

SECTION FSU

FRONT SUSPENSION

CONTENTS

PRECAUTION	2	TRANSVERSE LINK	10
PRECAUTIONS	2	Exploded View	10
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	2	Removal and Installation	10
Precaution for Procedure without Cowl Top Cover.....	2	Inspection	10
Precaution for Suspension	2	FRONT STABILIZER	12
PREPARATION	3	Exploded View	12
PREPARATION	3	Removal and Installation	12
Special Service Tools	3	Inspection	13
Commercial Service Tools	3	UNIT REMOVAL AND INSTALLATION	14
SYMPTOM DIAGNOSIS	5	FRONT SUSPENSION MEMBER	14
NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING	5	Exploded View	14
NVH Troubleshooting Chart	5	Removal and Installation	14
PERIODIC MAINTENANCE	6	Inspection	15
FRONT SUSPENSION ASSEMBLY	6	UNIT DISASSEMBLY AND ASSEMBLY ...	16
Inspection	6	FRONT COIL SPRING AND STRUT	16
WHEEL ALIGNMENT	7	Exploded View	16
Inspection	7	Disassembly and Assembly	16
Adjustment	8	Inspection	19
REMOVAL AND INSTALLATION	9	Disposal	19
FRONT COIL SPRING AND STRUT	9	SERVICE DATA AND SPECIFICATIONS (SDS)	20
Exploded View	9	SERVICE DATA AND SPECIFICATIONS (SDS)	20
Removal and Installation	9	Wheel Alignment (Unladen* ¹)	20
		Ball Joint	20
		Wheelarch Height (Unladen*)	21

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:0000000012430294

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. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.
- Do not 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

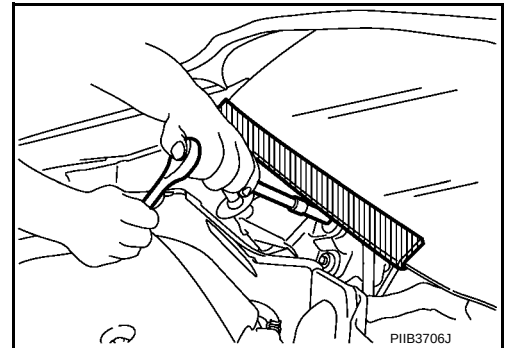
WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT 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 three minutes before performing any service.

Precaution for Procedure without Cowl Top Cover

INFOID:0000000012430295

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



Precaution for Suspension

INFOID:0000000012430296

- 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.
- When jacking up the vehicle with a floor jack, do not hang the jack on the torque rod.

PREPARATION

< PREPARATION >

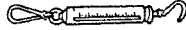
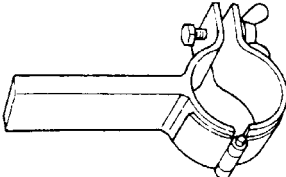
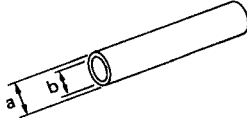
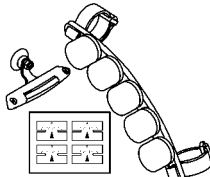
PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000012430297

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-44372) Pull Gauge	Measuring ball joint swinging force
 LST024	
ST35652000 (—) Strut attachment	Disassembling and assembling strut
 ZZA0807D	
KV10106700 (—) Drift	Disassembling and assembling strut mount bearing a: 25 mm (0.98 in) dia. b: 18.5 mm (0.728 in) dia.
 ZZA0534D	
— (J-49286) Drift and pull gauge	Measuring drift and pull
 AWEIA0156ZZ	

Commercial Service Tools

INFOID:0000000012430298

Tool name	Description
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A
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FSU

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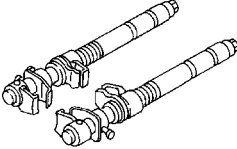
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PREPARATION

< PREPARATION >

Spring compressor	Removing and installing coil spring
 S-NT717	
Power tool	Loosening nuts, screws and bolts
 PIIB1407E	

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000012430299

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

Reference			FSU-6, FSU-10, FSU-13, FSU-15	FSU-19	—	—	FSU-19	FSU-6, FSU-10, FSU-13, FSU-15	FSU-7	FSU-13	FAX-6	WT-45	WT-44	FAX-8	BR-7	ST-7
Possible cause and SUSPECTED PARTS			Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mount deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	Stabilizer bar fatigue	FRONT AXLE	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
		Shudder	x	x	x						x	x	x		x	x
		Poor quality ride or handling	x	x	x	x	x		x	x	x	x	x			

x: Applicable

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FSU

cardiagn.com

FRONT SUSPENSION ASSEMBLY

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

FRONT SUSPENSION ASSEMBLY

Inspection

INFOID:000000012430300

COMPONENT PART

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

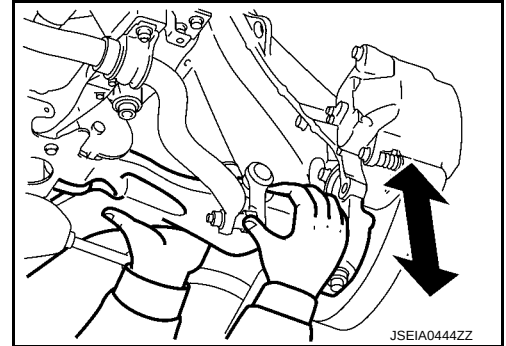
Ball Joint Axial End Play

1. Set the front wheels in a straight-ahead position.
2. Hold the axle side of the transverse link, and check the axial end play by move the transverse link up and down.

Axial end play : Refer to [FSU-20, "Ball Joint"](#).

CAUTION:

- Do not depress the brake pedal when measuring.
- Do not perform this inspection with the tires on the ground.
- Be careful not to damage ball joint boot. Do not damage the components by applying excessive force.



