

SECTION **RSU**
 REAR SUSPENSION

A
 B
 C
 D

RSU

CONTENTS

PRECAUTIONS	2	SUSPENSION ARM	10	F
Precautions	2	Removal and Installation	10	
PREPARATION	3	REMOVAL	10	G
Special Service Tools	3	INSPECTION AFTER REMOVAL	10	
Commercial Service Tools	3	INSTALLATION	11	H
NOISE, VIBRATION AND HARSHNESS (NVH)		RADIUS ROD	12	
TROUBLESHOOTING	4	Removal and Installation	12	I
NVH Troubleshooting Chart	4	REMOVAL	12	J
REAR SUSPENSION ASSEMBLY	5	INSPECTION AFTER REMOVAL	12	
Components	5	INSTALLATION	12	K
On-Vehicle Inspection and Service	6	FRONT LOWER LINK	13	
Wheel Alignment Inspection	6	Removal and Installation	13	L
DESCRIPTION	6	REMOVAL	13	M
PRELIMINARY INSPECTION	6	INSPECTION AFTER REMOVAL	13	
CAMBER INSPECTION	6	INSTALLATION	13	
TOE-IN	7	REAR LOWER LINK & COIL SPRING	14	
Removal and Installation	8	Removal and Installation	14	
REMOVAL	8	REMOVAL	14	
INSTALLATION	8	INSPECTION AFTER REMOVAL	14	
SHOCK ABSORBER	9	INSTALLATION	14	
Removal and Installation	9	STABILIZER BAR	15	
REMOVAL	9	Removal and Installation	15	
INSTALLATION	9	REMOVAL	15	
Disassembly and Assembly	9	INSPECTION AFTER REMOVAL	15	
DISASSEMBLY	9	INSTALLATION	15	
INSPECTION AFTER DISASSEMBLY	9	SERVICE DATA	16	
ASSEMBLY	9	Wheel Alignment (Unladen)	16	
		Ball Joint	16	
		Wheelarch Height (Unladen*)	16	

PRECAUTIONS

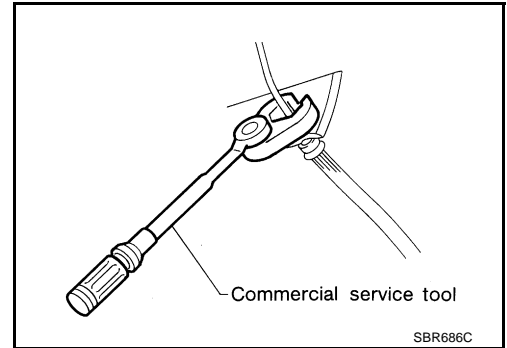
PRECAUTIONS

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Precautions

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- When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground. Oil will shorten the life of rubber bushes. Be sure to wipe off any spilled oil.
* Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
- After installing removed suspension parts, check wheel alignment and adjust if necessary.
- Lock nuts are un reusable parts; always use new ones. When replacing, do not wipe oil off new lock nut before tightening.
- Use flare nut wrench when removing or installing brake lines.
- Always torque brake lines when installing.



PREPARATION

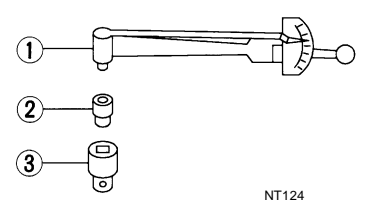
PREPARATION

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Special Service Tools

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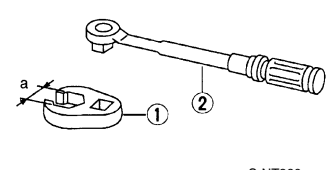
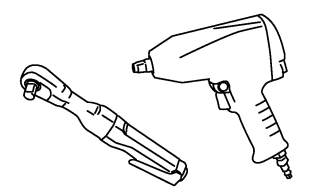
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
ST3127S000 (See J25742-1) Preload Gauge 1. GG91030000 Torque wrench (J25765) 2. HT62940000 (—) Socket adapter (1/2") 3. HT62900000 (—) Socket adapter (3/8")	 <p>Measurement ball joint of sliding torque</p>

