

FRONT & REAR SUSPENSION

SECTION **SU**

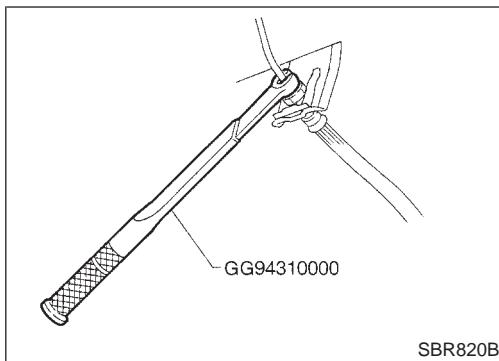
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FRONT SUSPENSION

Precautions



Precautions

PRECAUTIONS

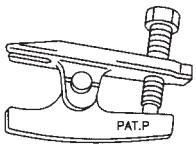
- When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground. Oil will shorten the life of rubber bushes. Be sure to wipe off any spilled oil.
*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.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

NMSU0001

Preparation

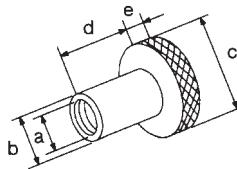
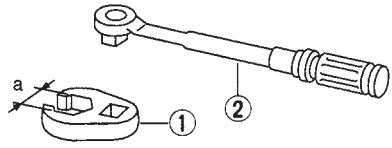
SPECIAL SERVICE TOOLS

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| Tool number Tool name | Description |
|----------------------------------|---|
| HT72520000 Ball joint remover |  NT146 Removing tie-rod outer end and lower ball joint |

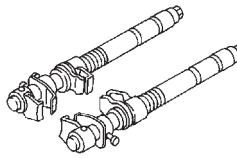
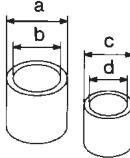
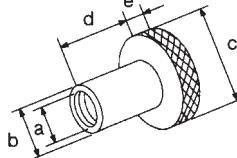
COMMERCIAL SERVICE TOOLS

NMSU0003

| Tool name | Description |
|---|---|
| Attachment Wheel alignment |  NT148 Measure wheel alignment a: Screw M24 x 1.5 pitch b: 35 mm (1.38 in) dia. c: 65 mm (2.56 in) dia. d: 56 mm (2.20 in) e: 12 mm (0.47 in) |
| 1 Flare nut crowfoot 2 Torque wrench |  NT360 Removing and installing each brake piping a: 10 mm (0.39 in) |

FRONT SUSPENSION

Preparation (Cont'd)

| Tool name | Description | |
|----------------------------|---|---|
| Spring compressor |  | Removing and installing coil spring |
| NT717 | | GI MA EM |
| Tension rod bushing drift |  | Removing and installing tension rod bushing a: 75 mm (2.95 in) dia. b: 66 mm (2.60 in) dia. c: 62 mm (2.44 in) dia. d: 25 - 55 mm (0.98 - 2.17 in) dia. |
| NT155 | | LC EC |
| Attachment Wheel alignment |  | Measure wheel alignment a: Screw M22 x 1.5 pitch b: 35 mm (1.38 in) dia. c: 65 mm (2.56 in) dia. d: 56 mm (2.20 in) e: 12 mm (0.47 in) |
| NT148 | | FE CL MT |

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FRONT SUSPENSION

Noise, Vibration and Harshness (NVH) Troubleshooting

Noise, Vibration and Harshness (NVH) Troubleshooting

NVH TROUBLESHOOTING CHART

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

=NMSU0004

NMSU0004S01

| Symptom | | Possible Cause and SUSPECTED PARTS | | | | | | Reference page | |
|------------|-------|------------------------------------|---|---|--|------------------------------------|------------------------------------|------------------------------------|-----------|
| | | ROAD WHEEL | | | TIRES | | | | |
| ROAD WHEEL | TIRES | SUSPENSION | | | SUSPENSION | | | SU-5, 15 | SU-10, 20 |
| | | Noise | × | × | Improper installation, looseness | | | | |
| | | Shake | × | × | Shock absorber deformation, damage or deflection | | | | |
| | | Vibration | × | × | Bushing or mounting deterioration | — | | | |
| | | Shimmy | × | × | Parts interference | — | | | |
| | | Judder | × | × | Spring fatigue | — | | | |
| | | Poor quality ride or handling | × | × | Suspension looseness | SU-9, 18 | | | |
| ROAD WHEEL | TIRES | Noise | × | × | Incorrect wheel alignment | SU-6 | | SU-6 | SU-11, 22 |
| | | Shake | × | × | Stabilizer bar fatigue | | | | |
| | | Vibration | × | × | Out-of-round | SU-6 | | | |
| | | Shimmy | × | × | Imbalance | — | | | |
| | | Judder | × | × | Incorrect air pressure | — | | | |
| | | Poor quality ride or handling | × | × | Uneven tire wear | — | | | |
| | | Noise | × | × | Deformation or damage | — | | | |
| ROAD WHEEL | TIRES | Shake | × | × | Non-uniformity | — | | SU-6 | SU-9, 18 |
| | | Vibration | × | × | Incorrect tire size | — | | | |
| | | Shimmy | × | × | DRIVE SHAFT | AX-17 | | | |
| | | Judder | × | × | AXLE | AX-3, AX-10 | | | |
| | | Poor quality ride or handling | × | × | SUSPENSION | Refer to SUSPENSION in this chart. | | | |
| | | Noise | × | × | TIRES | Refer to TIRES in this chart. | Refer to SUSPENSION in this chart. | Refer to ROAD WHEEL in this chart. | |
| | | Shake | × | × | ROAD WHEEL | Refer to ROAD WHEEL in this chart. | | | |
| ROAD WHEEL | TIRES | Shimmy, Judder | × | × | BRAKES | BR-5 | | | |
| | | Poor quality ride or handling | × | × | STEERING | ST-5 | | | |

