

SECTION **FSU**  
FRONT SUSPENSION

A  
B  
C  
D  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

FSU

CONTENTS

|  |   |  |    |
|--|---|--|----|
| <b>PRECAUTION</b> .....  | 2 | <b>FRONT COIL SPRING AND STRUT</b> .....           | 9  |
| <b>PRECAUTIONS</b> .....   | 2 | Exploded View .....                                | 9  |
| Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" ..... | 2 | Removal and Installation .....                     | 9  |
| Precaution for Procedure without Cowl Top Cover.....   | 2 | Disassembly and Assembly .....                     | 10 |
| Precautions for Suspension .....   | 2 | Inspection .....                                   | 11 |
| Precautions for Removing Battery Terminal .....  | 3 | Disposal .....                                     | 12 |
| <b>PREPARATION</b> .....   | 4 | <b>TRANSVERSE LINK</b> .....                       | 13 |
| <b>PREPARATION</b> .....   | 4 | Exploded View .....                                | 13 |
| Special Service Tools .....  | 4 | Removal and Installation .....                     | 13 |
| Commercial Service Tools .....   | 4 | Inspection .....                                   | 13 |
| <b>SYMPTOM DIAGNOSIS</b> .....   | 5 | <b>FRONT STABILIZER</b> .....                      | 15 |
| <b>NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING</b> .....                                | 5 | Exploded View .....                                | 15 |
| NVH Troubleshooting Chart .....  | 5 | Removal and Installation .....                     | 15 |
| <b>PERIODIC MAINTENANCE</b> .....  | 6 | Inspection .....                                   | 16 |
| <b>FRONT SUSPENSION ASSEMBLY</b> .....   | 6 | <b>FRONT SUSPENSION MEMBER</b> .....               | 17 |
| Inspection .....   | 6 | Exploded View .....                                | 17 |
| <b>WHEEL ALIGNMENT</b> .....   | 7 | Removal and Installation .....                     | 17 |
| Inspection .....   | 7 | Inspection .....                                   | 17 |
| Adjustment .....   | 7 | <b>SERVICE DATA AND SPECIFICATIONS (SDS)</b> ..... | 19 |
| <b>REMOVAL AND INSTALLATION</b> .....  | 9 | <b>SERVICE DATA AND SPECIFICATIONS (SDS)</b> ..... | 19 |
|  |   | Wheel Alignment .....                              | 19 |
|  |   | Ball Joint .....                                   | 21 |
|  |   | Wheelarch Height .....                             | 21 |

# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009978069

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

#### **WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

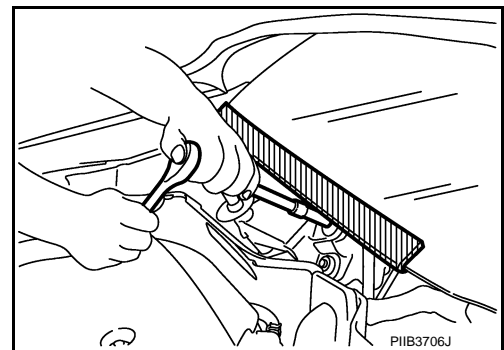
Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### Precaution for Procedure without Cowl Top Cover

INFOID:000000009650659

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



#### Precautions for Suspension

INFOID:000000009650660

- When installing rubber bushings, the final tightening must be carried out under unladen conditions with tires on ground. Spilled oil might shorten the life of rubber bushings. Be sure to wipe off any spilled oil.
- Unladen conditions mean that fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.
- After servicing suspension parts, be sure to check wheel alignment.
- Self-lock nuts are not reusable. Always use new ones when installing. Since new self-lock nuts are pre-oiled, tighten as they are.

# PRECAUTIONS

< PRECAUTION >

## Precautions for Removing Battery Terminal

INFOID:000000009871458

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

**NOTE:**

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

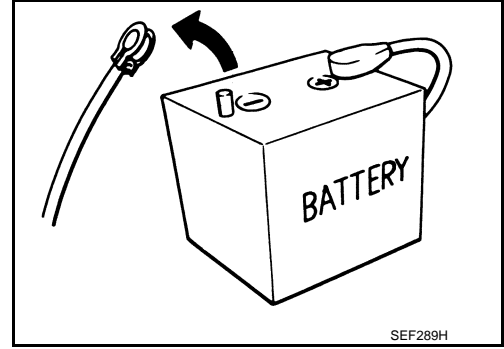
**NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

**NOTE:**

The removal of 12V battery may cause a DTC detection error.



A  
B  
C  
D

FSU

F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# PREPARATION

< PREPARATION >

## PREPARATION

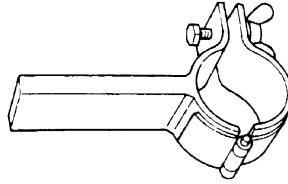
### PREPARATION

#### Special Service Tools

INFOID:000000009650661

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

| Tool number<br>(Kent-More No.)<br>Tool name | Description                        |
|---|------------------------------------|
| ST35652000<br>( — )<br>Strut attachment     | Disassembling and assembling strut |

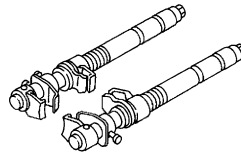


ZZA0807D

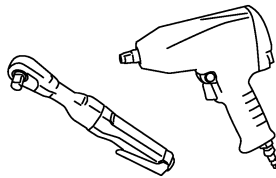
#### Commercial Service Tools

INFOID:000000009650662

| Tool name         | Description                         |
|-------------------|-------------------------------------|
| Spring compressor | Removing and installing coil spring |
| Power tool        | Loosening bolts and nuts            |



S-NT717



PBIC0190E

# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

#### NVH Troubleshooting Chart

INFOID:000000009650663

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

| Symptom   |                  | Possible cause and SUSPECTED PARTS |  |                                   |                    |                |                               |                           |                        |                                 |                   |                   |                    |                   |                   |   |
|-----------|------------------|------------------------------------|--|-----------------------------------|--------------------|----------------|-------------------------------|---------------------------|------------------------|---------------------------------|-------------------|-------------------|--------------------|-------------------|-------------------|---|
|           |                  | 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 | FRONT AXLE AND FRONT SUSPENSION | TIRE              | ROAD WHEEL        | DRIVE SHAFT        | BRAKE             | STEERING          |   |
| Symptom   | FRONT SUSPENSION | Noise                              | x  | x                                 | x                  | x              | x                             | x                         |                        |                                 | x                 | x                 | x                  | x                 | x                 | x |
|           |                  | Shake                              | x  | x                                 | x                  | x              |                               | x                         |                        |                                 | x                 | x                 | x                  | x                 | x                 | x |
|           |                  | Vibration                          | x  | x                                 | x                  | x              | x                             |                           |                        |                                 | x                 | x                 |                    | x                 |                   | x |
|           |                  | Shimmy                             | x  | x                                 | x                  | x              |                               |                           | x                      |                                 | x                 | x                 | x                  |                   | x                 | x |
|           |                  | Judder                             | x  | x                                 | x                  |                |                               |                           |                        |                                 | x                 | x                 | x                  |                   | x                 | x |
|           |                  | Poor quality ride or handling      | x  | x                                 | x                  | x              | x                             |                           | x                      | x                               | x                 | x                 | x                  |                   |                   |   |
| Reference |                  | FSU-9, FSU-13, FSU-15, FSU-17      | FSU-11   | —                                 | —                  | —              | FSU-9, FSU-13, FSU-15, FSU-17 | FSU-7                     | —                      | NVH in FAX and FSU sections     | NVH in WT section | NVH in WT section | NVH in FAX section | NVH in BR section | NVH in ST section |   |