A
B
C
D
RSU

Commercial Service Tools

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Tool name	Description
1. Flare nut crowfoot a: 10 mm (0.39 in) 2. Torque wrench	 <p>Removing and installing each brake piping</p>
Power tool	 <ul style="list-style-type: none"> ● Removing wheel nuts ● Removing stabilizer assembly ● Removing suspension links

F
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H
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J
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L
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NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

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NVH Troubleshooting Chart

AES0000E

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

		Reference page	Possible cause and SUSPECTED PARTS																
Symptom	REAR SUSPENSION	Noise	Refer to RSU-5 .	Refer to RSU-9 .	—	—	—	Refer to RSU-5 .	Refer to RSU-6 .	Refer to RSU-15 .	NVH in PR section.	NVH in RFD section.	NVH in FAX and FSU sections.	NVH in WT section.	NVH in WT section.	NVH in RAX section.	NVH in BR section.	NVH in PS section.	
		Shake	Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mounting deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	Stabilizer bar fatigue	PROPELLER SHAFT	DIFFERENTIAL	FRONT AXLE AND FRONT SUSPENSION	TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKES	STEERING	
		Vibration	×	×	×	×	×	×			×	×	×	×	×	×	×	×	×
		Shimmy	×	×	×	×			×				×	×	×		×	×	×
		Judder	×	×	×								×	×	×		×	×	×
		Poor quality ride or handling	×	×	×	×	×		×	×			×	×	×				

×: Applicable

REAR SUSPENSION ASSEMBLY

REAR SUSPENSION ASSEMBLY

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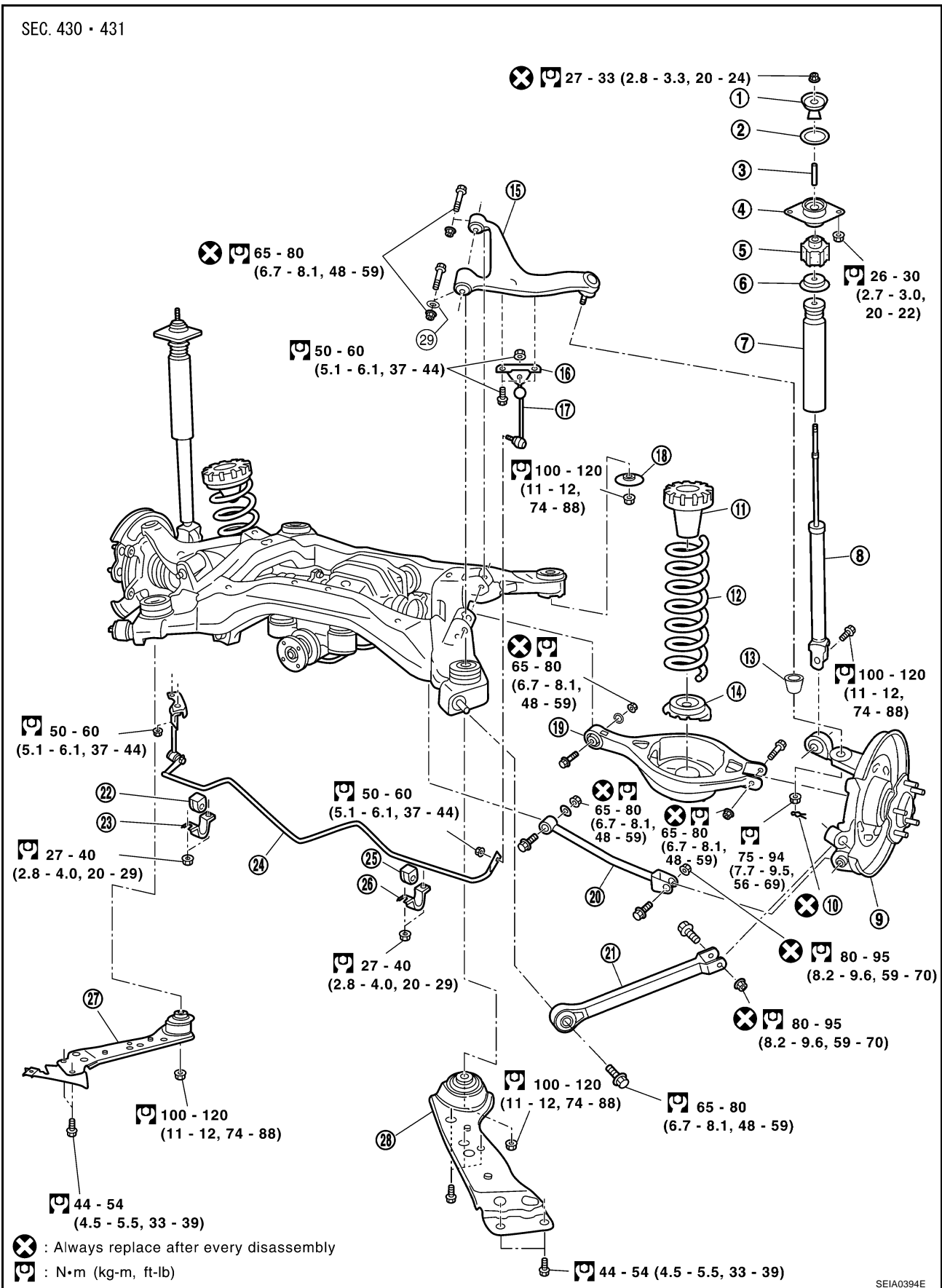
Components