x: Applicable

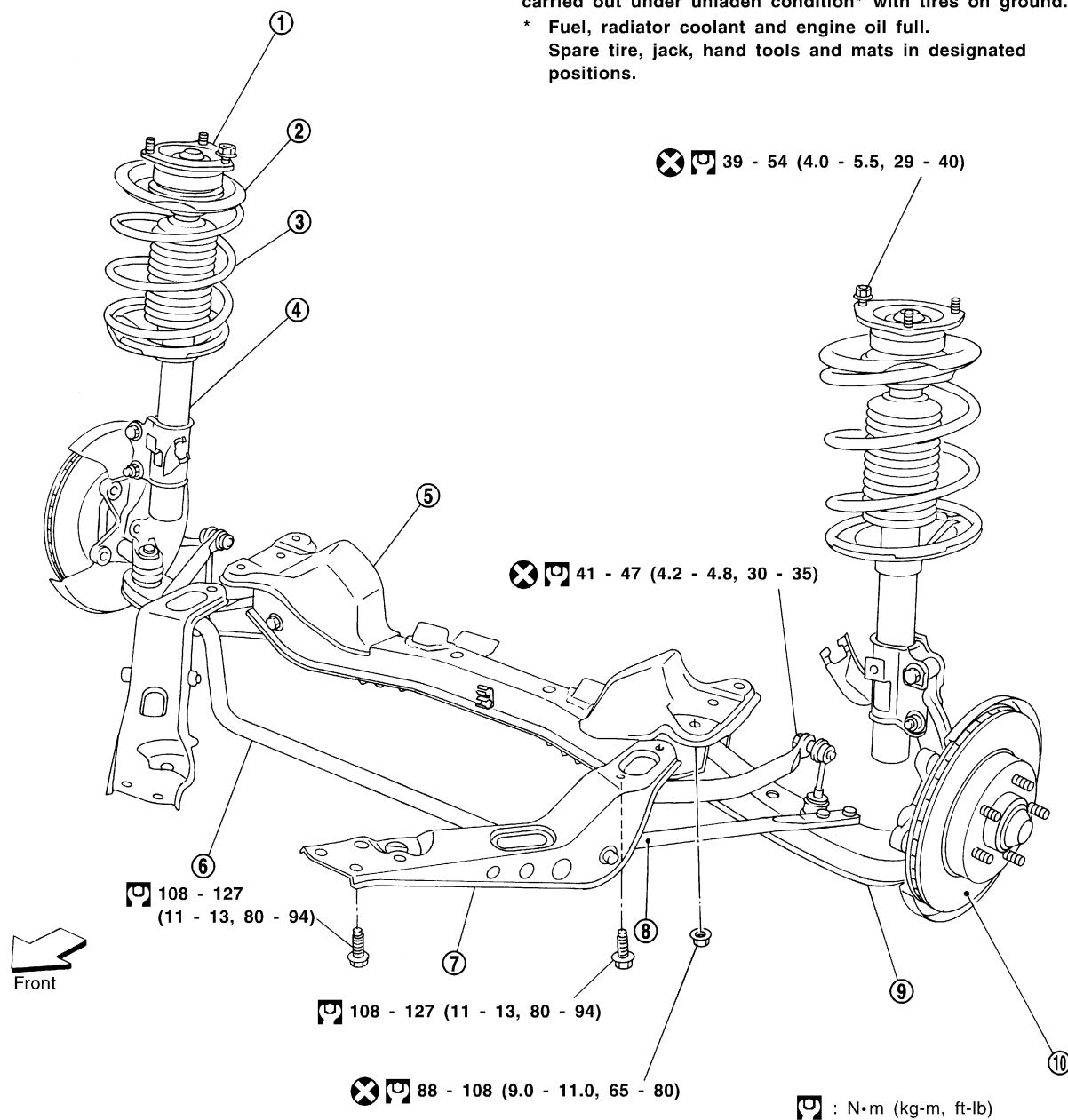
FRONT SUSPENSION

Components

SEC. 401

When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground.

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



NMSU0005

- | | | |
|-----------------------------|----------------------------|--------------------|
| 1. Strut mounting insulator | 5. Front suspension member | 8. Tension rod |
| 2. Spring upper seat | 6. Front stabilizer | 9. Transverse link |
| 3. Coil spring | 7. Tension rod bracket | 10. Brake rotor |
| 4. Strut assembly | | |

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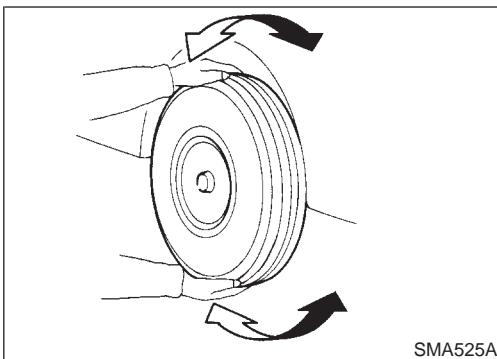
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FRONT SUSPENSION

On-vehicle Service



On-vehicle Service

FRONT SUSPENSION PARTS

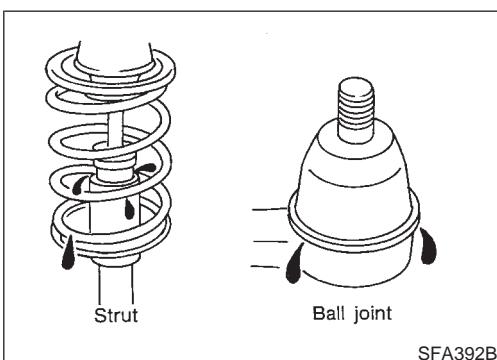
NMSU0006

Check front axle and front suspension parts for excessive play, cracks, wear or other damage.

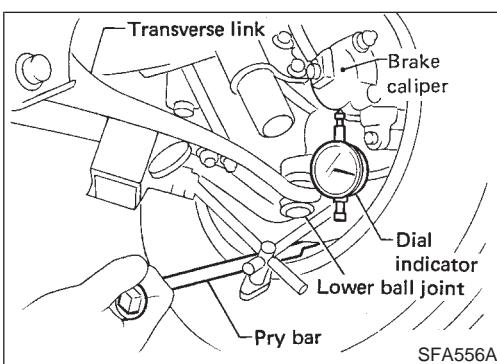
- Shake each front wheel to check for excessive play.
- Make sure that cotter pin is inserted.
- Retighten all axle and suspension nuts and bolts to the specified torque.

Tightening torque:

Refer to "FRONT SUSPENSION", SU-5.



- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.
If ball joint dust cover is cracked or damaged, replace transverse link.



- Check suspension ball joint end play.
- a) Jack up front of vehicle and set the stands.
- b) Clamp dial indicator onto transverse link and place indicator tip on lower edge of brake caliper.
- c) Make sure front wheels are straight and brake pedal is depressed.
- d) Place a pry bar between transverse link and inner rim of road wheel.
- e) While raising and releasing pry bar, observe maximum dial indicator value.

Vertical end play: 0 mm (0 in)

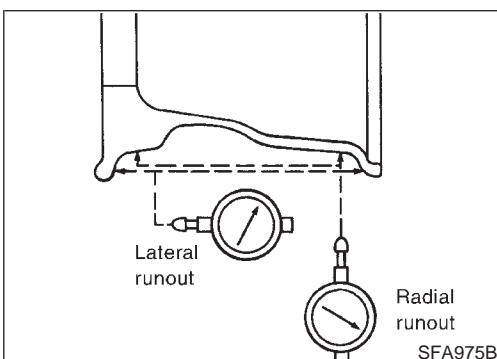
- f) If ball joint movement is beyond specifications, remove and replace it.

FRONT WHEEL ALIGNMENT

NMSU0007

Before checking front wheel alignment, be sure to make a preliminary inspection (Unladen*).

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



Preliminary Inspection

NMSU0007S01

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage.
If deformed, remove wheel and check wheel runout.
- a. Remove tire from wheel and mount wheel on a tire balance machine.
- b. Set dial indicator as shown in the illustration.

Wheel runout (Dial indicator value):

Refer to SDS, SU-13.

3. Check front wheel bearings for looseness.

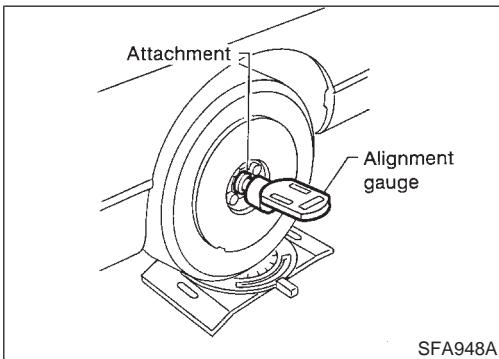
4. Check front suspension for looseness.
5. Check steering linkage for looseness.
6. Check that front shock absorbers work properly.
7. Check vehicle posture (Unladen).

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Camber, Caster and Kingpin Inclination

NMSU0007S02
Camber, caster and kingpin inclination are preset at factory and cannot be adjusted.

1. Measure camber, caster and kingpin inclination of both right and left wheels with a suitable alignment gauge.

Camber, caster and kingpin inclination:
Refer to SDS, SU-13.

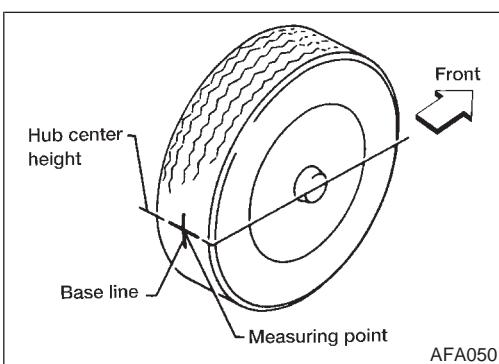
2. If camber, caster or kingpin inclination is not within specification, inspect front suspension parts. Replace damaged or worn out parts.

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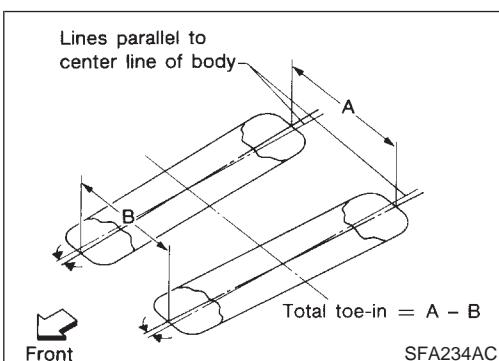
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Toe-in

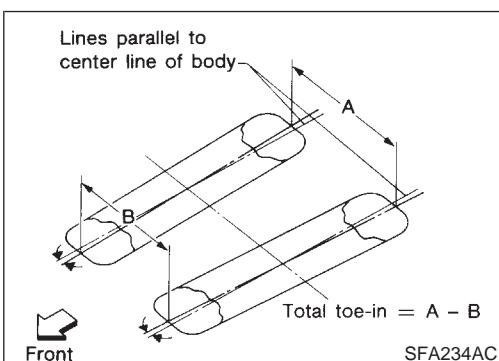
Measure toe-in using the following procedure.



