SECTION FSU
FRONT SUSPENSION

CONTENTS

PRECAUTION 2

PRECAUTIONS 2
- Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 2
- Precaution for Procedure without Cowl Top Cover 2
- Precautions for Suspension 2
- Precautions for Removing Battery Terminal 3

PREPARATION 4

PREPARATION 4
- Special Service Tools 4
- Commercial Service Tools 4

SYMPTOM DIAGNOSIS 5

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING 5
- NVH Troubleshooting Chart 5

PERIODIC MAINTENANCE 6

FRONT SUSPENSION ASSEMBLY 6
- Inspection 6

WHEEL ALIGNMENT 7
- Inspection 7
- Adjustment 7

REMOVAL AND INSTALLATION 9

FRONT COIL SPRING AND STRUT 9
- Exploded View 9
- Removal and Installation 9
- Disassembly and Assembly 10
- Inspection 11
- Disposal 12

TRANSVERSE LINK 13
- Exploded View 13
- Removal and Installation 13
- Inspection 13

FRONT STABILIZER 15
- Exploded View 15
- Removal and Installation 15
- Inspection 16

FRONT SUSPENSION MEMBER 17
- Exploded View 17
- Removal and Installation 17
- Inspection 17

SERVICE DATA AND SPECIFICATIONS (SDS) 19

SERVICE DATA AND SPECIFICATIONS (SDS) 19
- Wheel Alignment 19
- Ball Joint 19
- Wheelarch Height 19

PRECAUTION

PRECAUTIONS

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

INFOID:0000000012404789

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:

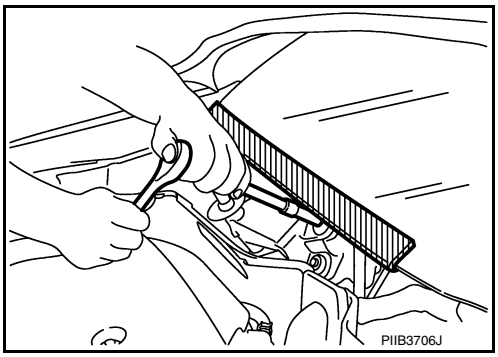
Always observe the following items for preventing accidental activation.

- **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:0000000012404790

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:0000000012404791

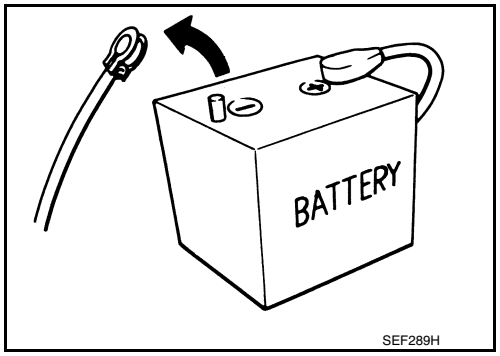
- When installing rubber bushings, the final tightening must be carried out under unladen conditions with tires on ground. Spilled oil might shorten the life of rubber bushings. Be sure to wipe off any spilled oil.
- Unladen conditions mean that fuel, engine coolant and lubricant are full. Spare tire, 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 for Removing Battery Terminal

INFOID:0000000013040832

When disconnecting the battery terminal, pay attention to the following.
- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		
YD25DDTi	: 2 minutes		



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.
- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.
- 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.

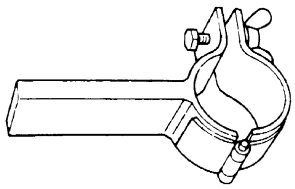
PREPARATION

PREPARATION

Special Service Tools

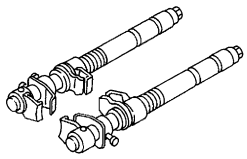
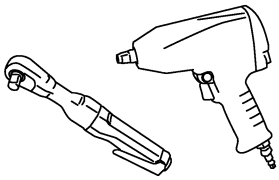
INFOID:0000000012404793

The actual shapes of TechMate tools may differ from those of special service tools illustrated here.