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REAR SUSPENSION ASSEMBLY

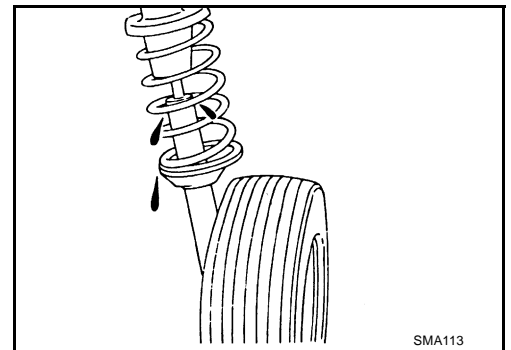
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|--------------------------------------|---------------------------------|-----------------------|
| 1. Washer | 2. Shock absorber mounting seal | 3. Distance tube |
| 4. Shock absorber mounting insulator | 5. Bushing | 6. Bound bumper cover |
| 7. Bound bumper | 8. Shock absorber | 9. Axle assembly |
| 10. Cotter pin | 11. Upper seat | 12. Coil spring |
| 13. Ball seat | 14. Rubber seat | 15. Suspension arm |
| 16. Connecting rod mounting bracket | 17. Connecting rod | 18. Mount stopper |
| 19. Rear lower link | 20. Front lower link | 21. Radius rod |
| 22. Bushing | 23. Clamp | 24. Stabilizer bar |
| 25. Bushing | 26. Clamp | 27. Member stay |
| 28. Member stay | 29. Stopper rubber | |

On-Vehicle Inspection and Service

AES0000G

Check axle and suspension parts for excessive play, wear and damage.

- Move rear wheels (RH/LH) to check abnormal free play.
- Retighten all nuts and bolts to the specified torque.
- Check shock absorber for oil leakage or other damage.



Wheel Alignment Inspection DESCRIPTION

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- Measure wheel alignment under unladen conditions. "Unladen conditions" means that fuel, coolant, and lubricant are full. Spare tire, jack, hand tools and mats in designated positions.

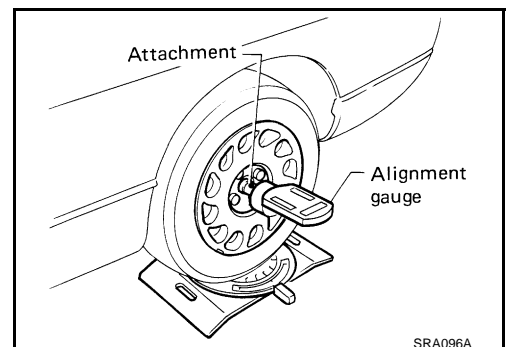
PRELIMINARY INSPECTION

1. Check tires for improper air pressure and wear.
2. Check road wheels for runout.
3. Check wheel bearing axial end play.
4. Check ball joint axial end play of suspension arm.
5. Check shock absorber operation.
6. Check each mounting point of axle and suspension for looseness and deformation.
7. Check each link and arm for cracks, deformation, and other damage.
8. Check vehicle posture.