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 front 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 tread (rear side) of both tires at the same height as hub center. These are measuring points.

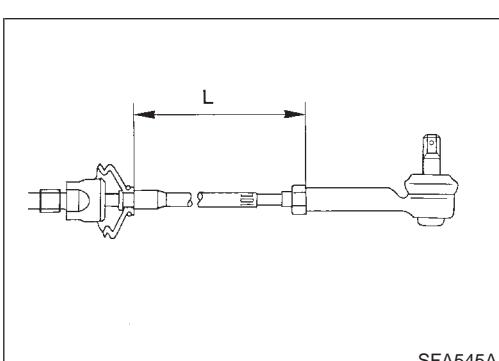


4. Measure distance "A" (rear side).
5. Push the vehicle slowly ahead to rotate the wheels 180 degrees (1/2 turn).

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 SDS, SU-13.



7. Adjust toe-in by varying the length of steering tie-rods.

- a. Loosen lock nuts.
- b. Adjust toe-in by screwing tie-rods in and out.
Standard length "L": 164.2 mm (6.46 in)
- c. Tighten lock nuts to specified torque.

Lock nut tightening torque:

37 - 46 N·m (3.7 - 4.7 kg·m, 27 - 33 ft-lb)

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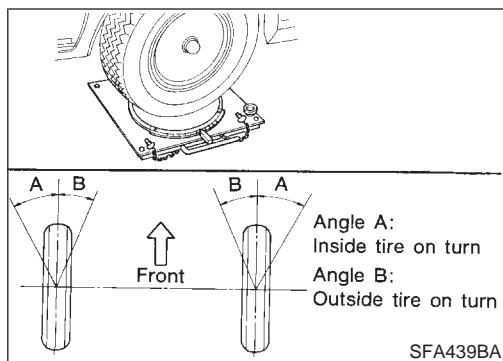
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FRONT SUSPENSION

On-vehicle Service (Cont'd)

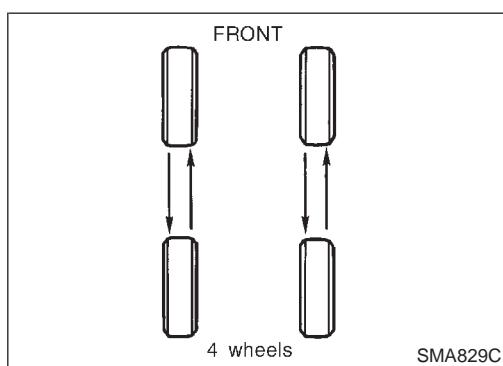


Front Wheel Turning Angle

- NMSU0007S04
1. Set wheels in straight-ahead position. Then move vehicle forward until front wheels rest on turning radius gauge properly.
 2. Rotate steering wheel all the way right and left; measure turning angle.

Do not hold the steering wheel on full lock for more than 15 seconds.

Wheel turning angle (Full turn):
Refer to SDS, SU-13.



Tire Rotation

- NMSU0007S05
- Do not include the T-type spare tire when rotating the tires.

 : 99 - 117 N·m (10.1 - 11.9 kg·m, 73.0 - 86.3 ft-lb)

FRONT SUSPENSION

Coil Spring and Shock Absorber

Coil Spring and Shock Absorber COMPONENTS

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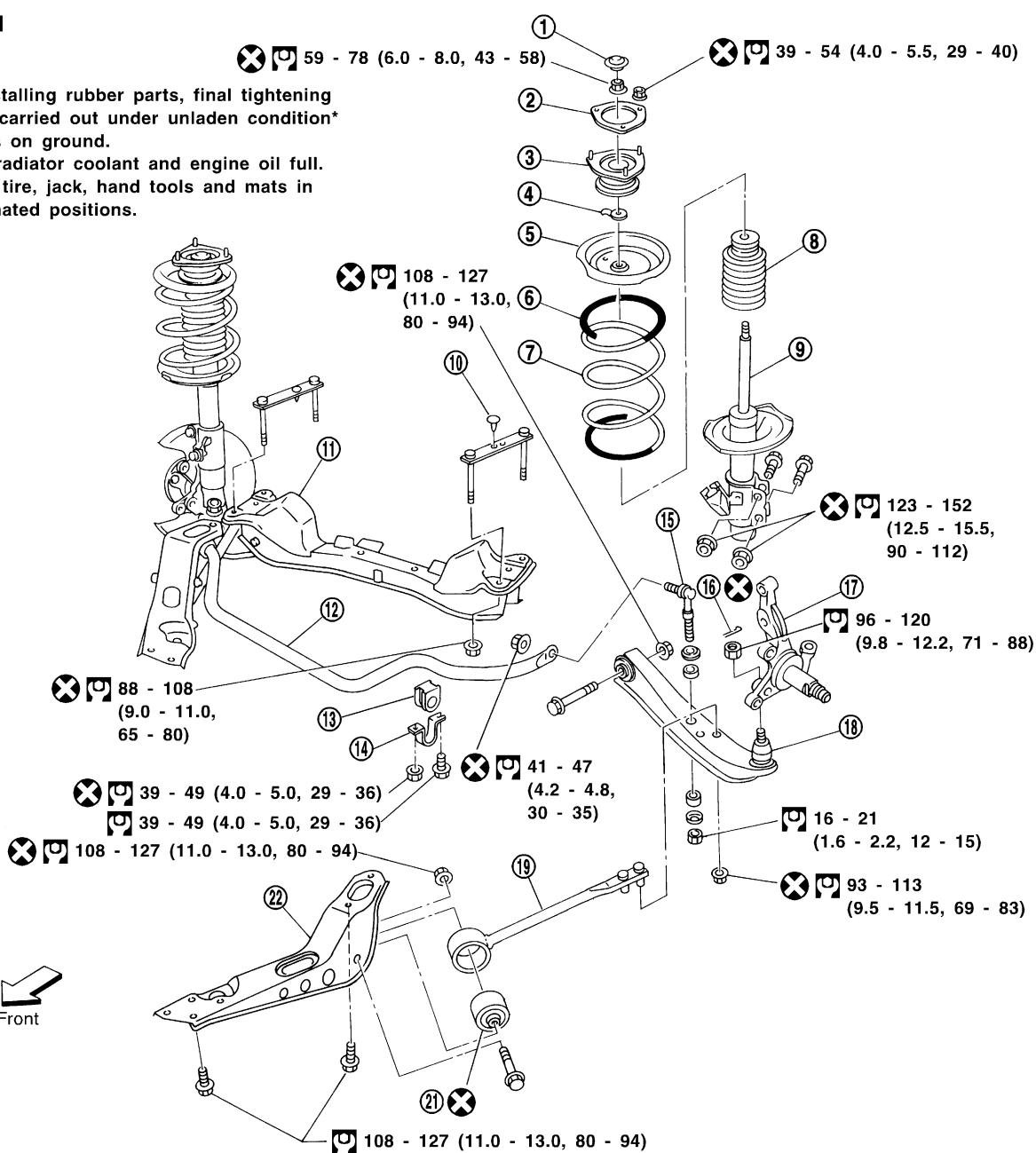
SSU045

SEC. 401

✖ 59 - 78 (6.0 - 8.0, 43 - 58) ✖ 39 - 54 (4.0 - 5.5, 29 - 40)

When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground.

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



✖ : N·m (kg·m, ft·lb)

1. Cap
2. Gasket
3. Strut mounting insulator
4. Lock washer
5. Upper seat
6. (Polyurethane tube)
7. Coil spring

8. Bound bumper
9. Strut assembly
10. Plastic cap
11. Front suspension member
12. Stabilizer
13. Bushing
14. Clamp

15. Stabilizer connecting rod
16. Cotter pin
17. Knuckle spindle
18. Transverse link with ball joint
19. Tension rod
20. Tension rod bushing
21. Tension rod bracket

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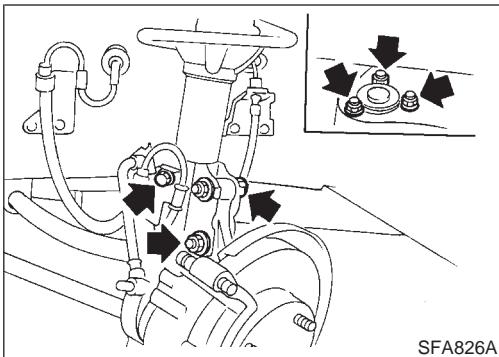
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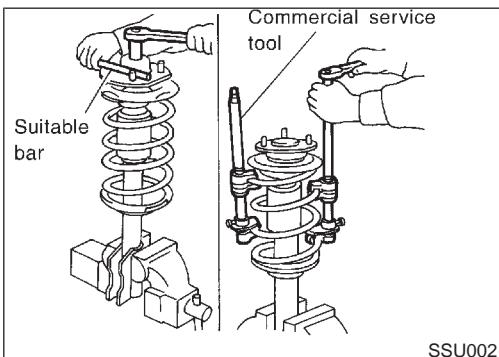
FRONT SUSPENSION

Coil Spring and Shock Absorber (Cont'd)



REMOVAL AND INSTALLATION

- Remove shock absorber fixing bolt and nut (to hoodledge). =NMSU0009
- Do not remove piston rod lock nut on vehicle.