STRUT ASSEMBLY

Check for oil leaks or damage. Replace the parts if necessary.

WHEEL ALIGNMENT

< PERIODIC MAINTENANCE >

WHEEL ALIGNMENT

Inspection

INFOID:000000012430301

PRELIMINARY INSPECTION

WARNING:

Always adjust the wheel alignment with the vehicle on a flat surface.

NOTE:

If the wheel alignment is out of specification, inspect and replace any damaged or worn rear suspension parts before making any adjustments.

1. Check and adjust the wheel alignment with the vehicle under unladen conditions. "Unladen conditions" means that the fuel, engine coolant, and lubricants are full; the spare tire, jack, hand tools and mats are in designated positions.
2. Check the tires for incorrect air pressure and excessive wear.
3. Check the wheels for run out and damage. Refer to [WT-54, "Wheel"](#).
4. Check the wheel bearing axial end play. Refer to [FAX-27, "Wheel Bearing"](#).
5. Check the shock absorbers for leaks or damage.
6. Check each mount point of the suspension components for any excessive looseness or damage.
7. Check each link, arm, and the suspension member for any damage.
8. Check the vehicle height. Refer to [FSU-21, "Wheelarch Height \(Unladen*\)"](#).

GENERAL INFORMATION AND RECOMMENDATIONS

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

ALIGNMENT PROCESS

IMPORTANT: Use only the alignment specifications listed in this Service Manual. Refer to [FSU-20, "Wheel Alignment \(Unladen*¹\)"](#).

- When displaying the alignment settings, many alignment machines use "indicators": (Green/red, plus or minus, Go/No Go). **Do NOT use these indicators.**
- The alignment specifications programmed into your alignment machine that operate these indicators may not be correct.
- This may result in an ERROR.
- Most camera-type alignment machines are equipped with "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 in either direction.

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.

CAMBER, CASTER AND KINGPIN INCLINATION ANGLES INSPECTION

- Camber, caster, kingpin inclination angles cannot be adjusted.
- Before inspection, set the front wheels onto a turning radius gauge. Set the rear wheels onto a pad that has the same height so the vehicle will remain horizontal.

TOTAL TOE-IN INSPECTION

Measure the total toe-in using the following procedure.

A

B

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FSU

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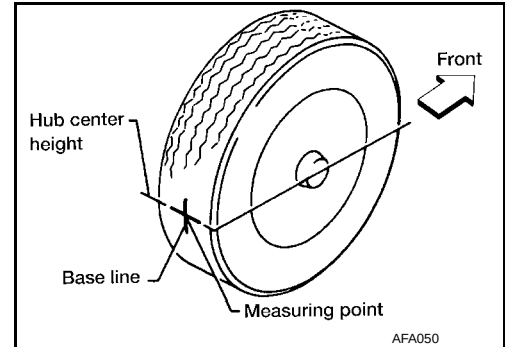
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WHEEL ALIGNMENT

< PERIODIC MAINTENANCE >

WARNING:

- Always perform the following procedure on a flat surface.
 - Make sure that no person is in front of vehicle before pushing it.
1. Bounce the front of vehicle up and down to stabilize the vehicle height (posture).
 2. Push on the rear wheel to move the vehicle straight ahead about 5 m (16 ft).
 3. Put a mark on base line of the tread (rear side) of each tire at the same height of hub center. These are measuring points.

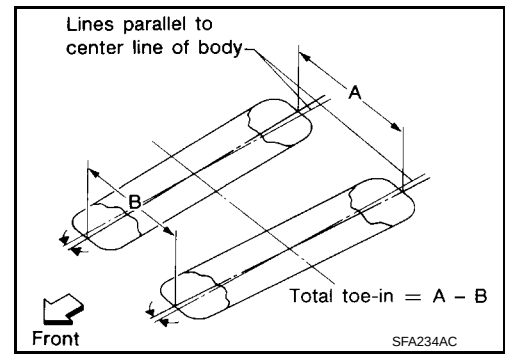


4. Measure the distance (A) from the rear side.
5. Push on the rear wheel to move the vehicle slowly ahead and to rotate the wheels 180 degrees (1/2 turn).

CAUTION:

If the wheels have rotated more than 180 degrees (1/2 turn), try the above procedure again from the beginning. Do not push vehicle backward.

6. Measure the distance (B) from the front side.



7. Use the formula below to calculate total toe-in.

Total toe-in : A - B

Total toe-in specification : Refer to [FSU-20, "Wheel Alignment \(Unladen*¹\)"](#).

- If the total toe-in is outside the specification, adjust the total toe-in. Refer to [FSU-8, "Adjustment"](#).

Adjustment

INFOID:0000000012430302

TOTAL TOE-IN

Loosen the steering outer socket. Adjust the length using the steering inner socket.

Toe-in : Refer to [FSU-20, "Wheel Alignment \(Unladen*¹\)"](#).

CAUTION:

- Always evenly adjust toe-in alternately and adjust the difference between the left and right to the standard.
- Always hold the steering inner socket when tightening the steering outer socket.

