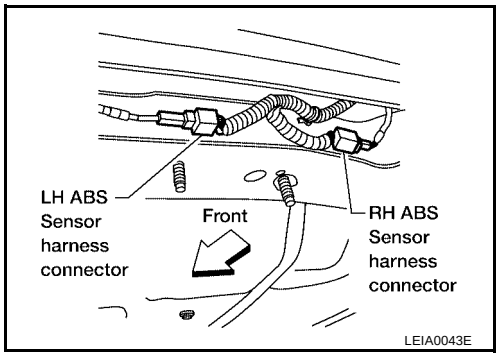
CAUTION:

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-3, "Removal and Installation" .
2. Disconnect the parking brake cable assemblies from the front cable. Refer to PB-3, "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 to 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 mounting 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

PFP:56210

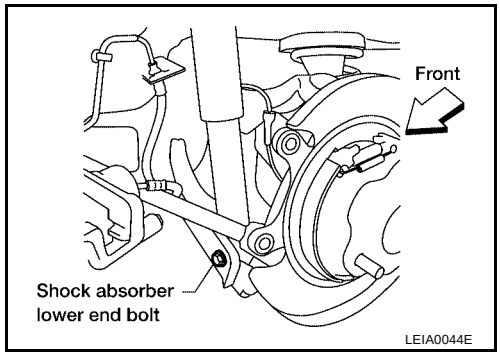
Removal and Installation

EES000S4

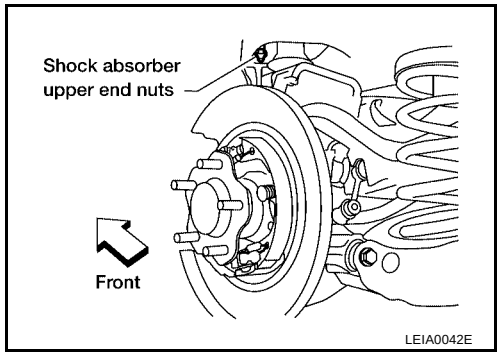
REMOVAL

1. Remove the wheel and tire assembly using power tool. Refer to WT-5, "ROAD WHEEL TIRE ASSEMBLY" .
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.



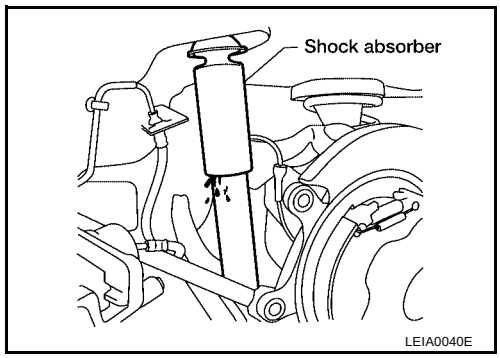
INSTALLATION

Installation is in the reverse order of removal. Refer to RSU-5, "Components" .

Inspection

EES000S5

- 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.



SUSPENSION ARM

PFP:55501

Removal and Installation

EES000S6

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

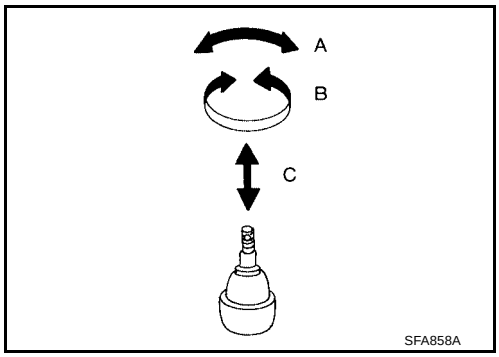
Installation is in the reverse order of removal. Refer to RSU-5, "Components" .

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

Inspection

EES000S7

- 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-18, "Ball Joint" .

Turning force “B” : Refer to RSU-18, "Ball Joint" .

Vertical end play “C” : Refer to RSU-18, "Ball Joint" .