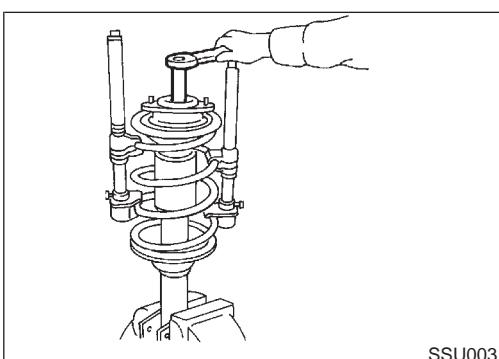


DISASSEMBLY

1. Set shock absorber on vise, then loosen piston rod lock nut. NMSU0010
- Do not remove piston rod lock nut at this time.
2. Compress spring with Tool so that shock absorber mounting insulator can be turned by hand.

WARNING:

Make sure that the pawls of the two spring compressors are firmly hooked on the spring. The spring compressors must be tightened alternately so as not to tilt the spring.



3. Remove piston rod lock nut.

INSPECTION

Shock Absorber Assembly

NMSU0011

- 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. Replace if necessary.

Mounting Insulator and Rubber Parts

NMSU0011S02

- Check cemented rubber-to-metal portion for separation or cracks. Check rubber parts for deterioration. Replace if necessary.

Thrust Bearing

NMSU0011S06

- Check thrust bearing parts for abnormal noise or excessive rattle in axial direction.
- Replace if necessary.

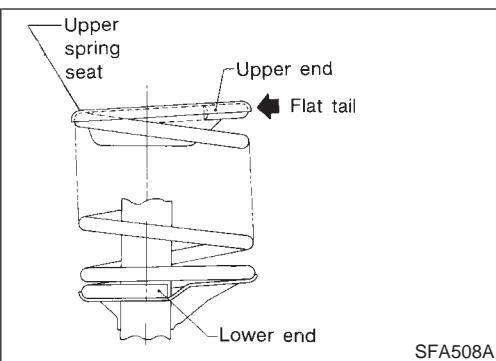
Coil Spring

NMSU0011S03

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

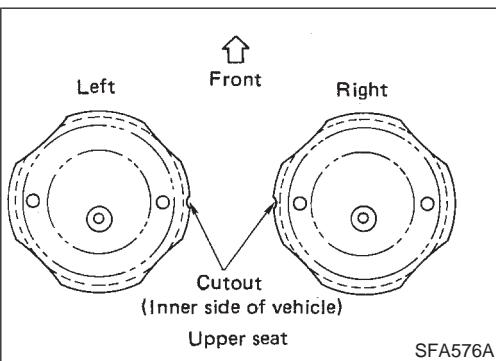
FRONT SUSPENSION

Coil Spring and Shock Absorber (Cont'd)

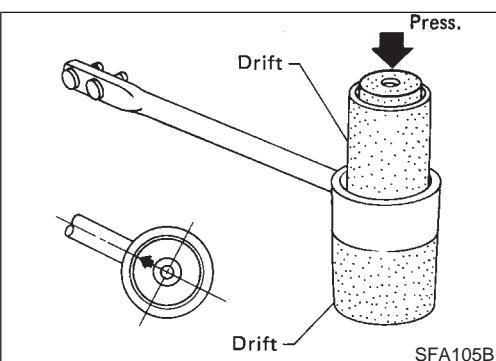


ASSEMBLY

- When installing coil spring on strut, it must be positioned as shown in the figure at left.



- Install upper spring seat with its cutout facing the inner side of vehicle.



Tension Rod and Stabilizer Bar

REMOVAL AND INSTALLATION

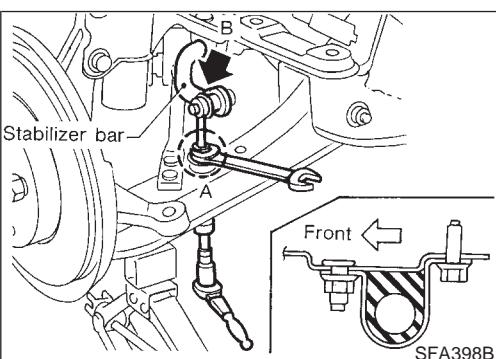
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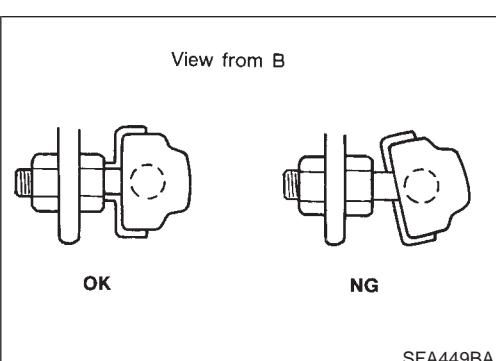
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- Install stabilizer rear side bushings, then install front side bushings.
When installing stabilizer bar clamp, make sure direction is correct (as shown at left).
- When removing and installing stabilizer bar, fix portion A.



- Install stabilizer bar with ball joint socket properly placed.

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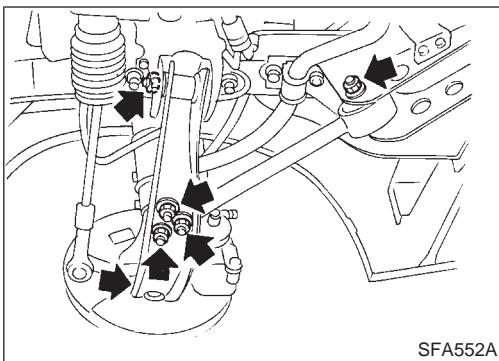
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FRONT SUSPENSION

Transverse Link and Lower Ball Joint



SFA552A

Transverse Link and Lower Ball Joint

REMOVAL AND INSTALLATION

NMSU0018

- Remove stabilizer, tension rod, ball joint and transverse link assembly.
- During installation, final tightening must be carried out at curb weight with tires on ground.
- After installation, check wheel alignment.
Refer to "Front Wheel Alignment" of ON-VEHICLE SERVICE (SU-6).

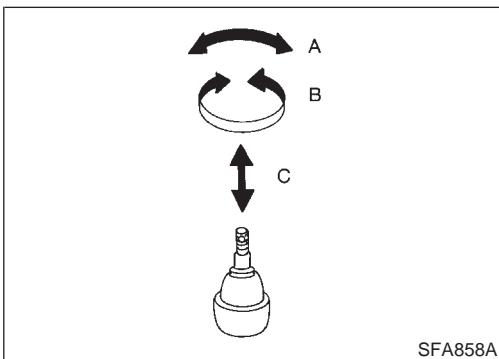
INSPECTION

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Transverse Link

NMSU0019S01

- Check transverse link for damage, cracks or deformation. Replace it if necessary.
- Check rubber bushing for damage, cracks and deformation. Replace transverse link if necessary.



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Lower Ball Joint

NMSU0019S02

- Check ball joint for play. Replace transverse link assembly if any of the following cases occur. Ball stud is worn, play in axial direction is excessive or joint is hard to swing.
Before checking, turn ball joint at least 10 revolutions so that ball joint is properly broken in.

Swinging force "A":

(measuring point: cotter pin hole of ball stud):

7.8 - 54.9 N (0.8 - 5.6 kg, 1.8 - 12.3 lb)

Turning torque "B":

0.5 - 3.4 N·m (5 - 35 kg·cm, 4.3 - 30.4 in-lb)

Vertical end play "C":

0 mm (0 in)

- Check dust cover for damage. Replace it and cover clamp if necessary.