FRONT COIL SPRING AND STRUT

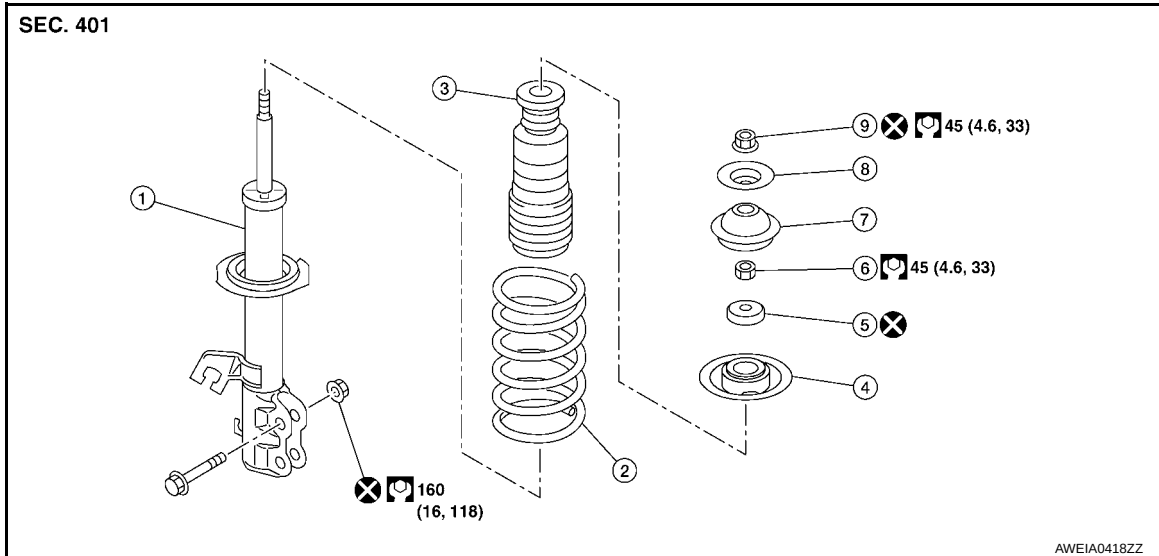
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FRONT COIL SPRING AND STRUT

Exploded View

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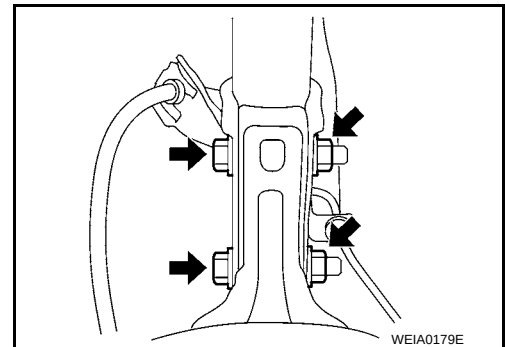
- | | | |
|--------------------------|------------------------|-------------------------------|
| 1. Strut | 2. Coil spring | 3. Bound bumper |
| 4. Spring upper seat | 5. Strut mount bearing | 6. Piston rod lock nut |
| 7. Strut mount insulator | 8. Stopper insulator | 9. Stopper insulator lock nut |

Removal and Installation

INFOID:0000000012430304

REMOVAL

1. Remove the wheel and tire using power tool. Refer to [WT-48, "Removal and Installation"](#).
2. Remove brake hose lock plate from strut.
3. Disconnect stabilizer connecting rod from strut. Refer to [FSU-12, "Exploded View"](#).
4. Remove strut bolts and nuts from steering knuckle.
5. Remove stopper insulator lock nut and stopper insulator.
6. Remove strut.



INSTALLATION

Installation is in the reverse order of removal.

- Secure the head of strut piston rod to keep it from rotating, then tighten the stopper insulator lock nut to the specified torque.

CAUTION:

- **Do not reuse stopper insulator lock nut.**
- **Do not reuse the nuts that secure the strut to the steering knuckle.**
- Perform inspection after installation. Refer to [FSU-19, "Inspection"](#).
- After replacing the strut, always follow the disposal procedure to discard the strut. Refer to [FSU-19, "Disposal"](#).

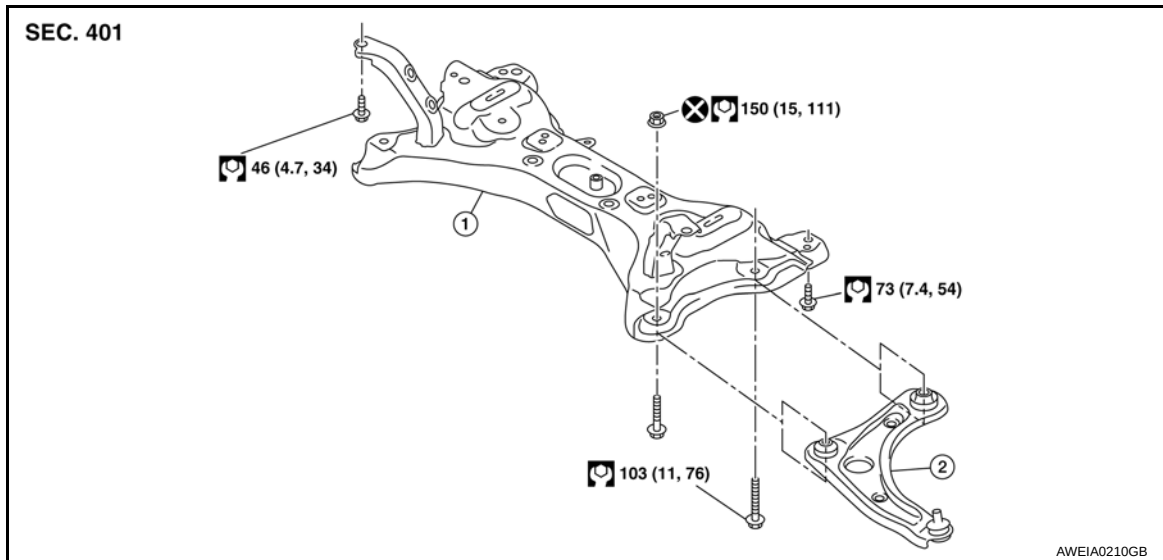
TRANSVERSE LINK

< REMOVAL AND INSTALLATION >

TRANSVERSE LINK

Exploded View

INFOID:0000000012430305



1. Front suspension member
2. Transverse link

Removal and Installation

INFOID:0000000012430306

REMOVAL

1. Remove the wheel and tire using power tool. Refer to [WT-48, "Removal and Installation"](#).
2. Separate transverse link from steering knuckle. Refer to [FAX-9, "Exploded View"](#)
3. Remove the bolts and nut, then remove the transverse link from front suspension member.
4. Inspect the components. Refer to [FSU-10, "Inspection"](#)

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not reuse the transverse link nuts.