Tool number (TechMate No.) Tool name	Description
ST35652000 (—) Strut attachment  ZZA0807D	Disassembling and assembling strut

Commercial Service Tools

INFOID:0000000012404794

Tool name	Description
Spring compressor  S-NT717	Removing and installing coil spring
Power tool  PBIC0190E	Loosening bolts and nuts

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000012404795

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

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
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	×	×	×	×	×	×			×	×	×	×	×	×
		Shake	×	×	×	×		×			×	×	×	×	×	×
		Vibration	×	×	×	×	×				×	×		×		×
		Shimmy	×	×	×	×			×		×	×	×		×	×
		Judder	×	×	×						×	×	×		×	×
		Poor quality ride or handling	×	×	×	×	×		×	×	×	×	×			

×: Applicable

PERIODIC MAINTENANCE

FRONT SUSPENSION ASSEMBLY

Inspection

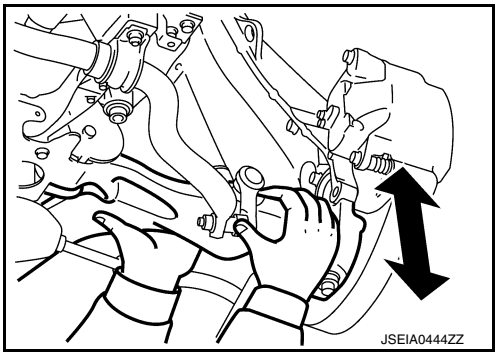
INFOID:0000000012404796

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-19, "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

Inspection

INFOID:0000000012404797

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-55, "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:0000000012404798

TOE-IN

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

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.**

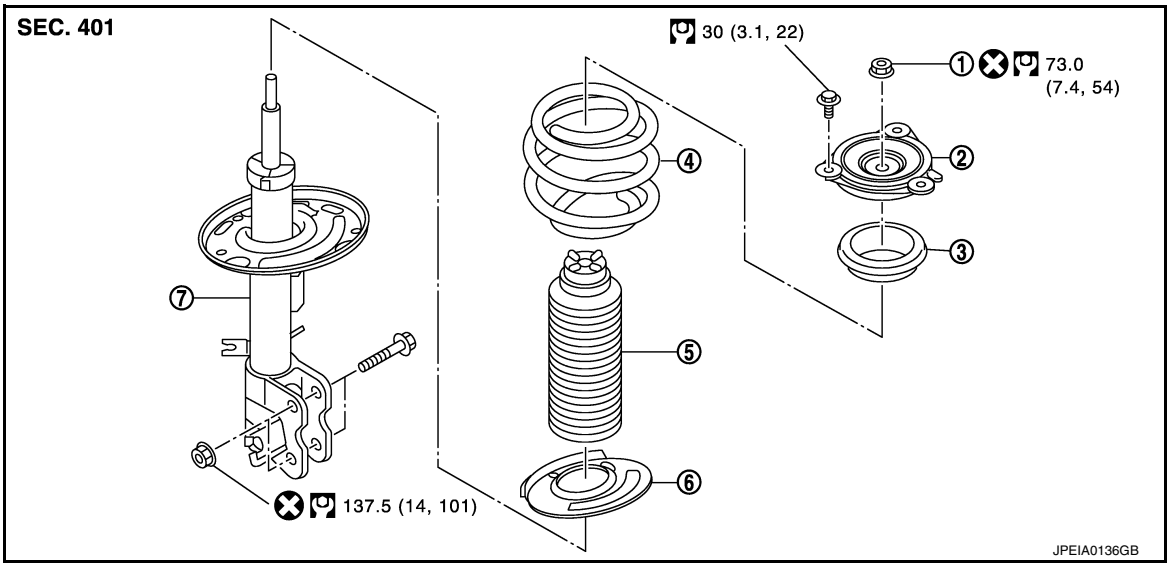
- After toe-in adjustment, adjust neutral position of steering angle sensor. Refer to BRC-50, "Work Procedure" (with VDC).