CAMBER INSPECTION

- 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-16, "SERVICE DATA"](#)

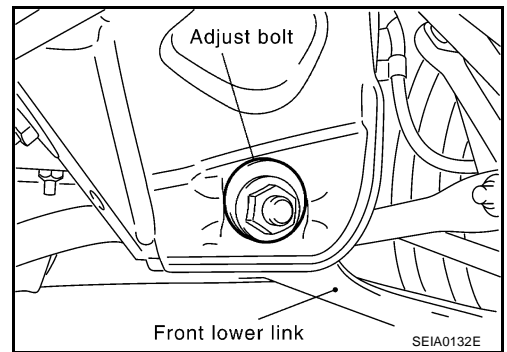


REAR SUSPENSION ASSEMBLY

If camber is not within specification, adjust by turning adjusting bolt.

1. Turn adjusting bolt to calibrate.
Camber changes about 5' with each graduation of adjusting bolt.
2. Tighten to the specified torque.

 : 65 - 80 N·m (6.7 - 8.1 kg·m, 48 - 59 ft·lb)



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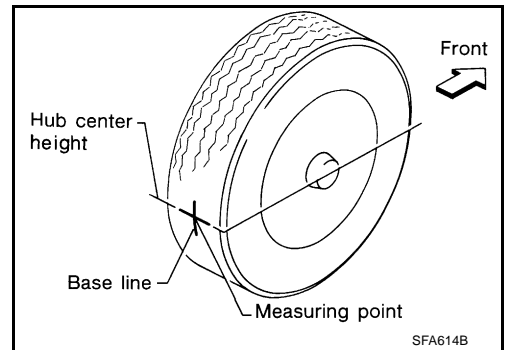
TOE-IN

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

WARNING:

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

1. Bounce rear of vehicle up and down to stabilize the posture.
2. Push 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).



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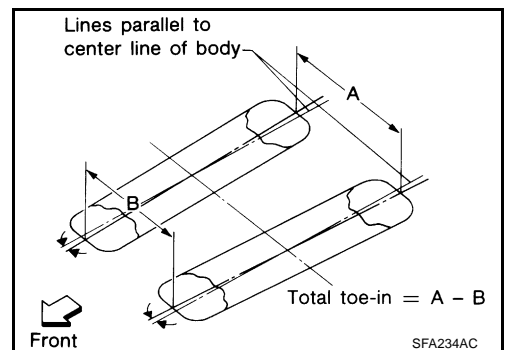
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5. Push vehicle slowly ahead to rotate wheels 180 degrees (1/2 turn).

If 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-16, "SERVICE DATA"](#) .



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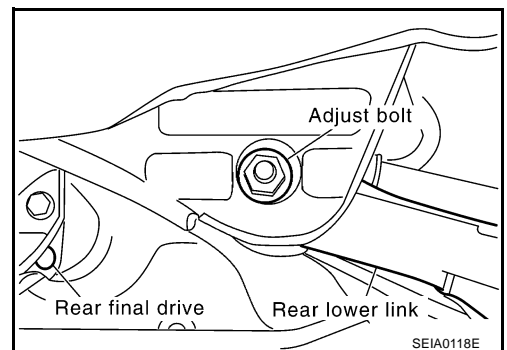
7. Adjust toe-in by turning adjusting bolts.
Toe changes about 1.5 mm (0.059 in) [One side] with each graduation of adjusting bolt.

CAUTION:

Be sure to adjust equally on RH and LH side with adjusting bolt.

8. Tighten to the specified torque.

 : 65 - 80 N·m (6.7 - 8.1 kg·m, 48 - 59 ft·lb)



M

REAR SUSPENSION ASSEMBLY

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Removal and Installation

REMOVAL

1. Remove fitting nut in upper side of shock absorber.
2. Remove tires with power tool. Remove brake caliper with power tool and hung it aside.

CAUTION:

Avoid depressing brake pedal with brake caliper removed.

3. Remove parking brake cable from axle housing and suspension member.
4. Remove ABS wheel sensor from rear final drive.
5. Remove mounting bolts of member stay.
6. Remove exhaust tube and propeller shaft.
7. Remove air breather hose of rear final drive from vehicle side.
8. Set transmission jack under rear final drive.
9. Remove rear suspension member mounting bolts.
10. Transmission jack slowly to remove rear suspension member from vehicle.

CAUTION:

Lower mission jack while in order to do not drop coil spring.

INSTALLATION

- Refer to [RSU-5, "Components"](#) for tightening torque. Install in the reverse order of removal.