- Perform the final tightening of the nuts and bolts under unladen conditions with tires on level ground.
- Complete the inspection. Refer to [FSU-10, "Inspection"](#).

Inspection

INFOID:0000000012430307

INSPECTION AFTER REMOVAL

Check the following items and replace the components as necessary.

Transverse link

- Check the transverse link and bushing for deformation, cracks or damage.
- Check the ball joint boot for cracks or other damage, and also for grease leakage.

Swing Torque

1. Move the ball stud at least ten times by hand to check for smooth movement with no binding.

TRANSVERSE LINK

< REMOVAL AND INSTALLATION >

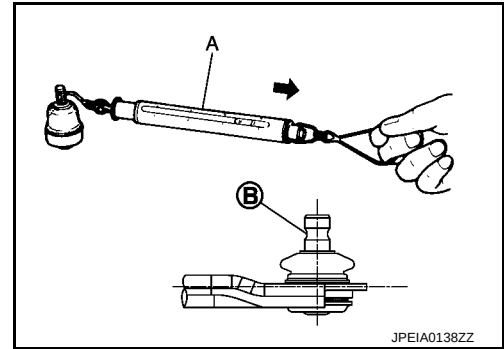
- Hook the Tool (A) on the ball joint (B). Confirm the measurement value is within specifications when the ball stud begins moving.

Tool number (A) : — (J-44372)

Swing torque : Refer to [FSU-20, "Ball Joint"](#).

Rotating torque : Refer to [FSU-20, "Ball Joint"](#).

If swing torque or rotating torque exceeds the specified range, replace transverse link.



Axial End Play

- Move the ball stud at least ten times by hand to check for smooth movement with no binding.
- Move the tip of the ball joint in the axial direction to check for looseness.

Axial end play : Refer to [FSU-20, "Ball Joint"](#).

If the axial end play exceeds the specified range, replace transverse link.

INSPECTION AFTER INSTALLATION

- Check wheel alignment. Refer to [FSU-20, "Wheel Alignment \(Unladen*1\)"](#).
- Perform the steering angle sensor neutral position adjustment. Refer to [BRC-55, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description"](#).

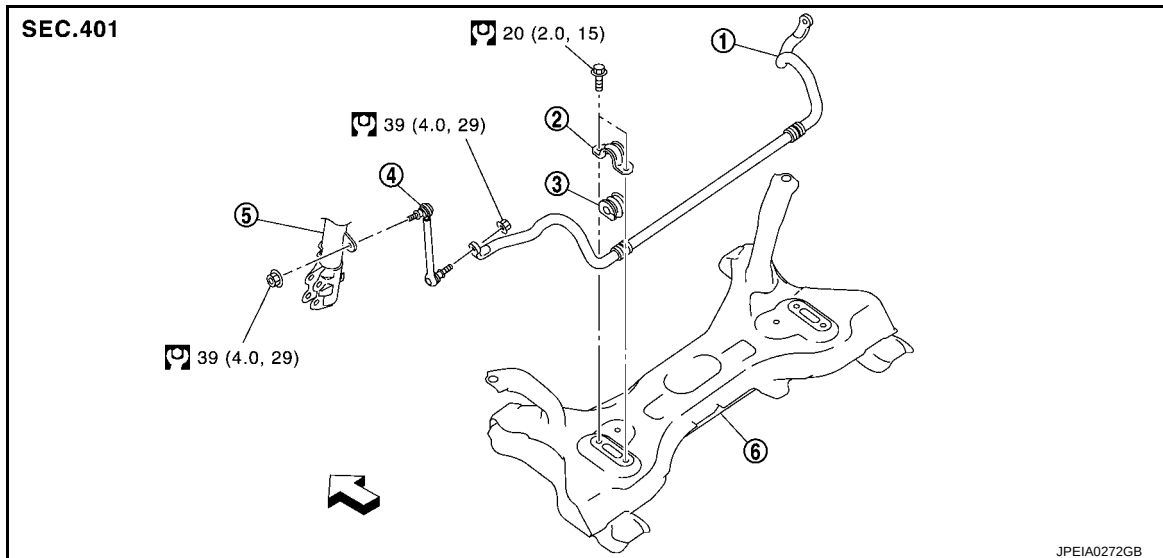
FRONT STABILIZER

< REMOVAL AND INSTALLATION >

FRONT STABILIZER

Exploded View

INFOID:0000000012430308



- | | | |
|------------------------------|---------------------|----------------------------|
| 1. Stabilizer bar | 2. Stabilizer clamp | 3. Stabilizer bushing |
| 4. Stabilizer connecting rod | 5. Strut | 6. Front suspension member |

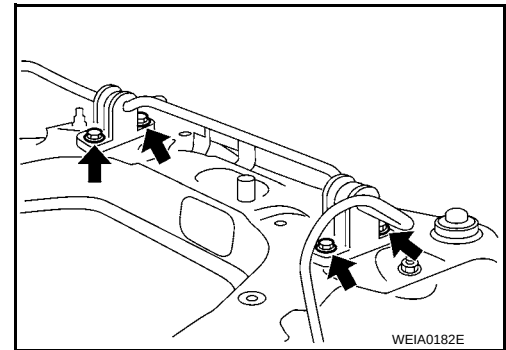
↩ Front

Removal and Installation

INFOID:0000000012430309

REMOVAL

1. Remove wheel and tire using power tool. Refer to [WT-48, "Removal and Installation"](#).
2. Remove the nuts, then separate the stabilizer connecting rod from the stabilizer bar.
3. Remove the front suspension member. Refer to [FSU-14, "Removal and Installation"](#).
4. Remove the stabilizer clamp bolts, stabilizer clamps and stabilizer bushings from front suspension member.
5. Remove stabilizer bar.