REMOVAL AND INSTALLATION

FRONT COIL SPRING AND STRUT

Exploded View

INFOID:0000000012404799



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.

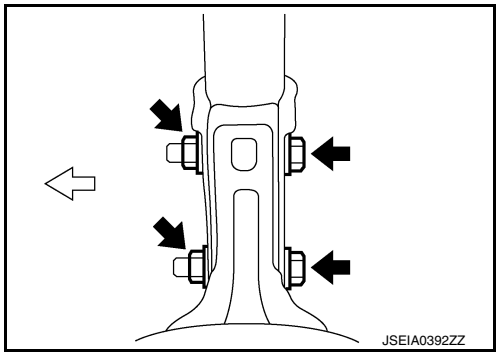
Removal and Installation

INFOID:0000000012404800

REMOVAL

1. Remove tires with power tool. Refer to WT-46, "Exploded View".
2. Remove lock plate from strut assembly. Refer to BR-22, "FRONT : Exploded View".
3. Remove wheel sensor. Refer to BRC-135, "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



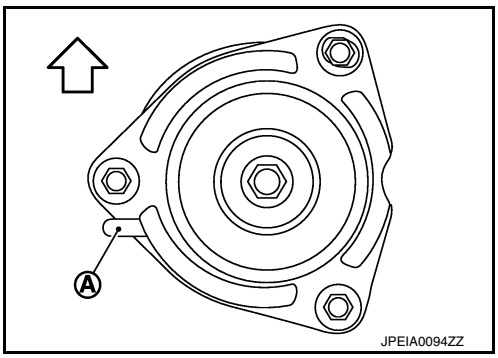
6. Remove cowl top extension. Refer to EXT-22, "Removal and Installation".
7. Remove mounting bolt of mounting insulator, and then remove strut assembly.

INSTALLATION

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

- 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".

Disassembly and Assembly

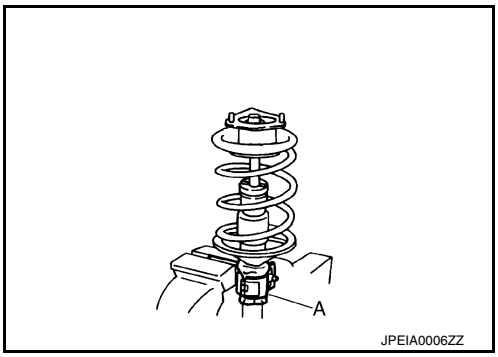
INFOID:0000000012404801

DISASSEMBLY

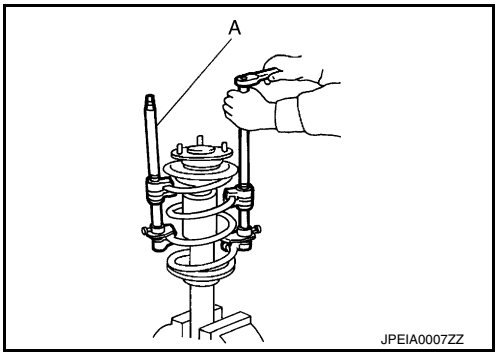
CAUTION:

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.



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.
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".

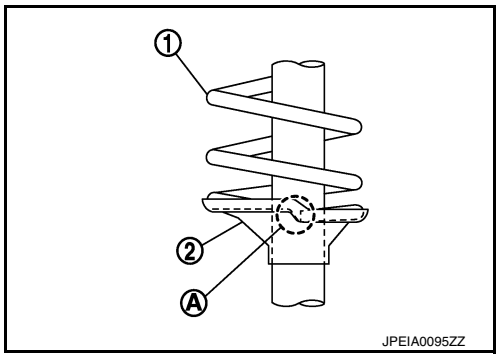
ASSEMBLY

CAUTION:

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

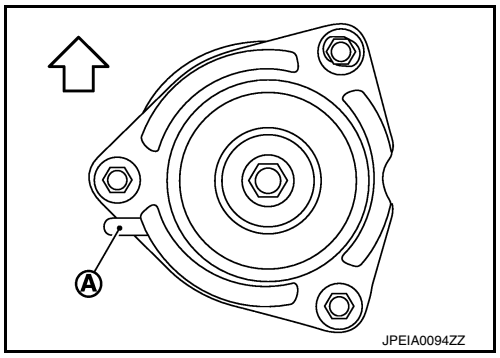
1. Install strut attachment [SST: ST35652000 (—)] to strut and secure it in a vise.
   CAUTION:
   When installing the strut attachment to strut assembly, wrap a shop cloth around strut to protect from damage.
2. Install lower rubber seat.

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.**



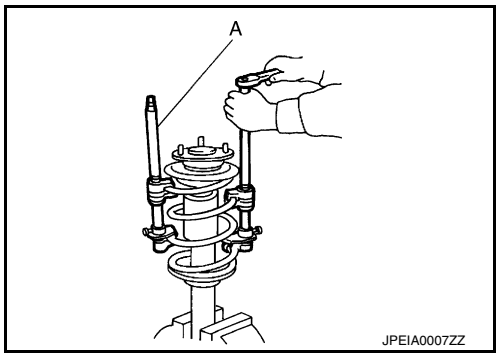
6. Check the location of protrusion (A) of the mounting insulator and install it with faced outside of the vehicle to the strut.

⇦ : Vehicle front

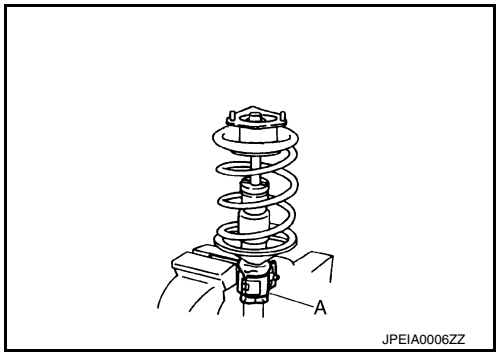


7. Secure piston rod tip so that piston rod does not turn, then tighten piston rod lock nut with specified torque.
CAUTION:
Never reuse piston rod lock nut.

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

INFOID:0000000012404802

INSPECTION AFTER DISASSEMBLY

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

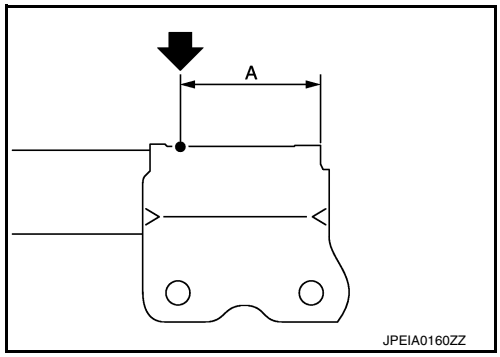
1. Check wheel sensor harness for proper connector. Refer to BRC-135, "FRONT WHEEL SENSOR : Exploded View".
2. Check wheel alignment. Refer to FSU-7, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-50, "Work Procedure" (with VDC).

Disposal

INFOID:0000000012404803

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.