FRONT SUSPENSION

Service Data and Specifications (SDS)

Service Data and Specifications (SDS)

GENERAL SPECIFICATIONS (FRONT)

=NMSU0020

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|---------------------|------------------------------|
| Suspension type | Independent MacPherson strut |
| Shock absorber type | Double-acting hydraulic |
| Stabilizer bar | Standard equipment |

NMSU0021

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FRONT WHEEL ALIGNMENT (UNLADEN*1)

| | | |
|---|---|---------------------|
| Camber Degree minute (Decimal degree) | Minimum | -1°45' (-1.75°) |
| | Nominal | -1°00' (-1.00°) |
| | Maximum | -0°15' (-0.25°) |
| | Left and right difference | 45' (0.75°) or less |
| Caster Degree minute (Decimal degree) | Minimum | 6°10' (6.17°) |
| | Nominal | 6°55' (6.92°) |
| | Maximum | 7°40' (7.67°) |
| | Left and right difference | 45' (0.75°) or less |
| Kingpin inclination Degree minute (Decimal degree) | Minimum | 13°10' (13.17°) |
| | Nominal | 13°55' (13.92°) |
| | Maximum | 14°40' (14.67°) |
| | Distance (A - B) mm (in) | |
| Total toe-in | Minimum | 1 (0.04) |
| | Nominal | 2 (0.08) |
| | Maximum | 3 (0.12) |
| | Angle (left plus right) Degree minute (Decimal degree) | |
| Wheel turning angle Full turn*2 | Minimum | 2'30" (0.04°) |
| | Nominal | 5' (0.08°) |
| | Maximum | 7'30" (0.13°) |
| | Inside Degree minute (Decimal degree) | Nominal |
| Outside Degree minute (Decimal degree) | Nominal | 32°10' (32.17°) |

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

*2: On power steering models, wheel turning force (at circumference of steering wheel) of 98 to 147 N (10 to 15 kg, 22 to 33 lb) with engine idle.

LOWER BALL JOINT

NMSU0022

RS

| | |
|--|------------------------------------|
| Swinging force "A" (Measuring point: cotter pin hole of ball stud) N (kg, lb) | 7.8 - 54.9 (0.8 - 5.6, 1.8 - 12.3) |
| Turning torque "B" N·m (kg-cm, in-lb) | 0.5 - 3.4 (5 - 35, 4.3 - 30.4) |
| Vertical end play "C" mm (in) | 0 (0) |

BT

WHEEL RUNOUT

NMSU0023

SC

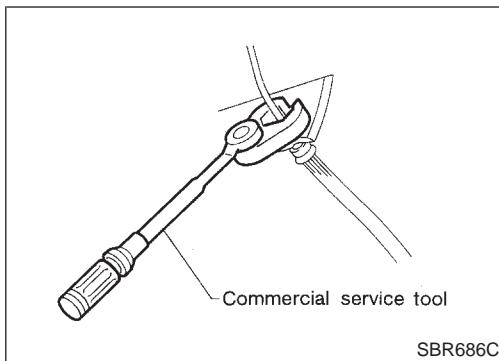
| Wheel type | Aluminum | Steel wheel | |
|--------------------------------------|---------------------|---------------------|---------------------|
| | | Inside | Outside |
| Maximum radial runout limit mm (in) | 0.3 (0.012) or less | 0.8 (0.031) or less | 0.4 (0.016) or less |
| Maximum lateral runout limit mm (in) | 0.3 (0.012) or less | 1.0 (0.039) or less | 0.9 (0.035) or less |

EL

IDX

REAR SUSPENSION

Precautions



Precautions

PRECAUTIONS

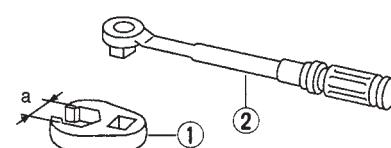
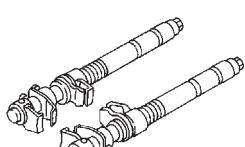
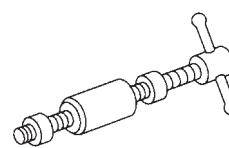
- When installing each rubber part, final tightening must be carried out under unladen condition* with tires on ground. Oil will shorten the life of rubber bushes. Be sure to wipe off any spilled oil.
*: Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
- 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 unreusable parts; always use new ones. When replacing, do not wipe the oil off of the new lock nut before tightening.

NMSU0024

Preparation

COMMERCIAL SERVICE TOOLS

NMSU0026

| Tool name | Description |
|--|---|
| Equivalent to GG94310000 1 Flare nut crowfoot 2 Torque wrench |  <p>NT360</p> <p>Removing and installing brake piping a: 10 mm (0.39 in)</p> |
| Spring compressor |  <p>NT717</p> <p>Removing and installing coil spring</p> |
| Arm bushing remover |  <p>NT157</p> <p>Removing and installing bushing of rear axle housing</p> |

Noise, Vibration and Harshness (NVH) Troubleshooting

NMSU0027

Refer to "Noise, Vibration and Harshness (NVH) Troubleshooting", "FRONT SUSPENSION", SU-4.

Components

NMSU0028

GI

MA

EM

LC

EC

FE

CL

MT

AT

PD

AX

SU

BR

ST

RS

BT

HA

SC

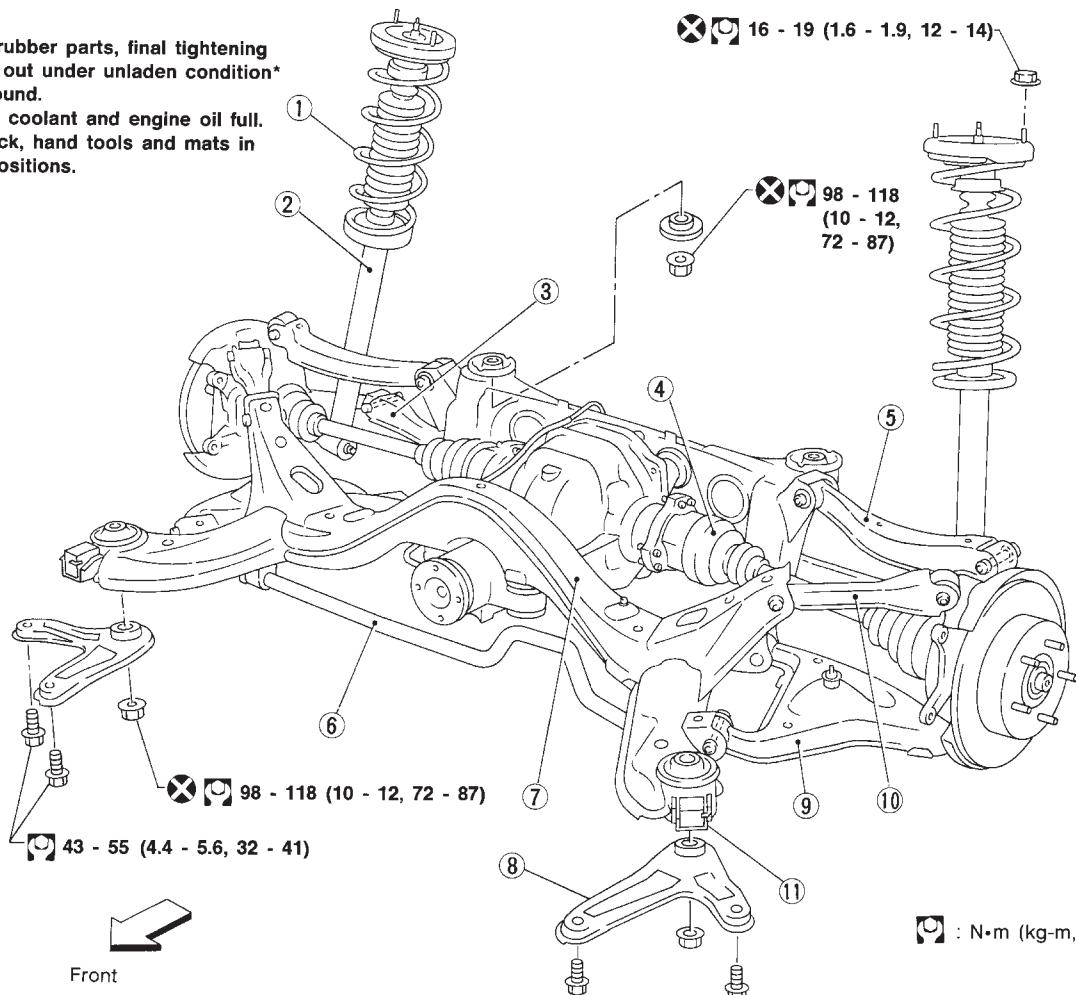
EL

IDX

SEC. 431

When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground.