x: Applicable

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

FSU

# FRONT SUSPENSION ASSEMBLY

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

### FRONT SUSPENSION ASSEMBLY

#### Inspection

INFOID:000000009650664

#### COMPONENT PART

Check the mounting conditions (looseness, backlash) of each component and component conditions (wear, damage) are normal.

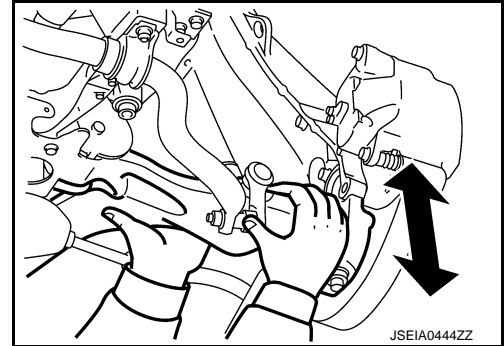
#### Ball Joint Axial End Play

1. Set front wheels in a straight-ahead position.
2. Move axle side of transverse link in the axial direction by hand. Check there is no end play.

**Axial end play** : Refer to [FSU-21, "Ball Joint"](#).

#### CAUTION:

- Never depress brake pedal when measuring.
- Never perform with tires on level ground.
- Be careful not to damage ball joint boot. Never damage the installation position by applying excessive force.



#### STRUT ASSEMBLY

Check for oil leakage, damage, and replace if necessary.

# WHEEL ALIGNMENT

< PERIODIC MAINTENANCE >

## WHEEL ALIGNMENT

### Inspection

INFOID:000000009650665

### DESCRIPTION

#### CAUTION:

- **Camber, caster, kingpin inclination angles cannot be adjusted.**
- **If camber, caster, or kingpin inclination angle is outside the standard, check front suspension parts for wear and damage. Replace suspect parts if a malfunction is detected.**
- **Kingpin inclination angle is reference value, no inspection is required.**

Measure wheel alignment under unladen conditions.

#### NOTE:

“Unladen conditions” means that fuel, engine coolant, and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

### PRELIMINARY CHECK

Check the following:

- Tires for improper air pressure and wear. Refer to [WT-51, "Tire Air Pressure"](#).
- Road wheels for runout.
- Wheel bearing axial end play. Refer to [FAX-7, "Inspection"](#).
- Transverse link ball joint axial end play. Refer to [FSU-6, "Inspection"](#).
- Strut operation.
- Each mounting part of axle and suspension for looseness and deformation.
- Each of suspension member, strut assembly and transverse link for cracks, deformation and other damage.
- Vehicle height (posture).

### GENERAL INFORMATION AND RECOMMENDATIONS

- A four-wheel thrust alignment should be performed.
- This type of alignment is recommended for any NISSAN/INFINITI vehicle.
- The four-wheel “thrust” process helps ensure that the vehicle is properly aligned and the steering wheel is centered.
- The alignment rack itself should be capable of accepting any NISSAN/INFINITI vehicle.
- The rack should be checked to ensure that it is level.
- Check the machine is properly calibrated.
- Your alignment equipment should be regularly calibrated in order to give correct information.
- Check with the manufacturer of your specific equipment for their recommended Service/Calibration Schedule.

### ALIGNMENT PROCESS

#### IMPORTANT:

Use only the alignment specifications listed in this Service Manual.

- When displaying the alignment settings, many alignment machines use “indicators”: (Green/red, plus or minus, Go/No Go). **Never use these indicators.**
- The alignment specifications programmed into your machine that operate these indicators may not be correct.
- This may result in an ERROR.
- Most camera-type alignment machines are equipped with both “Rolling Compensation” method and optional “Jacking Compensation” method to “compensate” the alignment targets or head units. “Rolling Compensation” is the preferred method.
- If using the “Rolling Compensation” method, after installing the alignment targets or head units, push or pull on the rear wheel to move the vehicle. **Do not push or pull on the vehicle body.**
- If using the “Jacking Compensation” method, after installing the alignment targets or head units, raise the vehicle and rotate the wheels 1/2 turn both ways.

#### NOTE:

- Do not use the “Rolling Compensation” method if you are using sensor-type alignment equipment.
- Follow all instructions for the alignment machine you're using for more information.

### Adjustment

INFOID:000000009650666

### TOE-IN

- Loosen the steering outer socket, and then adjust the length using steering inner socket.

# WHEEL ALIGNMENT

< PERIODIC MAINTENANCE >

---

**Toe-in** : Refer to [FSU-19, "Wheel Alignment"](#).

**CAUTION:**

- Always evenly adjust both toe-in alternately and adjust the difference between the left and right to the standard.
- Always fix the steering inner socket when tightening the steering outer socket.
- After toe-in adjustment, adjust neutral position of steering angle sensor. Refer to [BRC-49, "Work Procedure"](#) (with VDC).



# FRONT COIL SPRING AND STRUT

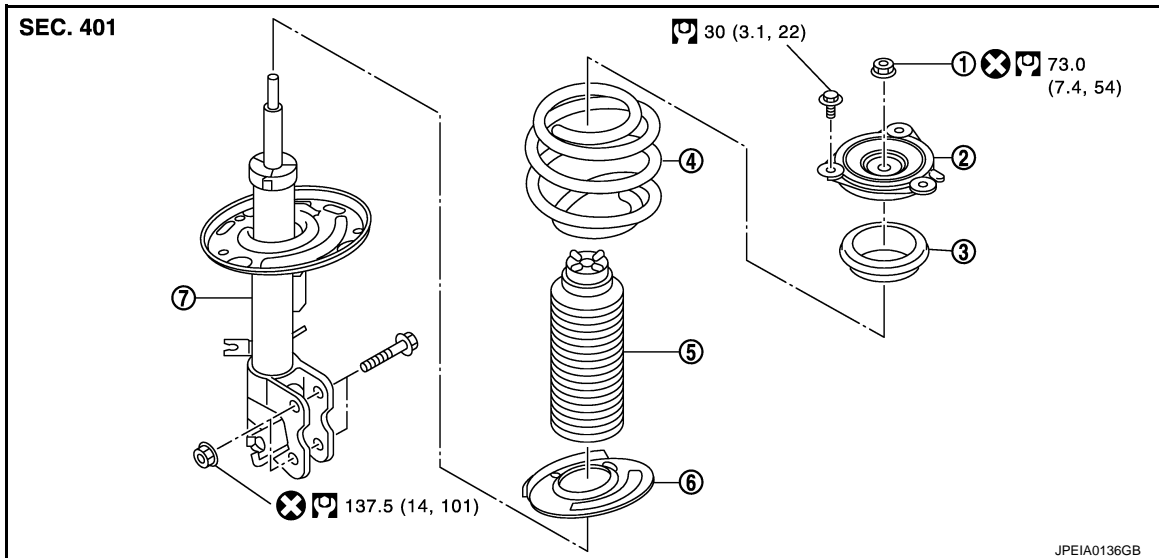
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### FRONT COIL SPRING AND STRUT