CAUTION:

Refer to component parts location and do not reuse non-reusable parts.

- After installation, perform final tightening of each part under unladen conditions with tires on ground.
- After installing suspension assembly, check wheel alignment and adjust if necessary.

SHOCK ABSORBER

SHOCK ABSORBER

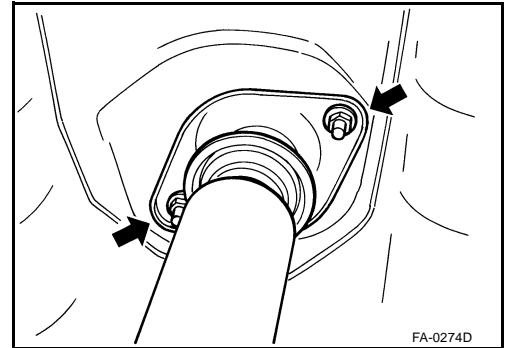
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Removal and Installation

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REMOVAL

1. Remove tire with power tool.
2. Set transmission jack on rear axle assembly to remove fitting bolt and nut in lower side of shock absorber.
3. Remove transmission jack from rear axle assembly.
4. Remove rear seat cushion, rear seat back and rear parcel shelf finisher.
5. Remove fitting nut in upper side of shock absorber.



INSTALLATION

- Refer to [RSU-5, "Components"](#) for tightening torque. Install in the reverse order of removal.

CAUTION:

Refer to component parts location and do not reuse non-reusable parts.

- After installation, perform final tightening of each part under unladen conditions with tires on ground.
- After installing shock absorber, check wheel alignment and adjust if necessary.

Disassembly and Assembly

DISASSEMBLY

AES0002N

1. Remove shock absorber mounting seal from shock absorber mounting insulator.
2. Wrap a shop cloth around lower side of shock absorber.
3. Set shock absorber in a vise.
4. Secure piston rod tip so that piston rod does not turn, and remove piston rod lock nut.
5. Remove washer, bushing, distance tube, shock absorber mounting insulator, bushing, bound bumper cover and bound bumper from shock absorber.

INSPECTION AFTER DISASSEMBLY

Shock Absorber

- Check piston rod for cracks, deformation or other damage. Replace if necessary.

ASSEMBLY

- Refer to [RSU-5, "Components"](#) for tightening torque. Install in the reverse order of removal.

CAUTION:

- **Piston rod lock nut is not reusable. Always use a new one when installing.**
- **Be sure to install distance tube is securely.**

SUSPENSION ARM

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AES0001T

SUSPENSION ARM

Removal and Installation

REMOVAL

1. Remove tire with power tool.
2. Remove drive shaft. Refer to [RAX-9, "REAR DRIVE SHAFT"](#).
3. Remove connecting rod mounting bracket from suspension arm with power tool.
4. Remove fixing bolts and nuts in suspension member side of suspension arm.
5. Remove cotter pin and lock nut.
6. Remove suspension arm from axle housing using puller.

CAUTION:

- Do not damage ball joint with puller.
- While using puller, temporarily tighten nut so as not to damage screw part.

INSPECTION AFTER REMOVAL

- Check suspension arm and bushing for deformation, cracks, or damage. If any non-standard condition is found, replace it.
- Check boot of ball joint for cracks or other damage, and also for grease leakage.

Ball Joint

CAUTION:

Before measurement, move ball joint by hand ten times or more to check for smooth operation of ball joint.

Oscillating Torque Inspection

- Hook spring scale onto cotter pin mounting hole. Check that spring scale value when ball stud begins moving is within the specified range.

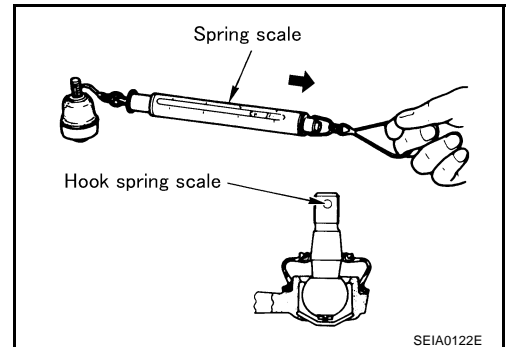
Oscillating torque:

0.50 - 3.40 N·m (0.06 - 0.34 kg·m, 5 - 30 in-lb)

Measured value of spring scale:

8.06 - 54.8 N (0.82 - 5.59 kg, 1.81 - 12.32 lb)

- If it is outside the specified range, replace suspension arm.