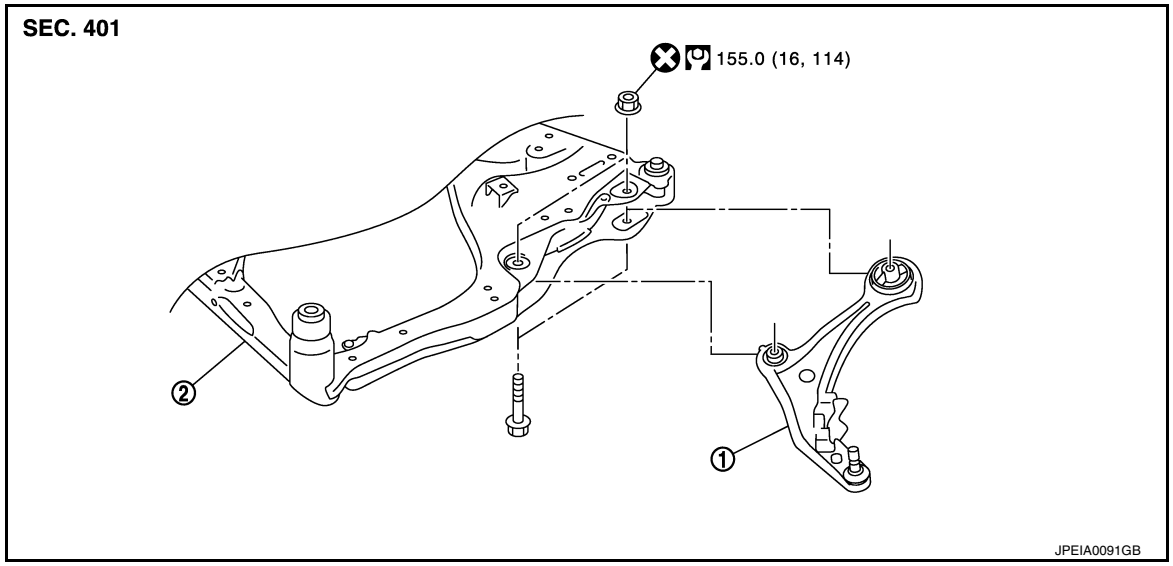
A : 20 – 30 mm (0.79 – 1.18 in)

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

Exploded View

INFOID:0000000012404804



1. Transverse link
2. Front suspension member

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

Removal and Installation

INFOID:0000000012404805

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:0000000012404806

INSPECTION AFTER REMOVAL

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

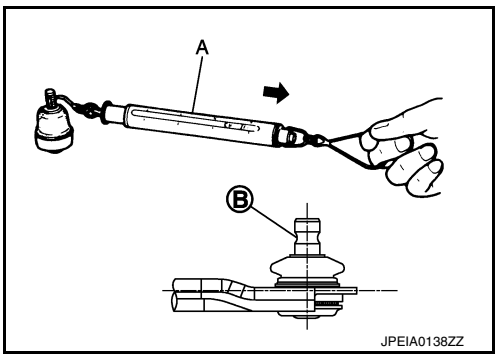
Transverse Link

- 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.

3. 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-19, "Ball Joint".**

Measurement on spring balance : **Refer to FSU-19, "Ball Joint".**

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

Axial End Play

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

Axial end play : **Refer to FSU-19, "Ball Joint".**

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

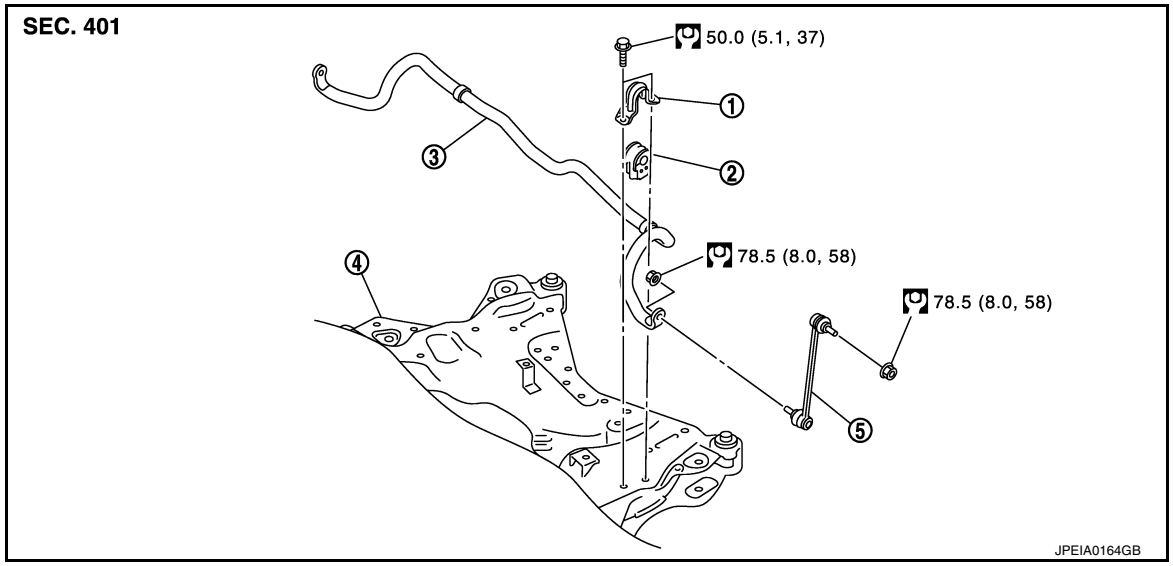
INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connector. Refer to BRC-135, "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-50, "Work Procedure" (with VDC).