Exploded View

INFOID:000000009650667



- |                        |                       |                      |
|------------------------|-----------------------|----------------------|
| 1. Piston rod lock nut | 2. Mounting insulator | 3. Mounting bearing  |
| 4. Coil spring         | 5. Bound bumper       | 6. Lower rubber seat |
| 7. Strut               |                       |                      |

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

### Removal and Installation

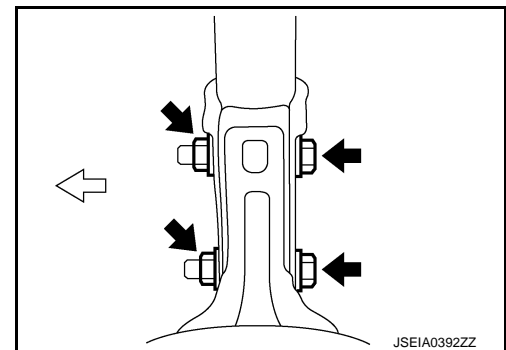
INFOID:000000009650668

#### REMOVAL

1. Remove tires with power tool. Refer to [WT-46, "Exploded View"](#).
2. Remove lock plate from strut assembly. Refer to [BR-20, "FRONT : Exploded View"](#).
3. Remove wheel sensor. Refer to [BRC-119, "FRONT WHEEL SENSOR : Removal and Installation"](#).
4. Separate stabilizer connecting rod from strut assembly. Refer to [FSU-15, "Removal and Installation"](#).
5. Remove strut mounting bolts and nuts from steering knuckle.

: Vehicle front

6. Remove cowl top extension. Refer to [EXT-22, "Removal and Installation"](#).
7. Remove mounting bolt of mounting insulator, and then remove strut assembly.



#### INSTALLATION

Note the following, and install in the reverse order of removal.

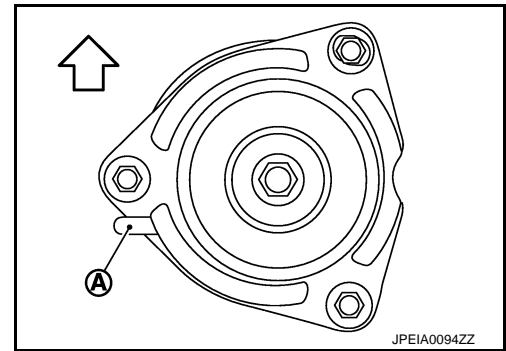
# FRONT COIL SPRING AND STRUT

## < REMOVAL AND INSTALLATION >

- Install strut assembly with the protrusion (A) of mounting insulator faced outside of the vehicle.

↔ : Vehicle front

- Never reuse strut mounting nut.
- Perform final tightening of fixing parts at the vehicle installation position (rubber bushing), under unladen conditions with tires on level ground.
- Perform inspection after installation. Refer to [FSU-11, "Inspection"](#).
- After replacing the strut, always follow the disposal procedure to discard the strut. Refer to [FSU-12, "Disposal"](#).



JPEIA0094ZZ

INFOID:000000009650669

## Disassembly and Assembly

### DISASSEMBLY

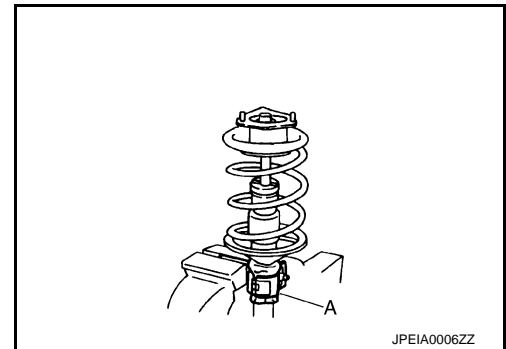
#### CAUTION:

**Never damage strut assembly piston rod when removing components from strut assembly.**

1. Install strut attachment (A) [SST: ST35652000 ( — )] to strut assembly and secure it in a vise.

#### CAUTION:

**When installing the strut attachment to strut assembly, wrap a shop cloth around strut to protect from damage.**



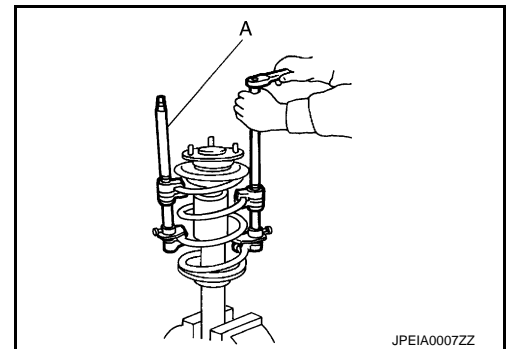
JPEIA0006ZZ

2. Using a spring compressor (A) (commercial service tool), compress coil spring between spring upper seat and lower seat (strut assembly) until coil spring with a spring compressor is free.

#### CAUTION:

**Be sure a spring compressor is securely attached to coil spring. Compress coil spring.**

3. Check coil spring with a spring compressor between spring upper seat and lower seat (strut assembly) is free. And then remove piston rod lock nut while securing the piston rod tip so that piston rod does not turn.



JPEIA0007ZZ

4. Remove mounting insulator, mounting bearing, and bound bumper from strut.

5. After removing coil spring with a spring compressor (commercial service tool), then gradually release a spring compressor.

#### CAUTION:

**Loosen while making sure coil spring attachment position does not move.**

6. Remove lower rubber seat.
7. Remove strut attachment [SST: ST35652000 ( — )] from strut.
8. Perform inspection after disassembly. Refer to [FSU-11, "Inspection"](#).