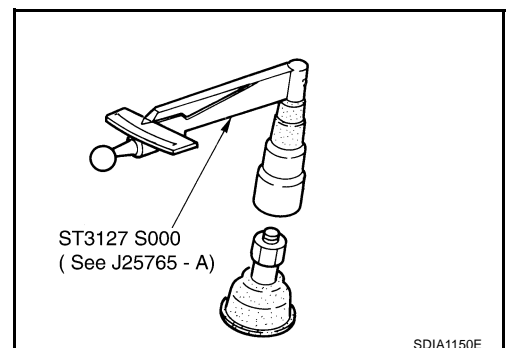
Sliding Torque Inspection

- Install mounting nut to ball stud. Using a preload gauge (special service tool), check the sliding torque is within the specified range.

Sliding torque:

0.50 - 3.40 N·m (0.06 - 0.34 kg·m, 5 - 30 in-lb)

- If it is outside the specified range, replace suspension arm.



Axial End Play

- Push ball joint tip in the axial direction to check free play.

Axial end play : 0 mm (0 in)

- If there is free play, replace suspension arm.

SUSPENSION ARM

INSTALLATION

- Refer to [RSU-5, "Components"](#) for each tightening torque, etc. Install in the reverse order of removal.

CAUTION:

Refer to component parts location and do not reuse non-reusable parts.

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

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RADIUS ROD

RADIUS ROD

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Removal and Installation

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REMOVAL

1. Remove tire with power tool.
2. Remove brake caliper with power tool. Hang it in a place where it will not interfere with work. Refer to [BR-27, "REAR DISC BRAKE"](#).

CAUTION:

Avoid depressing brake pedal while brake caliper is removed.

3. Remove fixing bolt and nut in axle side of radius rod with power tool.
4. Remove rear lower link and coil spring. Refer to [RSU-14, "REAR LOWER LINK & COIL SPRING"](#).
5. Remove fixing bolt in lower side of shock absorber with power tool.
6. Remove fixing bolt and nut in axle side of front lower link with power tool.
7. Remove fixing bolt in rear suspension member side of radius rod with power tool, then remove radius rod from vehicle.

INSPECTION AFTER REMOVAL

- Check radius rod for any deformation, crack, or damage. Replace if necessary.

INSTALLATION

- Refer to [RSU-5, "Components"](#) for each tightening torque, etc. Install in the reverse order of removal.

CAUTION:

Refer to component parts location and do not reuse non-reusable parts.

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

FRONT LOWER LINK

FRONT LOWER LINK

PFP:55110

Removal and Installation

AES0001V

REMOVAL

- Remove tire with power tool. Set transmission jack on rear lower link.
- Remove front lower link mounting bolts and nuts with power tool and remove front lower link from vehicle.

INSPECTION AFTER REMOVAL

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

INSTALLATION

- Refer to [RSU-5, "Components"](#) for tightening torque, etc. Install in the reverse order of removal.

CAUTION:

Refer to component parts location and do not reuse non-reusable parts.

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

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REAR LOWER LINK & COIL SPRING

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REAR LOWER LINK & COIL SPRING

Removal and Installation

REMOVAL

1. Remove tire with power tool. Set jack on rear lower link.
2. Loosen fixing bolt and nut of rear lower link in side of suspension member.
3. Remove fixing bolt and nut in side of axle housing.
4. Slowly lower jack, then remove upper rubber seat, coil spring and rubber sheet from rear lower link.
5. Remove fixing bolt and nut in side of suspension member to remove rear lower link with power tool.

INSPECTION AFTER REMOVAL

- Check rear lower link and coil spring for any deformation, crack or damage. Replace if necessary.