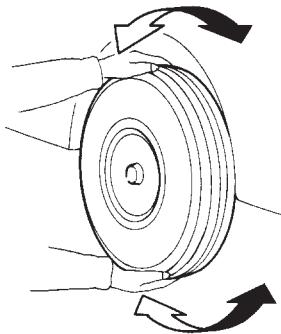
* Fuel, radiator coolant and engine oil full.
Spare tire, jack, hand tools and mats in designated positions.



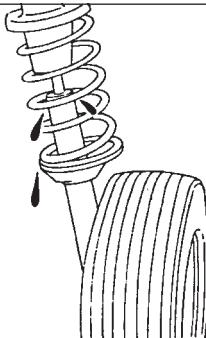
- | | | |
|-------------------|----------------------|-----------------------------|
| 1. Coil spring | 5. Rear upper link | 9. Lower arm |
| 2. Shock absorber | 6. Stabilizer bar | 10. Front upper link |
| 3. Lateral link | 7. Suspension member | 11. Dynamic damper assembly |
| 4. Drive shaft | 8. Member stay | |

REAR SUSPENSION

On-vehicle Service



SMA525A



SMA113

On-vehicle Service

REAR SUSPENSION PARTS

=NMSU0029
Check axle and suspension parts for excessive play, wear or damage.

- Shake each rear wheel to check for excessive play.
- Retighten all nuts and bolts to the specified torque.

Tightening torque:

Refer to "REAR SUSPENSION", SU-15.

- Check shock absorber for oil leakage or other damage.
- Check shock absorber bushing for excessive wear and other damage.

REAR WHEEL ALIGNMENT

=NMSU0030
Before checking rear wheel alignment, be sure to make a preliminary inspection (Unladen*).

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

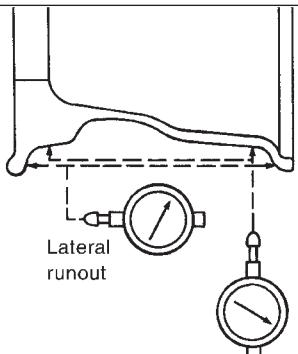
Preliminary Inspection

NMSU0030S01

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
 - a. Remove tire from wheel and mount wheel on a tire balance machine.
 - b. Set dial indicator as shown in the illustration.
3. Check front wheel bearings for looseness.
4. Check front suspension for looseness.
5. Check steering linkage for looseness.
6. Check that front shock absorbers work properly.
7. Check vehicle posture (Unladen).

Wheel runout (Dial indicator value):

Refer to SDS, SU-13.



Lateral runout
Radial runout
SFA975B

Camber

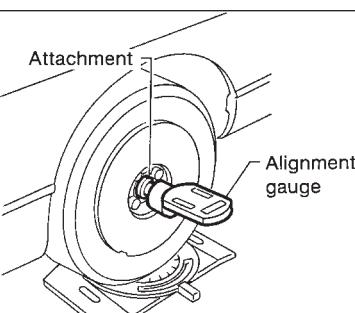
Camber is preset at factory and cannot be adjusted.

NMSU0030S02

Camber:

Refer to SDS, SU-23.

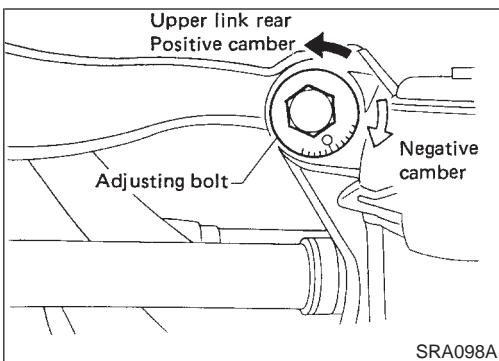
- If the camber is not within specification, inspect and replace any damaged or worn rear suspension parts.



SFA948A

REAR SUSPENSION

On-vehicle Service (Cont'd)



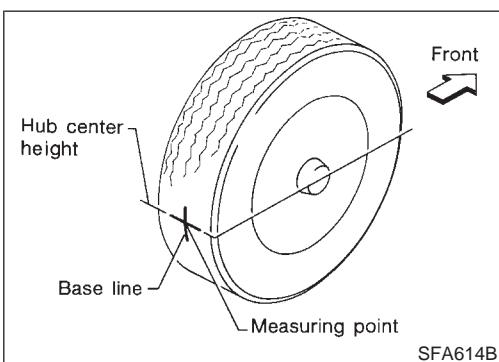
- If camber is not within specification, adjust by turning the adjusting bolt.
- 1. Turn the adjusting bolt to adjust. **Camber changes about 4° with each graduation of the adjusting bolt.**
- 2. Tighten to the specified torque. **④ : 69 - 88 N·m (7.0 - 9.0 kg-m, 51 - 65 ft-lb)**
- After adjusting camber, be certain to check toe-in and, if necessary, re-adjust it.

GI

MA

EM

LC



Toe-in

NMSU0030S03
Measure toe-in using following procedure. If out of specification, inspect and replace any damaged or worn rear suspension parts.

WARNING:

- Perform following procedure always 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).

EC

FE

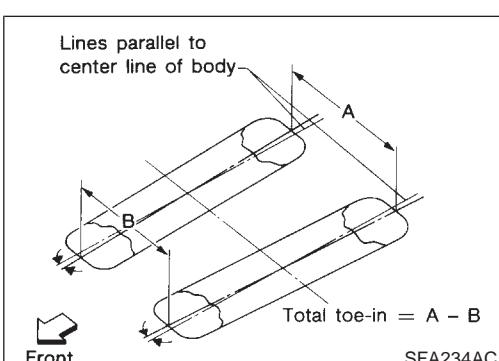
CL

MT

AT

PD

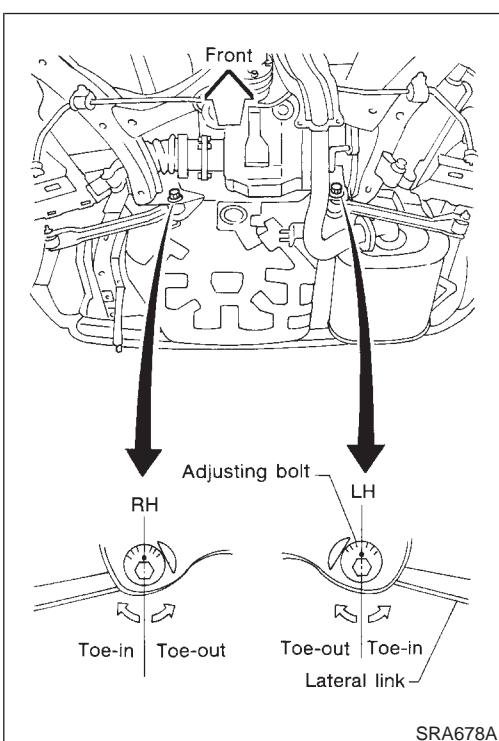
AX



Total toe-in: A - B

Refer to SDS, SU-23.

SU



7. Adjust toe-in by turning adjusting bolts.

Toe changes about 1.3 mm (0.051 in) [One side] with each graduation of the adjusting bolt.

8. Tighten to the specified torque.

④ : 69 - 88 N·m (7.0 - 9.0 kg-m, 51 - 65 ft-lb)

- After adjusting the toe-in, be certain to check camber and, if necessary, re-adjust it.

BR

ST

RS

Drive Shaft

NMSU0030S04
Check boot and drive shaft for cracks, wear, damage or grease leakage.