### ASSEMBLY

#### CAUTION:

**Never damage strut assembly piston rod when installing components from strut assembly.**

1. Install strut attachment [SST: ST35652000 ( — )] to strut and secure it in a vise.

#### CAUTION:

**When installing the strut attachment to strut assembly, wrap a shop cloth around strut to protect from damage.**

2. Install lower rubber seat.

# FRONT COIL SPRING AND STRUT

## < REMOVAL AND INSTALLATION >

3. Apply soapy water to bound bumper.

**CAUTION:**

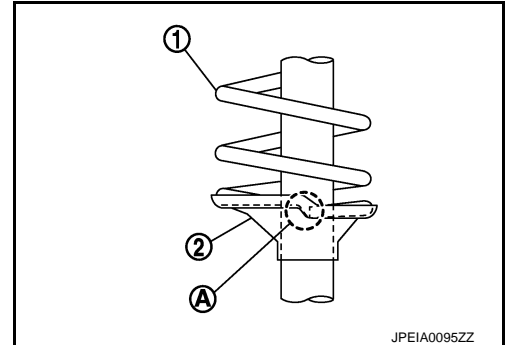
**Never use machine oil.**

4. Insert bound bumper into mounting insulator.

5. Compress coil spring using a spring compressor (commercial service tool), and install it onto strut assembly.

**CAUTION:**

- Be sure a spring compressor is securely attached to coil spring, before compress coil spring.
- Align the lower end of coil spring (1) with "A" of lower rubber seat (2) as shown in the figure.
- Set coil spring so that its paint marks are aligned with the positions of 1.25 turns and 2.25 turns from the bottom end of the coil spring.



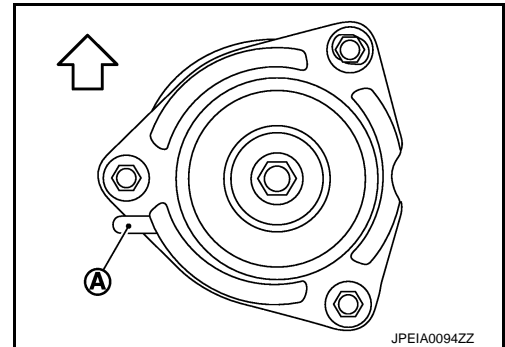
6. Check the location of protrusion (A) of the mounting insulator and install it with faced outside of the vehicle to the strut.

↔ : Vehicle front

7. Secure piston rod tip so that piston rod does not turn, then tighten piston rod lock nut with specified torque.

**CAUTION:**

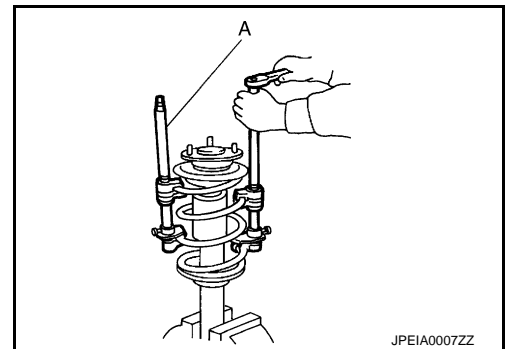
**Never reuse piston rod lock nut.**



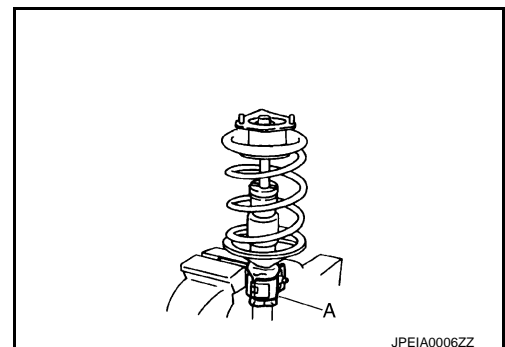
8. Gradually release a spring compressor (A) (commercial service tool), and remove coil spring.

**CAUTION:**

**Loosen while making sure coil spring attachment position does not move.**



9. Remove the strut attachment (A) [SST: ST35652000 ( — )] from strut assembly.



## Inspection

### INSPECTION AFTER DISASSEMBLY

INFOID:000000009650670

# FRONT COIL SPRING AND STRUT

## < REMOVAL AND INSTALLATION >

Check the following items, and replace the parts if necessary.

### Strut

- Strut for deformation, cracks or damage
- Piston rod for damage, uneven wear or distortion
- Oil leakage

### Strut Mounting Insulator and bound bumper

Check strut mounting insulator and bound bumper for cracks, wear or damage.

### Coil Spring

Check coil spring for cracks, wear or damage.

## INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connector. Refer to [BRC-119. "FRONT WHEEL SENSOR : Exploded View"](#).
2. Check wheel alignment. Refer to [FSU-7. "Inspection"](#).
3. Adjust neutral position of steering angle sensor. Refer to [BRC-49. "Work Procedure"](#) (with VDC).

## Disposal

INFOID:000000009650671

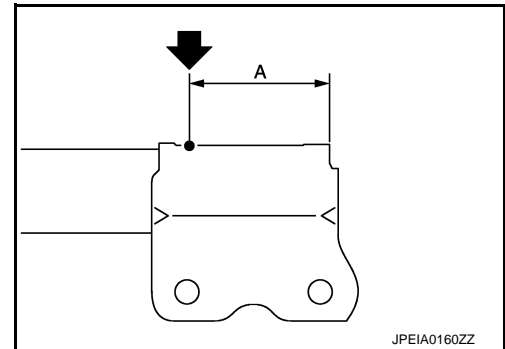
1. Set strut assembly horizontally to the ground with the piston rod fully extracted.
2. Drill 2 – 3 mm (0.08 – 0.12 in) hole at the position (●) from top as shown in the figure to release gas gradually.

### CAUTION:

- Wear eye protection (safety glasses).
- Wear gloves.
- Be careful with metal chips or oil blown out by the compressed gas.

### NOTE:

- Drill vertically in this direction show by arrow.
- Directly to the outer tube avoiding brackets.
- The gas is clear, colorless, odorless, and harmless.