FRONT STABILIZER

Exploded View

INFOID:0000000012404807



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

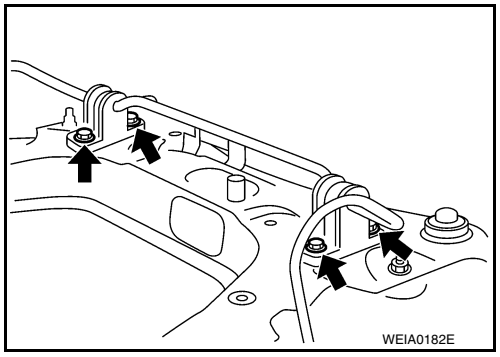
: N·m (kg-m, ft-lb)

Removal and Installation

INFOID:0000000012404808

REMOVAL

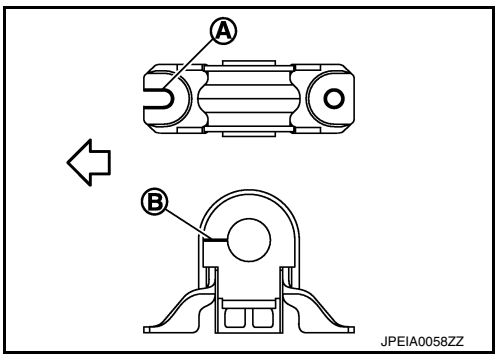
1. Remove tires with power tool. Refer to WT-46, "Exploded View".
2. Remove exhaust front tube. Refer to EX-6, "Removal and Installation".
3. Remove wheel sensor harness from strut assembly. Refer to BRC-135, "FRONT WHEEL SENSOR : Removal and Installation".
4. Separate steering outer socket from steering 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".