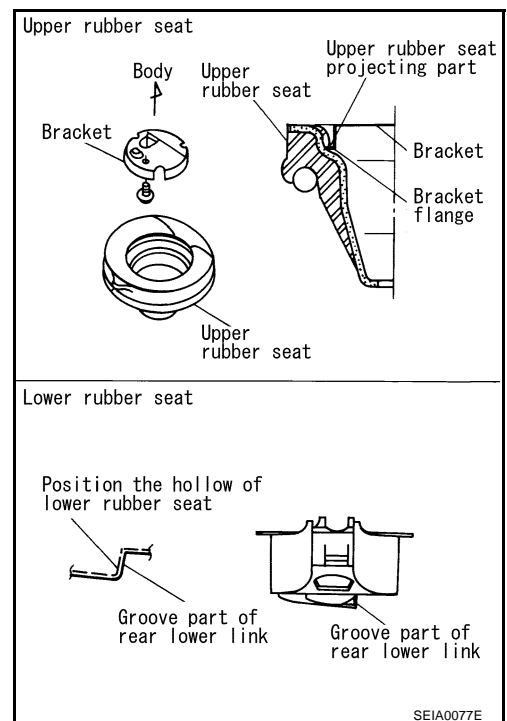
INSTALLATION

- Refer to [RSU-5, "Components"](#) for tightening torque. Install in the reverse order of removal.

CAUTION:

Refer to component parts location and do not reuse non-reusable parts.

- Check that the projecting part inside upper seat and the flange part of bracket attached as shown in the figure.
- Check that the projection part outside upper seat directs to vehicle front.
- Position the hollow of rubber seat with the groove part of rear lower link to install.
- Install coil spring with the side of 2 paint markers directing to lower side.



- After installing rear lower link and coil spring, check wheel alignment and adjust if necessary. Refer to [RSU-6, "Wheel Alignment Inspection"](#).

STABILIZER BAR

STABILIZER BAR

PFP:56230

Removal and Installation

AES0001X

REMOVAL

1. Remove dynamic dampener of exhaust tube.
2. Remove stabilizer from connecting rod with power tool.
3. Remove mounting bolts of clamp and then remove clamp and bushing from stabilizer bar.
4. Remove stabilizer bar from vehicle behind.

INSPECTION AFTER REMOVAL

- Check stabilizer bar for any deformation, crack or damage. Replace if necessary.

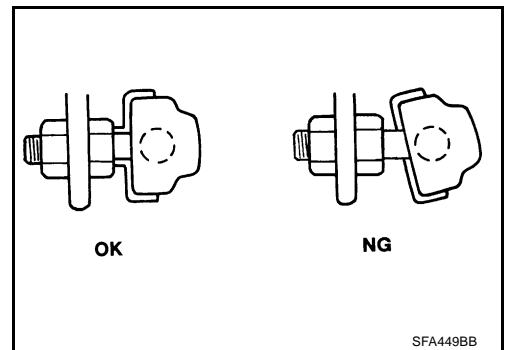
INSTALLATION

- Refer to [RSU-5, "Components"](#) for tightening torque. Install in the reverse order of removal.

CAUTION:

Refer to component parts location and do not reuse non-reusable parts.

- Stabilizer bar uses pillow ball type connecting rod, position ball joint with case on pillow ball head parallel to stabilizer bar.



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RSU

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G

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SERVICE DATA

SERVICE DATA

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Wheel Alignment (Unladen)

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Camber Degree minute (Decimal degree)	Minimum	- 1°05' (- 1.08°)	
	Nominal	- 0°35' (- 0.58°)	
	Maximum	- 0°05' (- 0.08°)	
Total toe-in	Distance (A - B)	Minimum	0 mm (0 in)
		Nominal	2.7 mm (0.11 in)
		Maximum	5.4 mm (0.21 in)

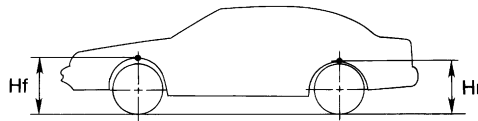
Ball Joint

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Oscillating torque	0.50 - 3.40 N·m (0.06 - 0.34 kg-m, 5 - 30 in-lb)
Measurement on spring balance (cotter pinhole position)	8.06 - 54.8 N (0.82 - 5.59 kg, 1.81 - 12.32 lb)
Sliding torque	0.50 - 3.40 N·m (0.06 - 0.34 kg-m, 5 - 30 in-lb)
Axial end play	0 mm (0 in)

Wheelarch Height (Unladen*)

AES0000R



SFA818A

Applied model	205/65R16	215/55R17
Front (Hf)	711 mm (27.99 in)	711 mm (27.99 in)
Rear (Hr)	703 mm (27.68 in)	704 mm (27.72 in)

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