**A : 20 – 30 mm (0.79 – 1.18 in)**

3. Position the drilled hole downward and drain oil by moving the piston rod several times.

### CAUTION:

**Dispose of drained oil according to the law and local regulations.**

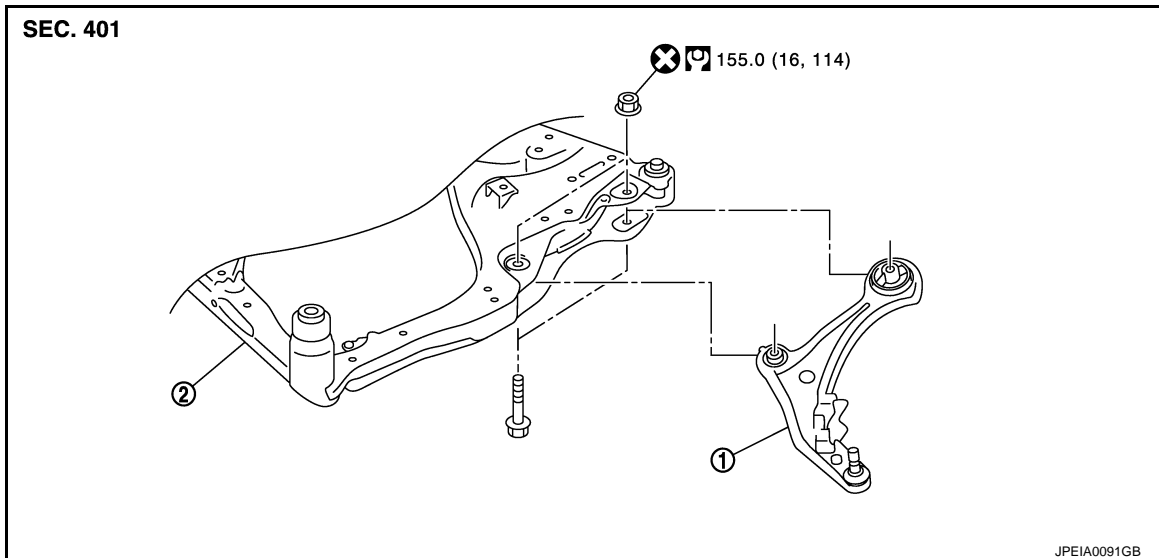
# TRANSVERSE LINK

< REMOVAL AND INSTALLATION >

## TRANSVERSE LINK

### Exploded View

INFOID:000000009650672



1. Transverse link
2. Front suspension member

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

### Removal and Installation

INFOID:000000009650673

#### REMOVAL

1. Remove tires with power tool. Refer to [WT-46, "Exploded View"](#).
2. Remove drive shaft from wheel hub assembly.
  - Left side: Refer to [FAX-18, "LEFT SIDE : Removal and Installation"](#).
  - Right side: Refer to [FAX-19, "RIGHT SIDE : Removal and Installation"](#).
3. Separate transverse link from steering knuckle. Refer to [FAX-9, "Exploded View"](#).
4. Remove transverse link from suspension member.

#### INSTALLATION

Note the following, and install in the reverse order of removal.

- Never reuse transverse link mounting nut.
- Perform final tightening of bolts and nuts at the vehicle installation position (rubber bushing), under unladen conditions with tires on level ground.
- Perform inspection after installation. Refer to [FSU-13, "Inspection"](#).

### Inspection

INFOID:000000009650674

#### INSPECTION AFTER REMOVAL

Check the following items, and replace the parts if necessary.

##### Transverse Link

- Transverse link and bushing for deformation, cracks or damage.
- Ball joint boot for cracks or other damage, and also for grease leakage.

##### Swing Torque

1. Manually move ball stud to confirm it moves smoothly with no binding.
2. Move ball stud at least ten times by hand to check for smooth movement.

## TRANSVERSE LINK

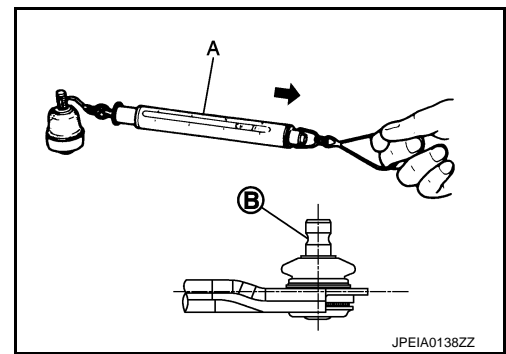
### < REMOVAL AND INSTALLATION >

- Hook a spring balance (A) at cutout on ball stud (B). Confirm spring balance measurement value is within specifications when ball stud begins moving.

**Swing torque** : Refer to [FSU-21, "Ball Joint"](#).

**Measurement on spring balance** : Refer to [FSU-21, "Ball Joint"](#).

- If swing torque exceeds standard range, replace transverse link assembly.



### Axial End Play

- Move ball stud at least ten times by hand to check for smooth movement.
- Move tip of ball stud in axial direction to check for looseness.

**Axial end play** : Refer to [FSU-21, "Ball Joint"](#).

- If axial end play exceeds the standard value, replace transverse link assembly.

### INSPECTION AFTER INSTALLATION

- Check wheel sensor harness for proper connector. Refer to [BRC-119, "FRONT WHEEL SENSOR : Exploded View"](#).
- Check wheel alignment. Refer to [FSU-7, "Inspection"](#).
- Adjust neutral position of steering angle sensor. Refer to [BRC-49, "Work Procedure"](#) (with VDC).

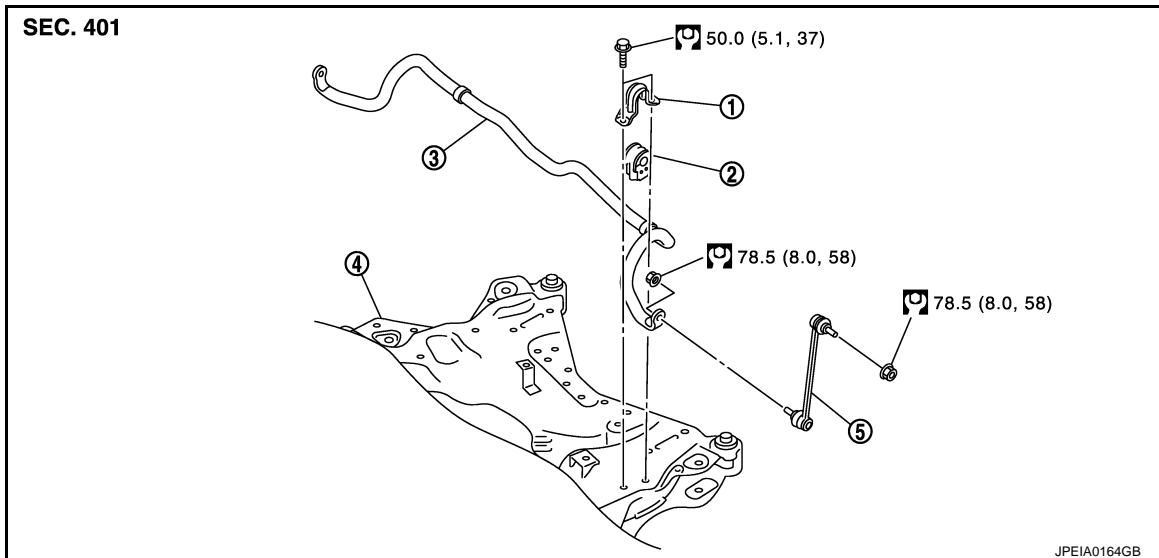
# FRONT STABILIZER

< REMOVAL AND INSTALLATION >


## FRONT STABILIZER

Exploded View

INFOID:000000009650675




- |                            |                              |                   |
|----------------------------|------------------------------|-------------------|
| 1. Stabilizer clamp        | 2. Stabilizer bushing        | 3. Stabilizer bar |
| 4. Front suspension member | 5. Stabilizer connecting rod |                   |