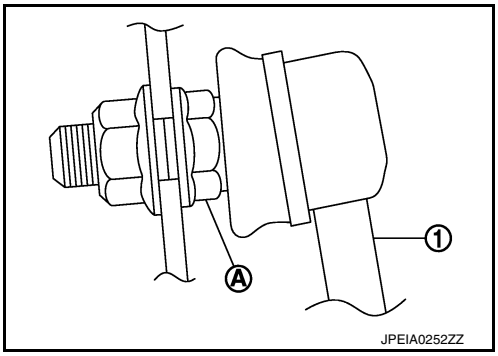
INSTALLATION

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

- 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:0000000012404809

INSPECTION AFTER REMOVAL

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

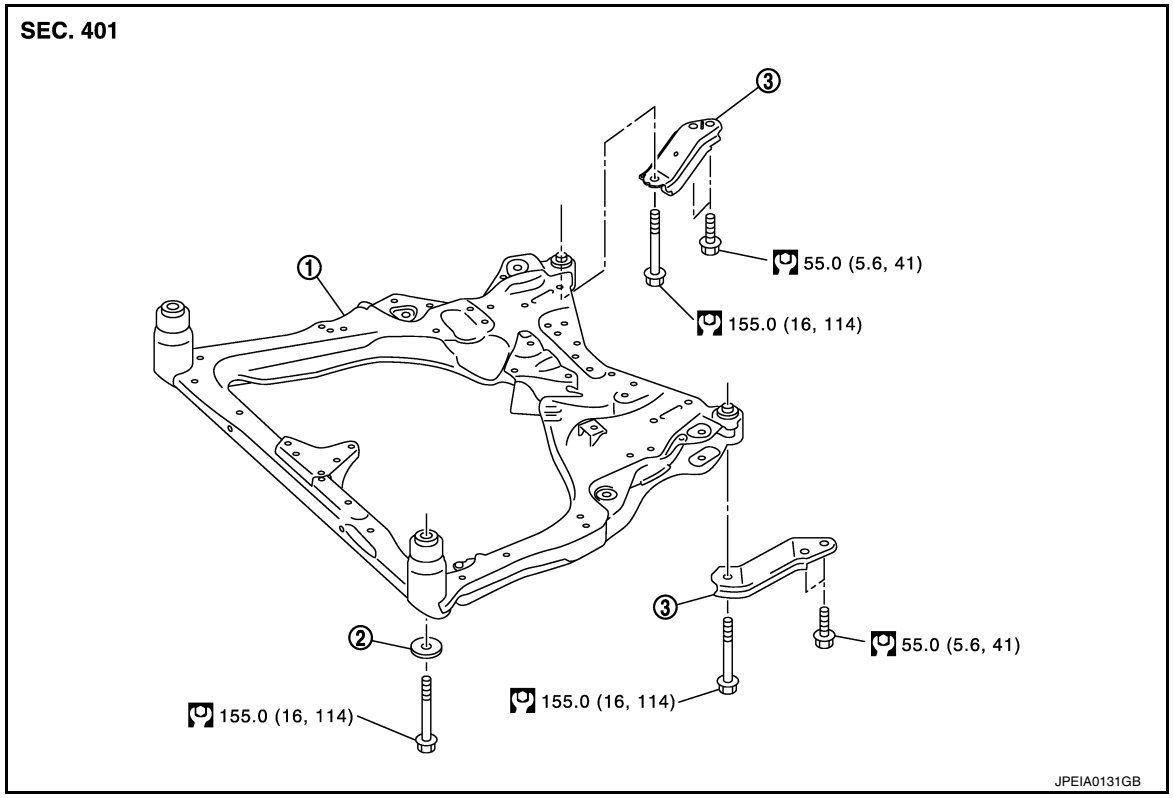
INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connector. Refer to BRC-135, "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-50, "Work Procedure" (with VDC).

FRONT SUSPENSION MEMBER

Exploded View

INFOID:0000000012404810



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

: N·m (kg-m, ft-lb)

Removal and Installation

INFOID:0000000012404811

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-58, "Removal and Installation".
3. Remove the following parts from front suspension member.
   - Engine assembly: Refer to EM-58, "Removal and Installation".
   - Transaxle assembly: Refer to TM-215, "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:0000000012404812

INSPECTION AFTER REMOVAL

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-135, "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-50, "Work Procedure" (with VDC).

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Alignment

INFOID:0000000012404813

Item			Standard	
			Left side	Right side
Camber 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 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 Degree minute (Decimal degree)		Minimum	12° 00′ (12.00°)	
		Nominal	12° 45′ (12.75°)	
		Maximum	13° 30′ (13.50°)	
Toe-in	Total toe-in 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 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:0000000012404814

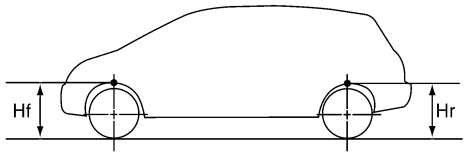
Item	Standard
Swing torque	0.5 – 4.9 N·m (0.06 – 0.49 kg-m, 5 – 43 in-lb)
Measurement on spring balance	11.1 – 108.9 N (1.2 – 11.1 kg, 3 – 24 lb)
Axial end play	0 mm (0 in)

Wheelarch Height

INFOID:0000000012404815

Item	Standard			
Grade	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)

Item	Standard			
Grade	3.5S	3.5SV	3.5SL	3.5LE
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.