6. Inspect the components. Refer to [FSU-13, "Inspection"](#).

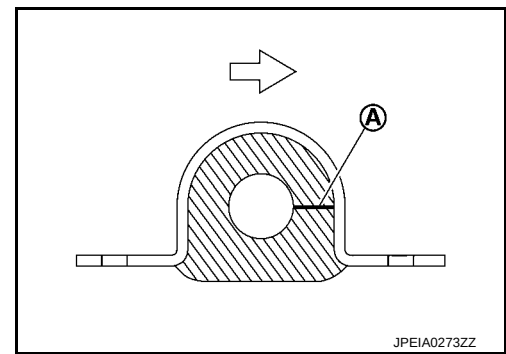
INSTALLATION

Installation is in the reverse order of removal.

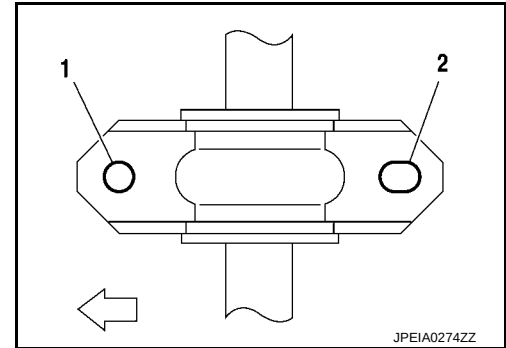
FRONT STABILIZER

< REMOVAL AND INSTALLATION >

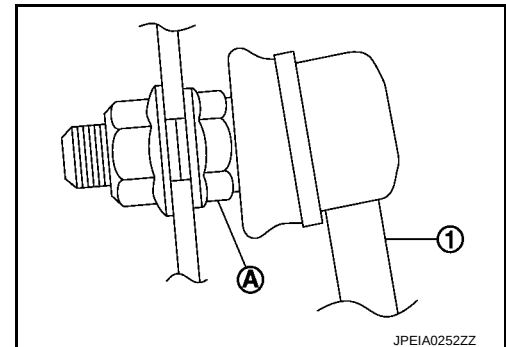
- Install the stabilizer bushing with the slit (A) facing the rear of the vehicle.
⇐: Rear



- To install stabilizer clamp bolt, temporarily tighten them in numerical order as shown, then tighten them to the specified torque. Refer to [FSU-12, "Exploded View"](#).
⇐: Front



- To connect the stabilizer connecting rod (1), tighten the nut while holding the hexagonal part (A) on the stabilizer connecting rod.



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

Inspection

INFOID:0000000012430310

INSPECTION AFTER REMOVAL

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

INSPECTION AFTER INSTALLATION

1. Check the wheel alignment. Refer to [FSU-7, "Inspection"](#).
2. Perform the steering angle sensor neutral position adjustment. Refer to [BRC-55, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description"](#).

FRONT SUSPENSION MEMBER

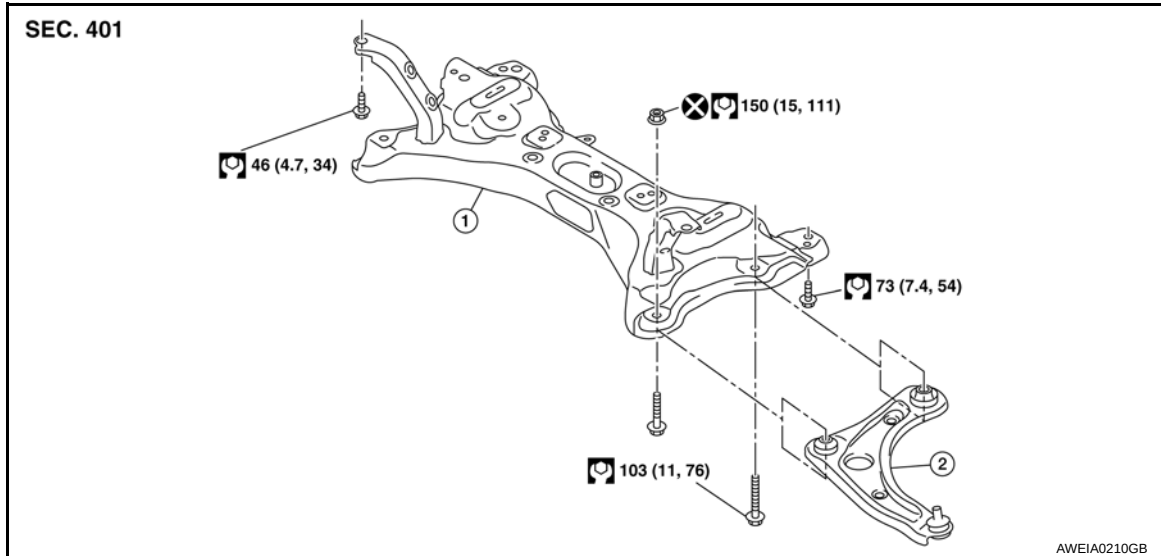
< UNIT REMOVAL AND INSTALLATION >

UNIT REMOVAL AND INSTALLATION

FRONT SUSPENSION MEMBER

Exploded View

INFOID:0000000012430311



1. Front suspension member
2. Transverse link

Removal and Installation

INFOID:0000000012430312

REMOVAL

1. Remove the wheel and tire using power tool. Refer to [WT-48, "Removal and Installation"](#).
2. Disconnect steering outer sockets from steering knuckles. Refer to [ST-14, "Exploded View"](#).
3. Disconnect transverse links from steering knuckle. Refer to [FSU-10, "Exploded View"](#).
4. Disconnect stabilizer connecting rods from stabilizer bar. Refer to [FSU-12, "Exploded View"](#).
5. Disconnect the lower joint from the steering gear. Refer to [ST-12, "Exploded View"](#).
6. Set suitable jack under front suspension member.
CAUTION:
Do not damage the front suspension member with suitable jack.
7. Remove the engine rear torque rod. Refer to [EM-86, "Exploded View"](#).
8. Remove suspension member bolts.
9. Gradually lower the jack to remove front suspension member from vehicle body.
10. If necessary, remove steering gear from front suspension member. Refer to [ST-14, "Removal and Installation"](#).
11. If necessary, remove transverse links. Refer to [FSU-10, "Removal and Installation"](#).
12. If necessary, remove stabilizer bar, stabilizer bar clamps, and stabilizer bushings. Refer to [FSU-12, "Removal and Installation"](#).
13. Inspect the front suspension member. Refer to [FSU-15, "Inspection"](#).