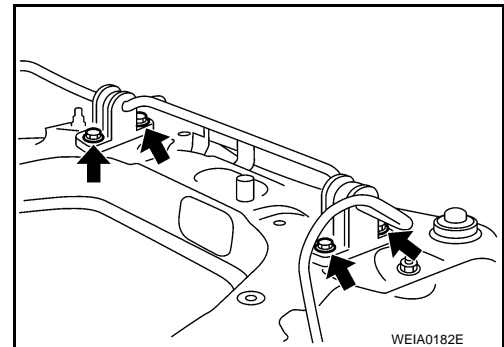
: N·m (kg-m, ft-lb)

## Removal and Installation

INFOID:000000009650676

### REMOVAL

1. Remove tires with power tool. Refer to [WT-46. "Exploded View"](#).
2. Remove exhaust front tube. Refer to [EX-6. "Removal and Installation"](#).
3. Remove wheel sensor harness from strut assembly. Refer to [BRC-119. "FRONT WHEEL SENSOR : Removal and Installation"](#).
4. Separate steering outer socket from steering knuckle. Refer to [ST-22. "Removal and Installation"](#).
5. Remove stabilizer connecting rod.
6. Remove drive shaft (right side). Refer to [FAX-19. "RIGHT SIDE : Removal and Installation"](#).
7. Remove mounting bolts () of stabilizer clamp, and then remove stabilizer clamp and stabilizer bushing from front suspension member.
8. Remove stabilizer bar.
9. Perform inspection after removal. Refer to [FSU-16. "Inspection"](#).



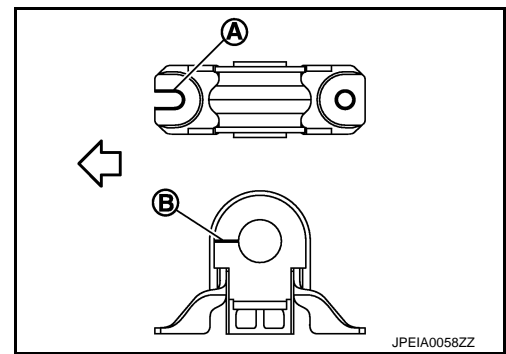
### INSTALLATION

Note the following, and install in the reverse order of removal.

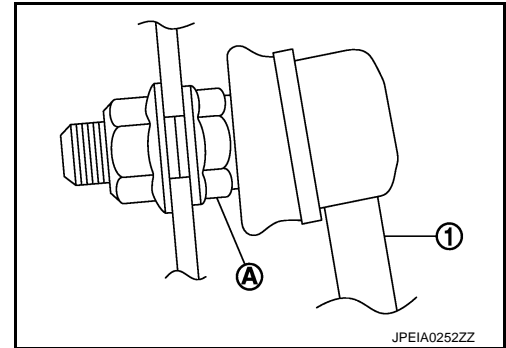
## FRONT STABILIZER

### < REMOVAL AND INSTALLATION >

- Install stabilizer clamp and stabilizer bush with notch (A) and slit (B) faced forward of the vehicle (⇐).



- To install stabilizer connecting rod (1), tighten the mounting nut with the hexagonal part (A) on the stabilizer connecting rod side fixed.
- Perform final tightening of bolts and nuts at the vehicle installation position (rubber bushing), under unladen conditions with tires on level ground.
- Perform inspection after installation. Refer to [FSU-13, "Inspection"](#).



### Inspection

INFOID:000000009650677

#### INSPECTION AFTER REMOVAL

Check stabilizer bar, stabilizer connecting rod, stabilizer bushing and stabilizer clamp for deformation, cracks or damage. Replace it if necessary.

#### INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connector. Refer to [BRC-119, "FRONT WHEEL SENSOR : Exploded View"](#).
2. Check wheel alignment. Refer to [FSU-7, "Inspection"](#).
3. Adjust neutral position of steering angle sensor. Refer to [BRC-49, "Work Procedure"](#) (with VDC).



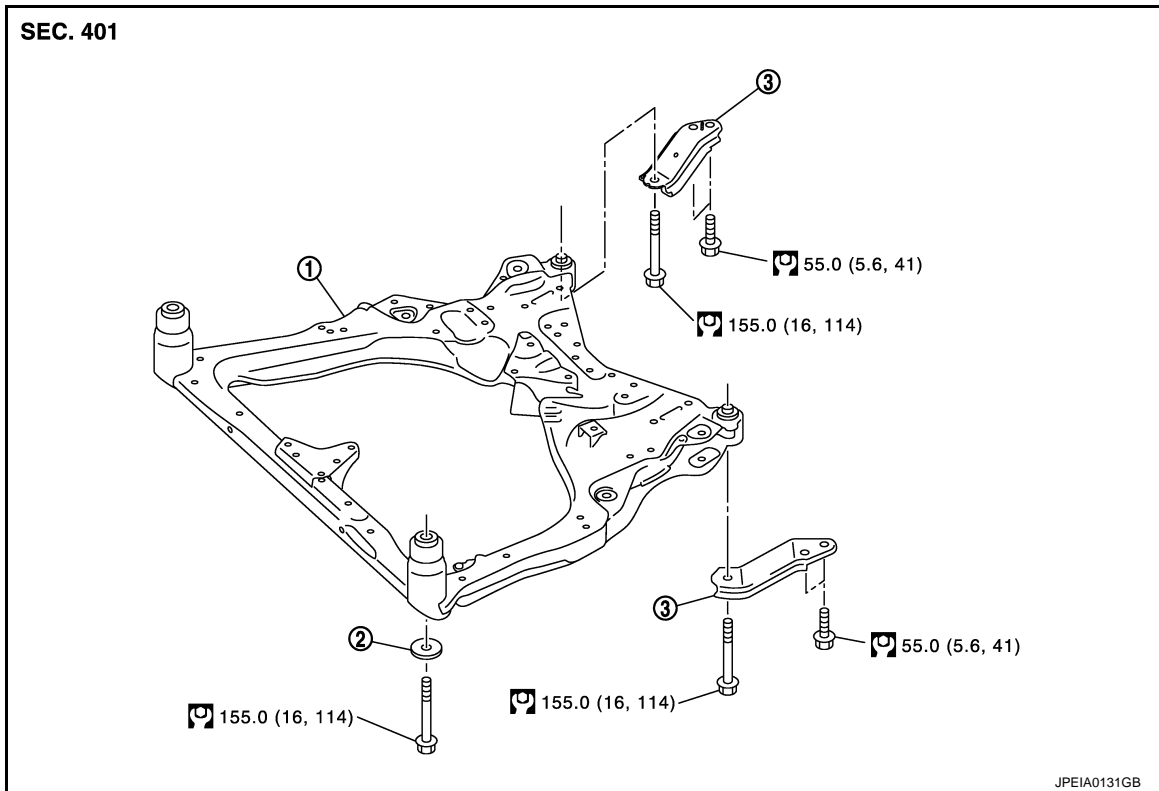
# FRONT SUSPENSION MEMBER

< REMOVAL AND INSTALLATION >

## FRONT SUSPENSION MEMBER

Exploded View

INFOID:000000009650678



1. Front suspension member
2. Rebound stopper
3. Front suspension member stay

: N·m (kg-m, ft-lb)