RADIUS ROD

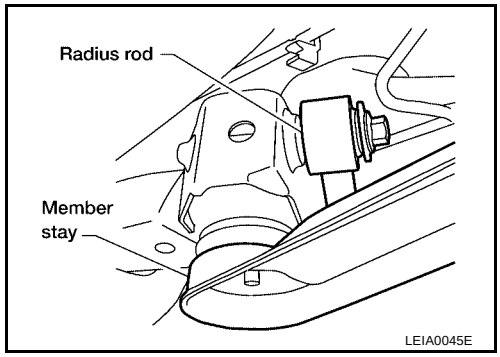
PFP:55110

Removal and Installation

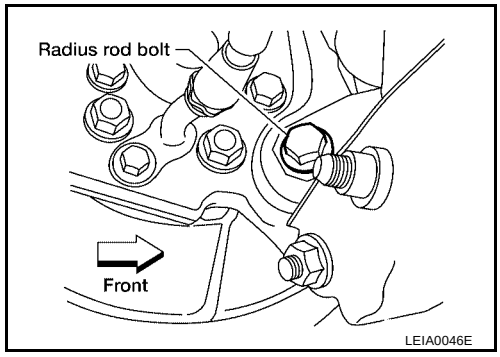
EES000S8

REMOVAL

1. Remove the wheel and tire assembly using power tool. Refer to WT-5, "ROAD WHEEL TIRE ASSEMBLY" .
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, "Components" .

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

Inspection

EES000S9

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

FRONT LOWER LINK

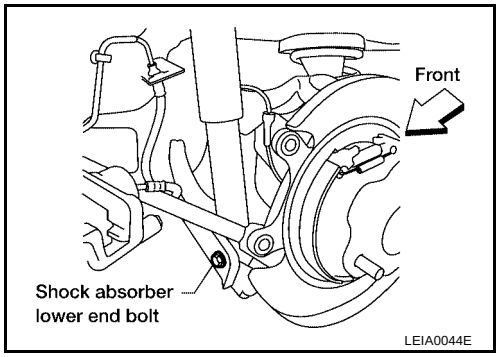
PFP:55110

Removal and Installation

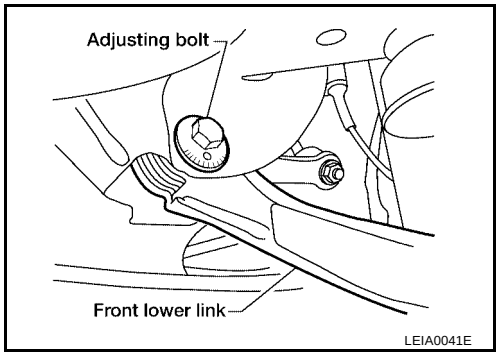
EES000SA

REMOVAL

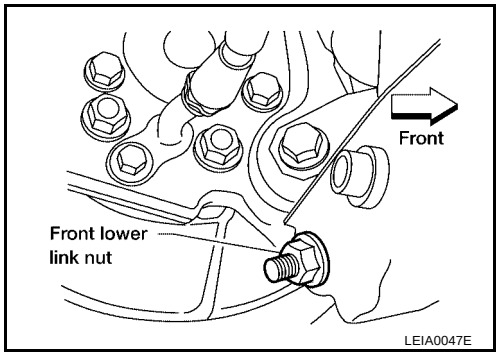
1. Remove the wheel and tire assembly using power tool. Refer to WT-5, "ROAD WHEEL TIRE ASSEMBLY" .
2. Set a transmission jack or suitable tool, to relieve the coil spring tension and support the front lower link.
3. Disconnect the shock absorber lower end bolt using power tool.



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, "Components" .