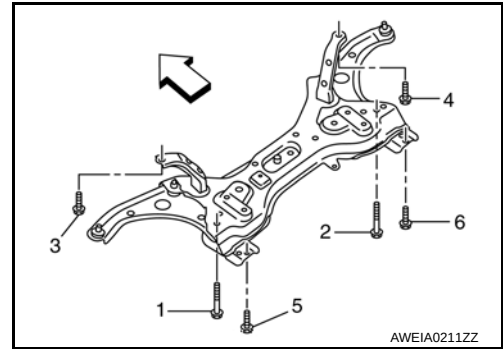
INSTALLATION

Installation is in the reverse order of removal.

FRONT SUSPENSION MEMBER

< UNIT REMOVAL AND INSTALLATION >

- Install the member stay bolts, the upper link bolts, and the front suspension member bolts in the order of 1-6 as shown.
- ⇐: Front



- After installation, perform the final tightening of each part under unladen conditions with tires on level ground.
- Complete the inspection. [FSU-15, "Inspection"](#)

Inspection

INFOID:0000000012430313

INSPECTION AFTER REMOVAL

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

INSPECTION AFTER INSTALLATION

1. Check the wheel sensor harness to be sure the connectors are fully seated.
2. Check the neutral position of the steering angle sensor. Refer to [BRC-55, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description"](#).
3. Check the wheel alignment. Refer to [FSU-7, "Inspection"](#).

FRONT COIL SPRING AND STRUT

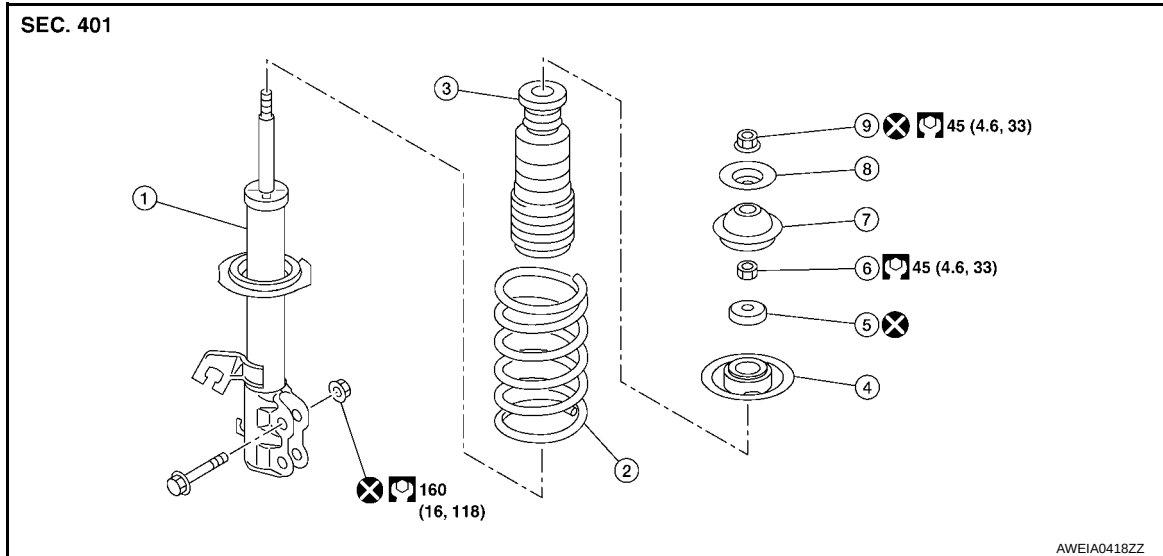
< UNIT DISASSEMBLY AND ASSEMBLY >

UNIT DISASSEMBLY AND ASSEMBLY

FRONT COIL SPRING AND STRUT

Exploded View

INFOID:0000000012430314



Disassembly and Assembly

INFOID:0000000012430315

DISASSEMBLY

CAUTION:

Do not damage strut piston rod when removing components from strut.

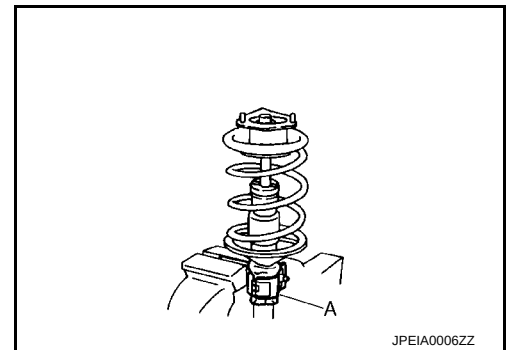
1. Remove strut mount insulator.
2. Install Tool (A) to the front coil spring and strut.

CAUTION:

When installing Tool (A), wrap a shop cloth around the front coil spring and strut to protect the parts from damage.

Tool number (A) : ST35652000 (—)

3. Secure Tool (A) in a vise.



4. Slightly loosen the piston rod lock nut.

WARNING:

Do not remove the piston rod lock nut completely. If the piston rod lock nut is removed completely, the coil spring can jump out and may cause serious damage or injury.