## Removal and Installation

INFOID:000000009650679

### REMOVAL

1. Remove tires with power tool. Refer to [WT-46, "Exploded View"](#).
2. Remove the engine and the transaxle assembly from the vehicle together with the front suspension member. Refer to [EM-56, "Removal and Installation"](#).
3. Remove the following parts from front suspension member.
  - Engine assembly: Refer to [EM-56, "Removal and Installation"](#).
  - Transaxle assembly: Refer to [TM-174, "Removal and Installation"](#).
  - Steering gear assembly: Refer to [ST-22, "Removal and Installation"](#).
  - Steering hydraulic line: Refer to [ST-35, "Exploded View"](#).
  - Stabilizer bar: Refer to [FSU-15, "Removal and Installation"](#).
  - Transverse link: Refer to [FSU-13, "Removal and Installation"](#).
4. Perform inspection after removal. Refer to [FSU-13, "Inspection"](#).

### INSTALLATION

Note the following, and install in the reverse order of removal.

- Perform final tightening of bolts and nuts at the vehicle installation position (rubber bushing), under unladen conditions with tires on level ground.
- Perform inspection after installation. Refer to [FSU-13, "Inspection"](#).

## Inspection

INFOID:000000009650680

## INSPECTION AFTER REMOVAL

## FRONT SUSPENSION MEMBER

### < REMOVAL AND INSTALLATION >

---

Check front suspension member for cracks, wear or damage. Replace it if necessary.

### INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connector. Refer to [BRC-119, "FRONT WHEEL SENSOR : Exploded View"](#).
2. Check wheel alignment. Refer to [FSU-7, "Inspection"](#).
3. Adjust neutral position of steering angle sensor. Refer to [BRC-49, "Work Procedure"](#) (with VDC).

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Wheel Alignment

INFOID:0000000009650681

#### FOR USA MODELS

| Item  |   | Standard                          |                       |  |
|---|---|-----------------------------------|-----------------------|--|
|   |   | Left side                         | Right side            |  |
| Camber<br>Degree minute (Decimal degree)              | Minimum   | -1° 00' (-1.00°)                  | -1° 15' (-1.25°)      |  |
|   | Nominal   | -0° 15' (-0.25°)                  | -0° 30' (-0.50°)      |  |
|   | Maximum   | 0° 30' (0.50°)                    | 0° 15' (0.25°)        |  |
|   | Left and right difference*1                       | -0° 18' (-0.30°) - 0° 48' (0.80°) |                       |  |
| Caster<br>Degree minute (Decimal degree)              | Minimum   | 3° 55' (3.92°)                    | 4° 05' (4.09°)        |  |
|   | Nominal   | 4° 40' (4.67°)                    | 4° 50' (4.83°)        |  |
|   | Maximum   | 5° 25' (5.41°)                    | 5° 35' (5.58°)        |  |
|   | Left and right difference*1                       | -0° 18' (-0.30°) - 0° 48' (0.80°) |                       |  |
| Kingpin inclination<br>Degree minute (Decimal degree) | Minimum   | 12° 00' (12.00°)                  |                       |  |
|   | Nominal   | 12° 45' (12.75°)                  |                       |  |
|   | Maximum   | 13° 30' (13.50°)                  |                       |  |
| Toe-in  | Total toe-in<br>Distance                          | Minimum                           | Out 1.4 mm (0.055 in) |  |
|   |   | Nominal                           | In 0.6 mm (0.024 in)  |  |
|   |   | Maximum                           | In 2.6 mm (0.102 in)  |  |
|   | Total toe-angle<br>Degree minute (Decimal degree) | Minimum                           | In 0° 00' (In 0.0°)   |  |
|   |   | Nominal                           | In 0° 08' (In 0.13°)  |  |
|   |   | Maximum                           | In 0° 16' (In 0.27°)  |  |

Measure value under unladen\*2 conditions.

\*1: A difference when assuming the left side a standard.

\*2: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

#### FOR CANADA MODELS

#### For 3.5S Grade

| Item  |                             | Standard                          |                  |
|---|-----------------------------|-----------------------------------|------------------|
|   |                             | Left side                         | Right side       |
| Camber<br>Degree minute (Decimal degree)              | Minimum                     | -1° 00' (-1.00°)                  | -1° 15' (-1.25°) |
|   | Nominal                     | -0° 15' (-0.25°)                  | -0° 30' (-0.50°) |
|   | Maximum                     | 0° 30' (0.50°)                    | 0° 15' (0.25°)   |
|   | Left and right difference*1 | -0° 18' (-0.30°) - 0° 48' (0.80°) |                  |
| Caster<br>Degree minute (Decimal degree)              | Minimum                     | 3° 50' (3.84°)                    | 4° 05' (4.09°)   |
|   | Nominal                     | 4° 35' (4.58°)                    | 4° 50' (4.83°)   |
|   | Maximum                     | 5° 20' (5.33°)                    | 5° 35' (5.58°)   |
|   | Left and right difference*1 | -0° 18' (-0.30°) - 0° 48' (0.80°) |                  |
| Kingpin inclination<br>Degree minute (Decimal degree) | Minimum                     | 12° 00' (12.00°)                  |                  |
|   | Nominal                     | 12° 45' (12.75°)                  |                  |
|   | Maximum                     | 13° 30' (13.50°)                  |                  |

# SERVICE DATA AND SPECIFICATIONS (SDS)

## < SERVICE DATA AND SPECIFICATIONS (SDS)

| Item   |   |         | Standard              |            |
|--------|---|---------|-----------------------|------------|
|        |   |         | Left side             | Right side |
| Toe-in | Total toe-in<br>Distance                          | Minimum | Out 1.4 mm (0.055 in) |            |
|        |   | Nominal | In 0.6 mm (0.024 in)  |            |
|        |   | Maximum | In 2.6 mm (0.102 in)  |            |
|        | Total toe-angle<br>Degree minute (Decimal degree) | Minimum | In 0° 00' (In 0.0°)   |            |
|        |   | Nominal | In 0° 08' (In 0.13°)  |            |
|        |   | Maximum | In 0° 16' (In 0.27°)  |            |

Measure value under unladen\*2 conditions.

\*1: A difference when assuming the left side a standard.