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

Inspection

EES000SB

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

REAR LOWER LINK AND COIL SPRING

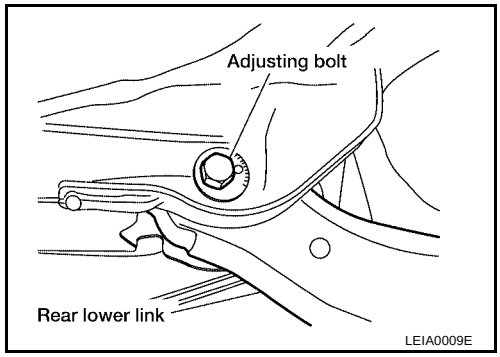
PFP:551B0

Removal and Installation

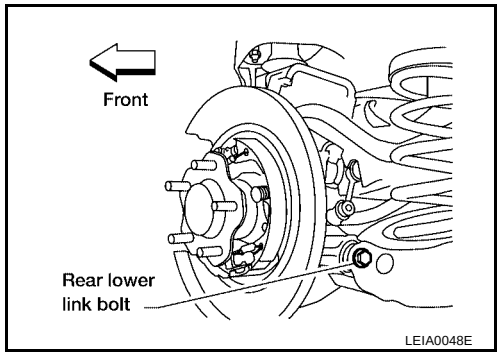
EES000SC

REMOVAL

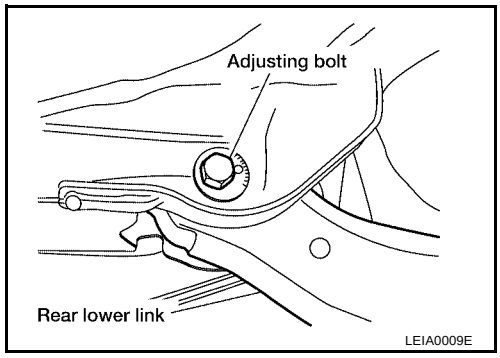
1. Remove the wheel and tire assembly using power tool. Refer to WT-5, "ROAD WHEEL TIRE ASSEMBLY" .
2. Set a transmission jack or suitable tool, to relieve the coil spring tension and support the rear lower link.
3. Loosen the rear lower link adjusting bolt and nut connected to the rear suspension member, using power tool.



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



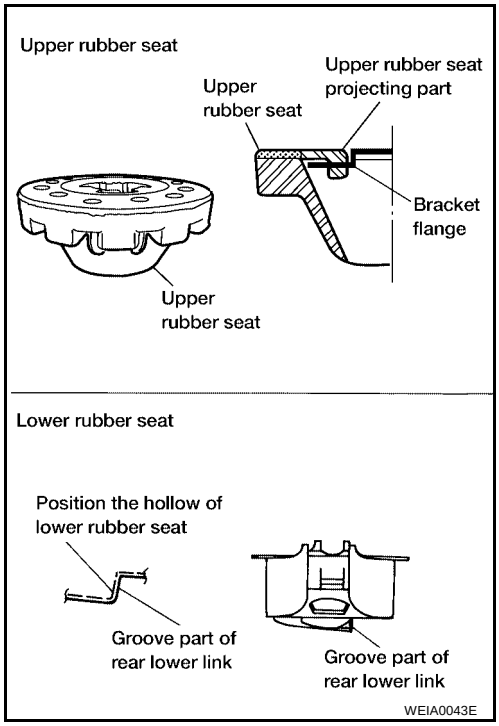
5. Slowly lower the transmission jack to release the coil spring tension. Then remove upper rubber seat, coil spring and lower rubber seat from the rear lower link.
6. Remove the rear lower link adjusting bolt and nut from the rear suspension member using power tool, then remove the rear lower link.



INSTALLATION

Installation is in the reverse order of removal. Refer to RSU-5, "Components" .