BT

HA

SC

EL

IDX

REAR SUSPENSION

Removal and Installation

Removal and Installation

NMSU0031

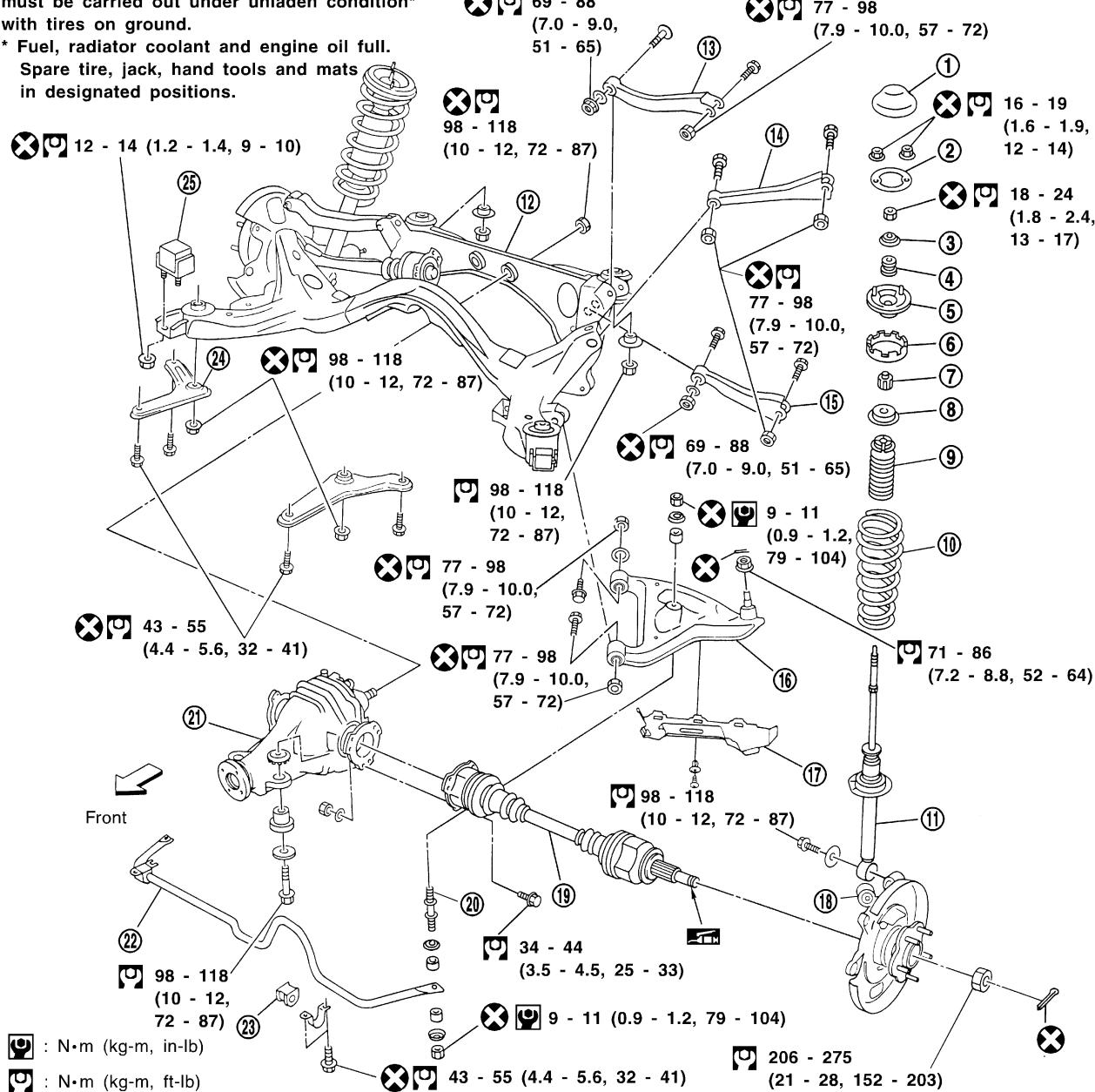
SEC. 380•396•431

CAUTION:

Do not jack up at lower link.

When installing rubber parts, final tightening must be carried out under unladen condition* with tires on ground.

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



 : N·m (kg·m, in-lb)

 : N·m (kg·m, ft-lb)

SSU046

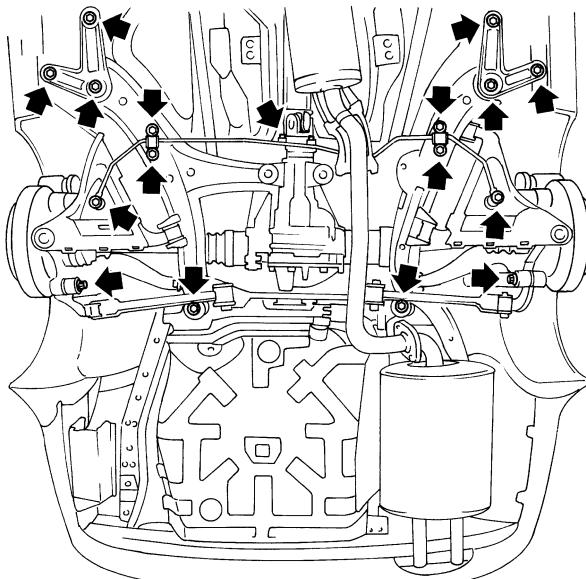
- | | | |
|----------------------------------|-----------------------|-----------------------------|
| 1. Cap | 10. Coil spring | 18. Axle housing |
| 2. Gasket | 11. Shock absorber | 19. Drive shaft |
| 3. Upper plate | 12. Suspension member | 20. Connecting rod |
| 4. Bushing | 13. Rear upper link | 21. Final drive |
| 5. Upper spring seat | 14. Front upper link | 22. Stabilizer bar |
| 6. Upper rubber seat | 15. Lateral link | 23. Bushing |
| 7. Bushing | 16. Lower arm | 24. Member stay |
| 8. Plate | 17. Protector | 25. Dynamic damper assembly |
| 9. Bumper rubber with dust cover | | |

REAR SUSPENSION

Removal and Installation (Cont'd)

REMOVAL AND INSTALLATION

NMSU0031S03



SRA684A

GI
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EC
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IDX

CAUTION:

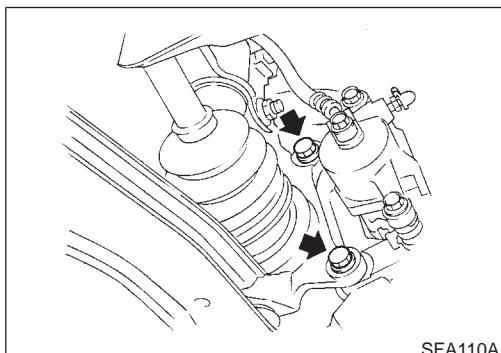
Before removing the rear suspension assembly, disconnect the ABS sensor from the assembly. Then move it away from the rear suspension assembly. Failure to do so may result in damages to the sensor wires, making the sensor inoperative.

1. Remove exhaust tube.
2. Disconnect propeller shaft rear end.
3. Disconnect hand brake wire front end.

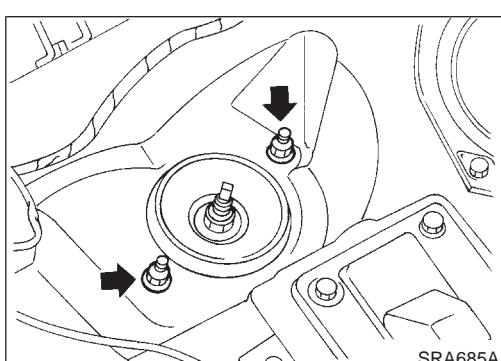
4. Remove brake caliper assembly.

Suspend caliper assembly with wire so as not to stretch brake hose.

Be careful not to depress brake pedal, or piston will pop out.



SFA110A



SRA685A

5. Remove rear parcel shelf. Refer to BT section.

6. Remove upper end nuts of shock absorber.

Do not remove piston rod lock nut.

7. Remove suspension member fixing nuts. Then draw out rear axle and rear suspension assembly.

REAR SUSPENSION

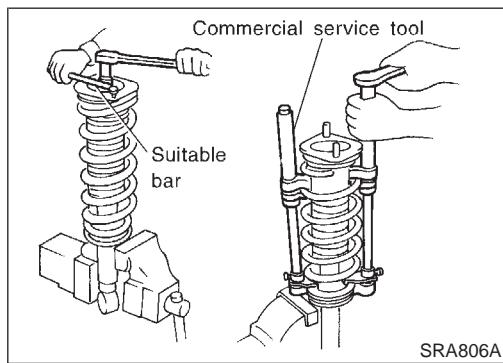
Coil Spring and Shock Absorber

Coil Spring and Shock Absorber

REMOVAL AND INSTALLATION

Remove shock absorber upper and lower fixing nuts.
Do not remove piston rod lock nut on vehicle.

NMSU0032



DISASSEMBLY

1. Set shock absorber in vise, then **loosen** piston rod lock nut.
Do not remove piston rod lock nut at this time.
2. Compress spring with Tool so that the shock absorber upper spring seat can be turned by hand.

WARNING:

Make sure that the pawls of the two spring compressors are firmly hooked on the spring. The spring compressors must be tightened alternately so as not to tilt the spring.