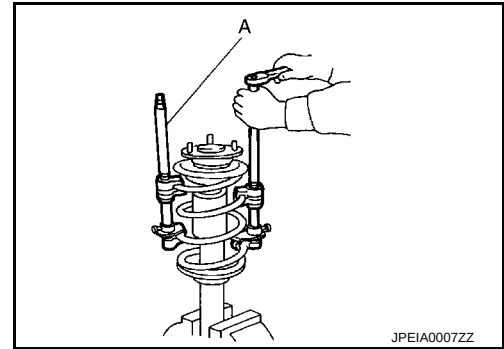
FRONT COIL SPRING AND STRUT

< UNIT DISASSEMBLY AND ASSEMBLY >

5. Compress coil spring using a suitable tool (A).

WARNING:

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



6. Make sure the coil spring is free between the spring upper seat and the strut.
7. Hold the piston rod and remove the piston rod lock nut.
8. Remove strut mount bearing, spring upper seat, and bound bumper as a set.
9. Remove bound bumper from spring upper seat.
10. Gradually release the suitable tool and remove the coil spring.

CAUTION:

Release the suitable tool while making sure the position of the suitable tool on the coil spring does not move.

11. Remove the Tool from strut.

Tool number : ST35652000 (—)

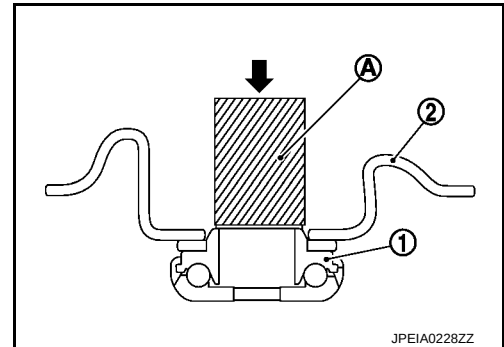
12. If necessary, remove strut mount bearing (1) from spring upper seat (2), using a Tool (A).

Tool number (A) : KV10106700 (—)

CAUTION:

Do not disassemble the strut mount bearing unless damage exists.

13. Inspect the components. Refer to [FSU-19, "Inspection"](#).



ASSEMBLY

CAUTION:

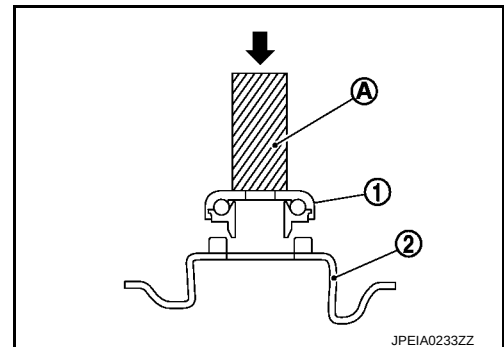
Do not damage the piston rod when removing components from the front coil spring and strut.

1. If necessary, install strut mount bearing (1) to spring upper seat (2), using a Tool (A).

Tool number (A) : KV10106700 (—)

CAUTION:

- Do not press on aluminum shield.
- Do not reuse strut mount bearing.



FRONT COIL SPRING AND STRUT

< UNIT DISASSEMBLY AND ASSEMBLY >

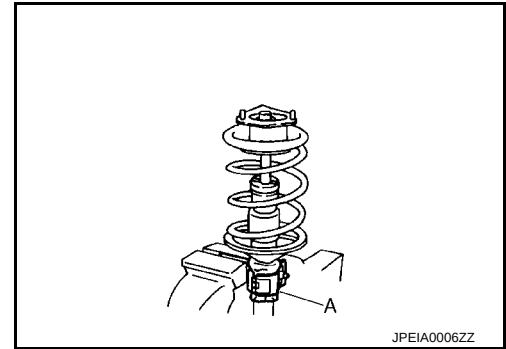
2. Install Tool (A) to the front coil spring and strut.

CAUTION:

When installing Tool (A), wrap a shop cloth around the front coil spring and strut to protect the parts from damage.

Tool number (A) : ST35652000 (—)

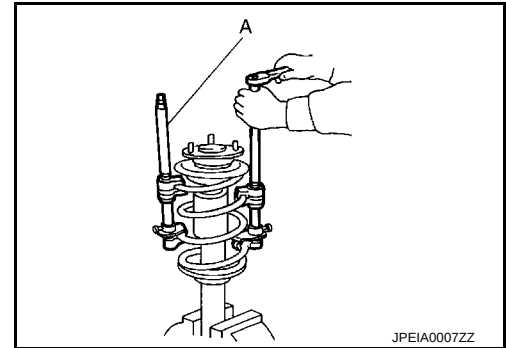
3. Secure Tool (A) in a vise.



4. Compress coil spring using a suitable tool (A).

WARNING:

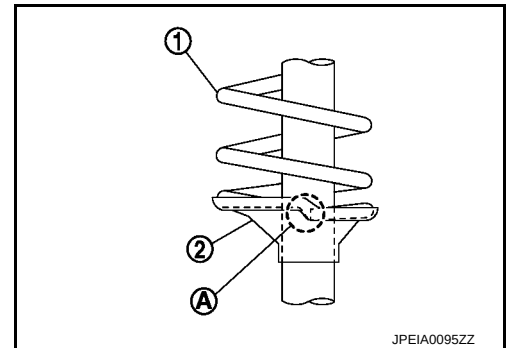
Make sure that the pawls of the suitable tool are firmly hooked on the coil spring. The suitable tool must be tightened alternately so as to not tilt the coil spring.



CAUTION:

Face tube side of coil spring (1) downward. Align the lower end to lower seat (2).

Maximum gap (A) : 5 mm (0.2 in)



5. Apply soapy water to bound bumper.

CAUTION:

Do not use machine oil.

6. Insert bound bumper into spring upper seat.

7. Install strut mount bearing, spring upper seat, and bound bumper as a set.

CAUTION:

Do not apply oil, such as grease, when installing the strut mount bearing.

8. Secure piston rod tip so that piston rod does not turn, then install piston rod lock nut and tighten to the specified torque.