\*2: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

For 3.5SV Grade

| Item  |   |                                   | Standard              |            |
|---|---|-----------------------------------|-----------------------|------------|
|   |   |                                   | Left side             | Right side |
| Camber<br>Degree minute (Decimal degree)              | Minimum   | -1° 00' (-1.00°)                  | -1° 15' (-1.25°)      |            |
|   | Nominal   | -0° 15' (-0.25°)                  | -0° 30' (-0.50°)      |            |
|   | Maximum   | 0° 30' (0.50°)                    | 0° 15' (0.25°)        |            |
|   | Left and right difference*1                       | -0° 18' (-0.30°) - 0° 48' (0.80°) |                       |            |
| Caster<br>Degree minute (Decimal degree)              | Minimum   | 3° 50' (3.84°)                    | 4° 00' (4.00°)        |            |
|   | Nominal   | 4° 35' (4.58°)                    | 4° 45' (4.75°)        |            |
|   | Maximum   | 5° 20' (5.33°)                    | 5° 30' (5.50°)        |            |
|   | Left and right difference*1                       | -0° 18' (-0.30°) - 0° 48' (0.80°) |                       |            |
| Kingpin inclination<br>Degree minute (Decimal degree) | Minimum   | 12° 00' (12.00°)                  |                       |            |
|   | Nominal   | 12° 45' (12.75°)                  |                       |            |
|   | Maximum   | 13° 30' (13.50°)                  |                       |            |
| Toe-in  | Total toe-in<br>Distance                          | Minimum                           | Out 1.4 mm (0.055 in) |            |
|   |   | Nominal                           | In 0.6 mm (0.024 in)  |            |
|   |   | Maximum                           | In 2.6 mm (0.102 in)  |            |
|   | Total toe-angle<br>Degree minute (Decimal degree) | Minimum                           | In 0° 00' (In 0.0°)   |            |
|   |   | Nominal                           | In 0° 08' (In 0.13°)  |            |
|   |   | Maximum                           | In 0° 16' (In 0.27°)  |            |

Measure value under unladen\*2 conditions.

\*1: A difference when assuming the left side a standard.

\*2: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

For 3.5SL and 3.5LE Grade

| Item                                     |                             |                                   | Standard         |            |
|--|-----------------------------|-----------------------------------|------------------|------------|
|  |                             |                                   | Left side        | Right side |
| Camber<br>Degree minute (Decimal degree) | Minimum                     | -1° 00' (-1.00°)                  | -1° 15' (-1.25°) |            |
|  | Nominal                     | -0° 15' (-0.25°)                  | -0° 30' (-0.50°) |            |
|  | Maximum                     | 0° 30' (0.50°)                    | 0° 15' (0.25°)   |            |
|  | Left and right difference*1 | -0° 18' (-0.30°) - 0° 48' (0.80°) |                  |            |

# SERVICE DATA AND SPECIFICATIONS (SDS)

## < SERVICE DATA AND SPECIFICATIONS (SDS)

| Item  |   | Standard                          |                       |  |
|---|---|-----------------------------------|-----------------------|--|
|   |   | Left side                         | Right side            |  |
| Caster<br>Degree minute (Decimal degree)              | Minimum   | 3° 55' (3.92°)                    | 4° 05' (4.09°)        |  |
|   | Nominal   | 4° 40' (4.67°)                    | 4° 50' (4.83°)        |  |
|   | Maximum   | 5° 25' (5.41°)                    | 5° 35' (5.58°)        |  |
|   | Left and right difference*1                       | -0° 18' (-0.30°) - 0° 48' (0.80°) |                       |  |
| Kingpin inclination<br>Degree minute (Decimal degree) | Minimum   | 12° 00' (12.00°)                  |                       |  |
|   | Nominal   | 12° 45' (12.75°)                  |                       |  |
|   | Maximum   | 13° 30' (13.50°)                  |                       |  |
| Toe-in  | Total toe-in<br>Distance                          | Minimum                           | Out 1.4 mm (0.055 in) |  |
|   |   | Nominal                           | In 0.6 mm (0.024 in)  |  |
|   |   | Maximum                           | In 2.6 mm (0.102 in)  |  |
|   | Total toe-angle<br>Degree minute (Decimal degree) | Minimum                           | In 0° 00' (In 0.0°)   |  |
|   |   | Nominal                           | In 0° 08' (In 0.13°)  |  |
|   |   | Maximum                           | In 0° 16' (In 0.27°)  |  |

Measure value under unladen\*2 conditions.

\*1: A difference when assuming the left side a standard.

\*2: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

## Ball Joint

INFOID:000000009650682

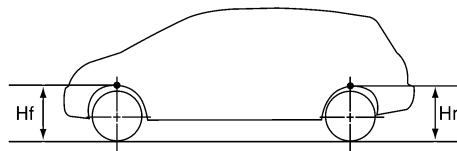
| Item                          | Standard                                       |
|-------------------------------|--|
| Swing torque                  | 0.5 – 4.9 N·m (0.06 – 0.49 kg-m, 5 – 43 in-lb) |
| Measurement on spring balance | 11.1 – 108.9 N (1.2 – 11.1 kg, 3 – 24 lb)      |
| Axial end play                | 0 mm (0 in)                                    |

## Wheelarch Height

INFOID:000000009650683

### FOR USA MODELS

| Item       | Standard          |       |                   |                   |
|------------|-------------------|-------|-------------------|-------------------|
|            | 3.5S              | 3.5SV | 3.5SL             | 3.5LE             |
| Front (Hf) | 760 mm (29.92 in) |       | 769 mm (30.28 in) | 770 mm (30.31 in) |
| Rear (Hr)  | 751 mm (29.57 in) |       | 760 mm (29.92 in) | 759 mm (29.88 in) |



WEIA0030E

Measure value under unladen\* conditions.

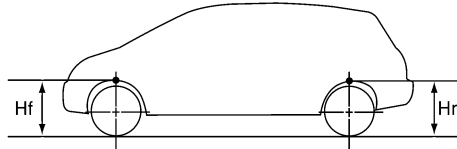
\*: Fuel, engine coolant and lubricant are full. Spare tire, jack, hand tools and mats are in designated positions.

### FOR CANADA MODELS

# SERVICE DATA AND SPECIFICATIONS (SDS)

## < SERVICE DATA AND SPECIFICATIONS (SDS)

| Item       | Standard          |                   |                   |       |
|------------|-------------------|-------------------|-------------------|-------|
|            | 3.5S              | 3.5SV             | 3.5SL             | 3.5LE |
| Grade      |                   |                   |                   |       |
| Front (Hf) | 760 mm (29.92 in) |                   | 770 mm (30.31 in) |       |
| Rear (Hr)  | 752 mm (29.61 in) | 751 mm (29.57 in) | 760 mm (29.92 in) |       |



WEIA0030E

Measure value under unladen\* conditions.

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