3. Remove piston rod lock nut.

NMSU0033

INSPECTION

Shock Absorber Assembly

NMSU0034

- 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. Replace if necessary.

NMSU0034S01

Upper Rubber Seat and Bushing

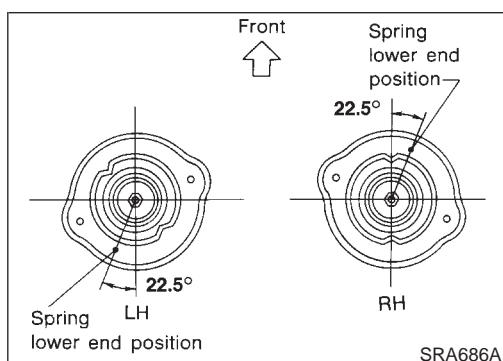
NMSU0034S02

Check rubber parts for deterioration or cracks.
Replace if necessary.

Coil Spring

NMSU0034S03

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



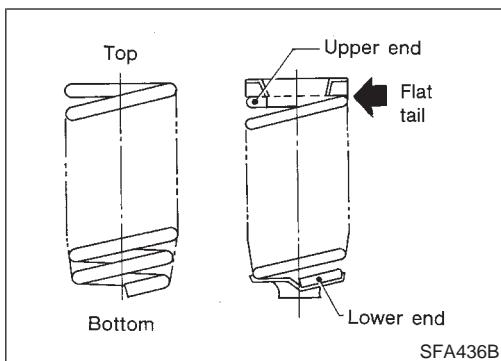
ASSEMBLY

- Locate upper spring seat as shown.

NMSU0035

REAR SUSPENSION

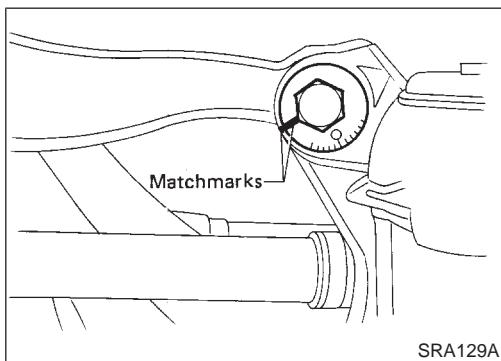
Coil Spring and Shock Absorber (Cont'd)



- When installing coil spring, be careful not to reverse top and bottom direction. (Top end is flat.)
- When installing coil spring on shock absorber, it must be positioned as shown in figure at left.

CAUTION:

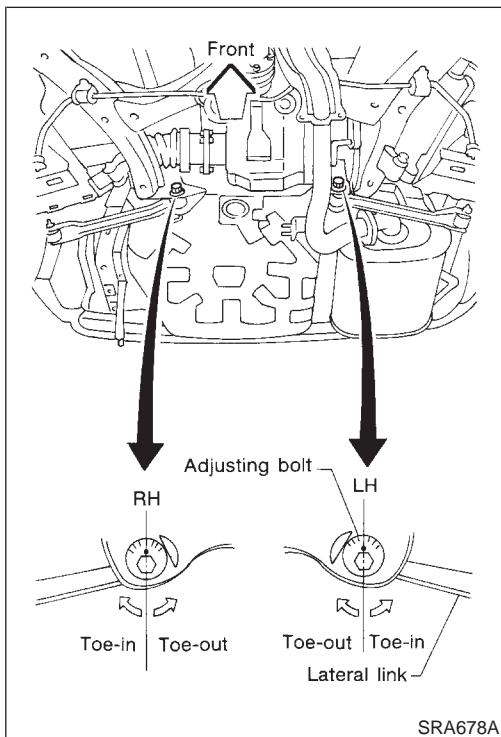
Do not reuse piston rod lock nut.



Multi-link and Lower Ball Joint

REMOVAL AND INSTALLATION

- Refer to "Removal and Installation" of REAR SUSPENSION (SU-18). NMSU0043
- Before removing, put matchmarks on adjusting pin.**
- When installing, final tightening must be carried out at curb weight with tires on ground.
- After installation, check wheel alignment. Refer to "Rear Wheel Alignment" of ON-VEHICLE SERVICE (SU-16).



INSPECTION

Rear Suspension member

NMSU0044
Replace suspension member assembly if cracked or deformed or if any part (insulator, for example) is damaged.

Upper and Lower Links

NMSU0044S02
Replace upper or lower link as required if cracked or deformed or if bushing is damaged.

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BT

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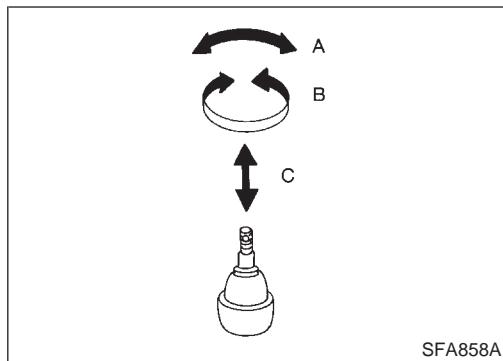
SC

EL

IDX

REAR SUSPENSION

Multi-link and Lower Ball Joint (Cont'd)



Lower Ball Joint

- Check ball joint for play. Replace transverse link assembly if any of the following cases occur. Ball stud is worn, play in axial direction is excessive or joint is hard to swing.

NMSU0044S03

Swing Force and Turning Torque

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

NMSU0044S04

Swing force "A":

(measuring point: cotter pin hole of ball stud)

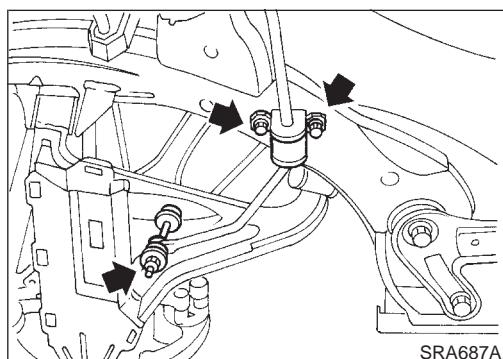
7.8 - 54.9 N (0.8 - 5.6 kg, 1.8 - 12.3 lb)

Turning torque "B":

0.5 - 3.4 N·m (5 - 35 kg·cm, 4.3 - 30.4 in-lb)

Vertical end play "C":

0 mm (0 in)



Stabilizer Bar

REMOVAL

- Remove connecting rod and clamp.

NMSU0045

INSPECTION

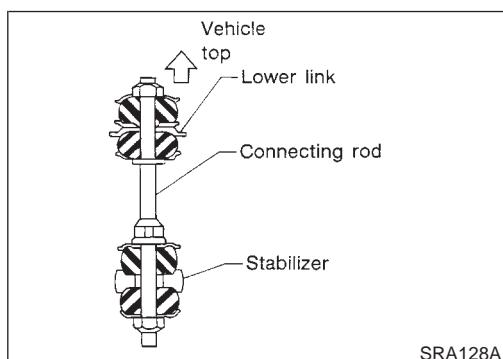
- Check stabilizer bar for deformation or cracks. Replace if necessary.
- Check rubber bushings for deterioration or cracks. Replace if necessary.

NMSU0046

INSTALLATION

When installing connecting rod, make sure direction is correct (as shown at left).

NMSU0047



REAR SUSPENSION

Service Data and Specifications (SDS)

Service Data and Specifications (SDS)

GENERAL SPECIFICATIONS (REAR)

=NMSU0039

GI

| | |
|---------------------|---|
| Suspension type | Independent multi-link with coil spring |
| Shock absorber type | Double-acting hydraulic |
| Stabilizer | Standard equipment |

REAR WHEEL ALIGNMENT (UNLADEN*)

NMSU0040

EM

| | | | |
|--|---|-----------------|-------------|
| Camber Degree minute (Decimal degree) | Minimum | -0°55' (-0.92°) | |
| | Nominal | -1°25' (-1.42°) | |
| | Maximum | -1°55' (-1.92°) | |
| Total toe-in | Distance (A - B) mm (in) | Minimum | 0 (0) |
| | Nominal | 2.6 (0.102) | |
| | Maximum | 5.2 (0.205) | |
| | Angle (left plus right) Degree minute (Decimal degree) | Minimum | 0' (0°) |
| | | Nominal | 7' (0.12°) |
| | | Maximum | 14' (0.23°) |

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

AT

PD

AX

SU

BR

ST

RS

BT

HA

SC

EL

IDX

NOTES