CAUTION:

Do not reuse piston rod lock nut.

9. Gradually release the suitable tool, and remove the suitable tool from the coil spring.

CAUTION:

Release the suitable tool while making sure the position of the suitable tool on the coil spring does not move.

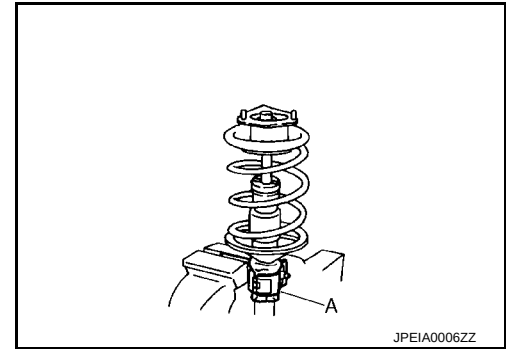
FRONT COIL SPRING AND STRUT

< UNIT DISASSEMBLY AND ASSEMBLY >

10. Remove the Tool (A) from the vise.

Tool number (A) : ST35652000 (—)

11. Remove Tool (A) from the front coil spring and strut.
12. Install strut mount insulator.
13. After replacing the strut, always follow the disposal procedure to discard the old strut. Refer to [FSU-19, "Disposal"](#).



INFOID:0000000012430316

Inspection

INSPECTION AFTER DISASSEMBLY

Check the following items and replace the parts if necessary.

Strut

- Check the strut for oil leaks, deformation, cracks, or damage.
- Check the piston rod for damage, uneven wear, or distortion.

Strut Mount Insulator and bound bumper

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

Coil Spring

Check the coil spring for cracks, wear, or damage.

INSPECTION AFTER INSTALLATION

1. Check the wheel sensor harness to be sure the connectors are fully seated.
2. Check the neutral position of the steering angle sensor. Refer to [BRC-55, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description"](#).
3. Check the wheel alignment. Refer to [FSU-7, "Inspection"](#).

Disposal

INFOID:0000000012430317

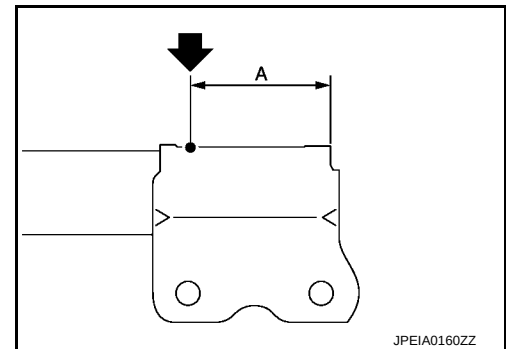
1. Set the strut horizontally with the piston rod fully extended.
2. Drill a 2 – 3 mm (0.08 – 0.12 in) hole at the position (●) from top as shown to release gas gradually.

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 (←).
- 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.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

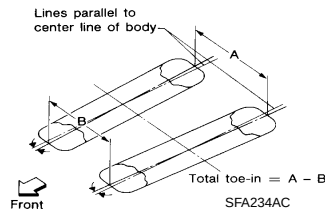
SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Alignment (Unladen*¹)

INFOID:0000000012430318

Camber Degree minute (Decimal degree)	Minimum	-0° 50' (-0.83°)
	Nominal	-0° 05' (-0.08°)
	Maximum	0° 40' (0.67°)
	(LH) and (RH) difference* ²	-0° 45' (-0.75°) - 0° 45' (0.75°)
Caster Degree minute (Decimal degree)	Minimum	3° 00' (3.00°)
	Nominal	3° 45' (3.75°)
	Maximum	4° 30' (4.50°)
	(LH) and (RH) difference* ²	-0° 45' (-0.75°) - 0° 45' (0.75°)
Kingpin inclination Degree minute (Decimal degree)	Minimum	11° 00' (11.00°)
	Nominal	11° 45' (11.75°)
	Maximum	12° 30' (12.50°)



Total toe-in	Distance (A - B)	Minimum	Out 1 mm (Out 0.04 in)
		Nominal	In 1 mm (In 0.04 in)
		Maximum	In 3 mm (In 0.12 in)
	Angle (LH and RH) Degree minute (Decimal degree)	Minimum	Out 0° 05' (Out 0.08°)
		Nominal	In 0° 05' (In 0.08°)
		Maximum	In 0° 15' (In 0.24°)

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

*2: The difference when assuming the (LH) side is the standard.

Ball Joint

INFOID:0000000012430319

Swing torque	0.5 – 3.4 N·m (0.05 – 0.35 kg-m, 4 – 30 in-lb)
Rotating torque	15.4 – 104.7 N (1.6 – 10.7 kg-f, 3.5 – 23.5 lb-f)
Axial end play	0.1 mm (0.004 in)

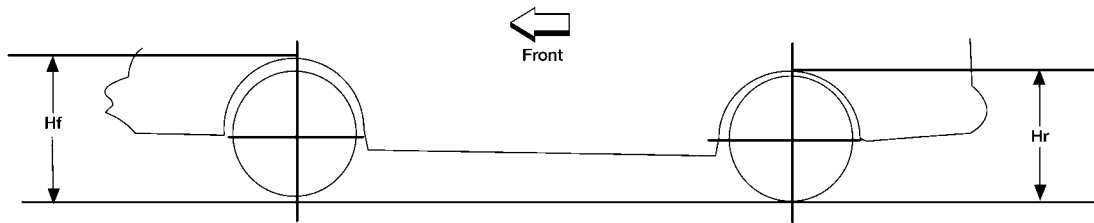
SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

Wheelarch Height (Unladen*)

INFOID:0000000012430320

Unit: mm (in)



LEIA0085E

Tire size	185/65R15	195/55R16
Front (Hf)	692 (27.24)	691 (27.20)
Rear (Hr)	678 (26.69)	677 (26.65)

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