- 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

EES000SD

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

STABILIZER BAR

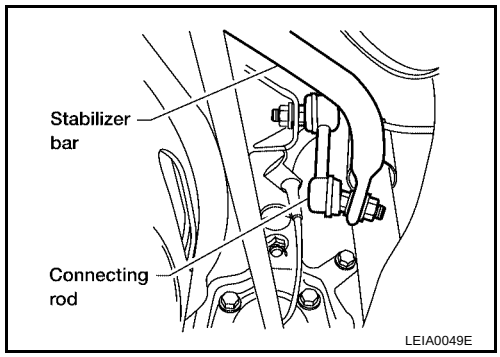
PFP:54611

Removal and Installation

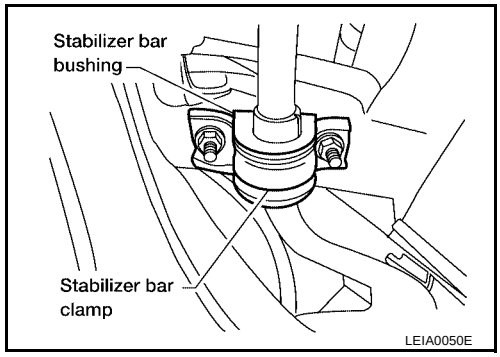
EES000SE

REMOVAL

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



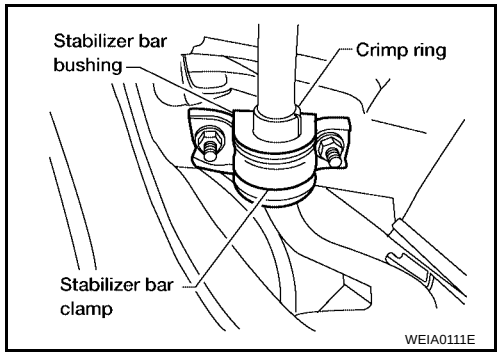
2. Remove the stabilizer bar clamps using power tool, and remove the stabilizer bar bushings.
3. Remove the stabilizer bar.



INSTALLATION

Installation is in the reverse order of removal. Refer to RSU-5, "Components" .

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



Inspection

EES000SF

- 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)

PFP:00030

General Specifications (Rear)

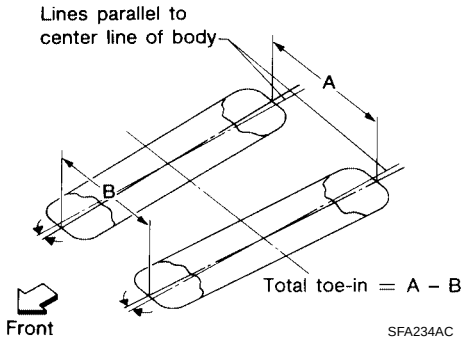
EES000OH

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

Rear Wheel Alignment (Unladen*)

EES000OI

Camber Degree minute (Decimal degree)	Minimum	–1°3' (–1.05°)
	Nominal	–0°33′ (–0.55°)
	Maximum	-0°3′ (-0.05°)

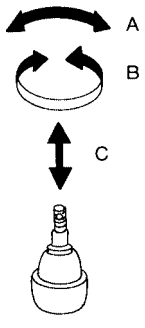


Total toe-in	Distance (“A” – “B”) mm (in)	Minimum	1.6 (0.063)
		Nominal	3.2 (0.126)
		Maximum	4.8 (0.189)
	Difference between LH, RH	Minimum	-0.2 (-0.008)
		Nominal	0 (0)
		Maximum	0.2 (0.008)
	Angle (left plus right) Degree minute (Decimal degree)	Minimum	0° 5′ (0.06°)
		Nominal	0° 8′ (0.13°)
		Maximum	0° 12′ (0.20°)

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

Ball Joint

EES000OJ

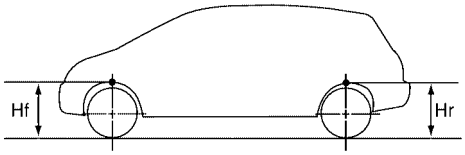


Swinging force “A” (measuring point: cotter pin hole of ball stud)	7.8 - 54.9 N (0.8 - 5.6 kg-f, 1.8 - 12.3 lb-f)
Turning torque “B”	0.49 - 3.43 N·m (5.0 - 35.0 kg-cm, 4.3 - 30.4 in-lb)
Vertical end play “C”	0 mm (0 in)

Wheelarch Height (Unladen*)

EES000OK

Unit: mm (in)



WEIA0030E

Tire	P225/65R16	P225/60R17
Front (Hf)	740 (29.13)	740 (29.13)
Rear (Hr)	749 (29.49)	749 (29.49)

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