

SECTION **FSU**  
FRONT SUSPENSION

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FSU

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# PRECAUTIONS

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## PRECAUTIONS

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### Caution

NES0001Z

- When installing rubber bushings, final tightening must be carried out under unladen conditions with tires on ground. Oil will 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.
- Caulking nuts are not reusable. Always use new ones when installing. Since new caulking nuts are pre-oiled, tighten as they are.
- Avoid burden to front cross bar.

# PREPARATION

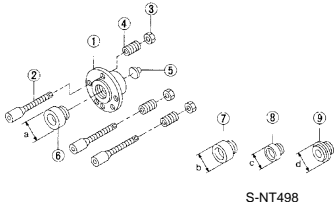
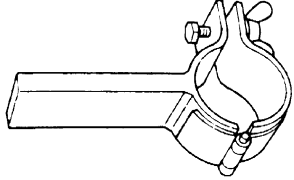
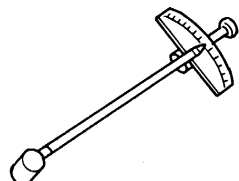
## PREPARATION

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### Special Service Tools

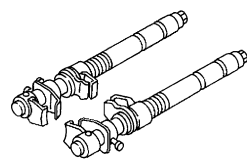
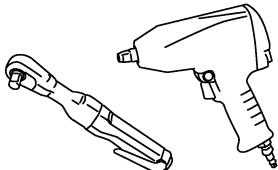
NES00020

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

Tool number (Kent-Moore No.) Tool name	Description
KV991040S0 ( — ) CCK gauge attachment 1. Plate 2. Guide bolts 3. Nuts 4. Springs 5. Center plate 6. KV99104020 Adapter A a: 72 mm (2.83 in) dia. 7. KV99104030 Adapter B b: 65 mm (2.56 in) dia. 8. KV99104040 Adapter C c: 57 mm (2.24 in) dia. 9. KV99104050 Adapter D d: 53.4 mm (2.102 in) dia.	Measuring wheel alignment  <p style="text-align: center;">S-NT498</p>
ST35652000 ( — ) Strut attachment	Disassembling and assembling shock absorber  <p style="text-align: center;">ZZA0807D</p>
ST3127S000 (J-25765-A) Preload gauge	Measuring rotating torque of ball joint  <p style="text-align: center;">ZZA0806D</p>

### Commercial Service Tools

NES00021

Tool name	Description
Spring compressor	Removing coil spring  <p style="text-align: center;">S-NT717</p>
Power tool	Loosening bolts and nuts  <p style="text-align: center;">PBIC0190E</p>

# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

## NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PPF:00003

### NVH Troubleshooting Chart

NES00022

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

Symptom		Possible cause and SUSPECTED PARTS											Reference page						
		Improper installation, looseness	Shock absorber deformation, damage or deflection	Bushing or mounting deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	Stabilizer bar fatigue	PROPELLER SHAFT	DIFFERENTIAL	FRONT AXLE AND FRONT SUSPENSION	TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKES	STEERING		
Noise	FRONT SUSPENSION	Noise	x	x	x	x	x	x			x	x	x	x	x	x	x	FSU-8	
		Shake	x	x	x	x		x			x		x	x	x			FSU-11	
		Vibration	x	x	x	x	x				x		x	x		x		—	
		Shimmy	x	x	x	x			x			x	x	x					—
		Judder	x	x	x							x	x	x					—
		Poor quality ride or handling	x	x	x	x	x		x	x			x	x	x				FSU-8
																	FSU-6		
																	FSU-18		
																	NVH in PR section		
																	NVH in RFD section.		
																	NVH in FAX and FSU section.		
																	NVH in WT section.		
																	NVH in WT section.		
																	NVH in RAX section.		
																	NVH in BR section.		
																	NVH in PS section.		

x: Applicable

# FRONT SUSPENSION ASSEMBLY

## FRONT SUSPENSION ASSEMBLY

PFP:54010

### On-Vehicle Inspection

NES00023

Make sure the mounting conditions (looseness, back lash) of each component and component statuses (wear, damage) are normal.

### INSPECTION OF BALL JOINT END PLAY OF EACH LINK

1. Set front wheels in a straight-ahead position. Do not depress brake pedal.
2. Check ball joint axial end play of each link.

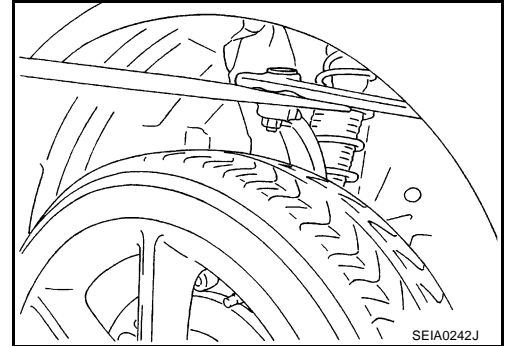
#### **CAUTION:**

**Be careful not to damage ball joint boot.**

#### Upper Link Ball Joint

Measure axial end play by installing and moving up/down with an iron pry bar or something similar between upper link and steering knuckle.

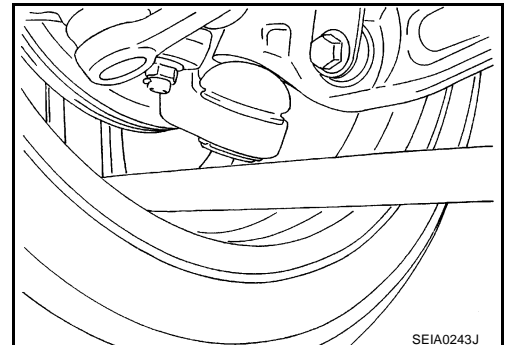
**Axial end play : 0 mm (0 in)**



#### Steering Knuckle Lower Ball Joint

Measure axial end play by installing and moving up/down with an iron pry bar or something similar between steering knuckle and wheel.

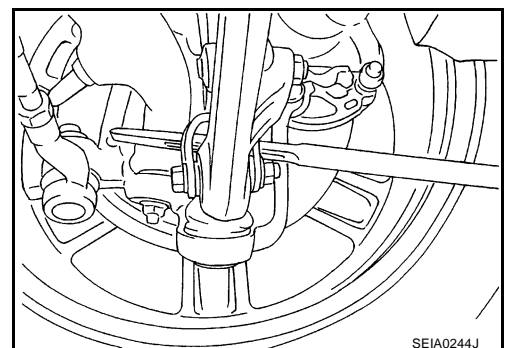
**Axial end play : 0 mm (0 in)**



#### Compression Rod Ball Joint

Measure axial end play by installing and moving up/down with an iron pry bar or something similar between compression rod and transverse link.

**Axial end play : 0 mm (0 in)**



### SHOCK ABSORBER INSPECTION

Check shock absorber for oil leakage, damage and replace if necessary. Refer to [FSU-11, "INSPECTION AFTER DISASSEMBLY"](#).

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# FRONT SUSPENSION ASSEMBLY

## Wheel Alignment Inspection

NES000DP

### DESCRIPTION

- Measure wheel alignment under unladen conditions.

#### NOTE:

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

### PRELIMINARY CHECK

- Check tires for improper air pressure and wear.
- Check road wheels for runout.
- Check wheel bearing axial end play.
- Check ball joint axial end play of compression rod, upper link, and steering knuckle.
- Check shock absorber operation.
- Check each mounting part of axle and suspension for looseness and deformation.
- Check each link, rod and member for cracks, deformation and other damage.
- Check vehicle 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.
- Make sure 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.

# FRONT SUSPENSION ASSEMBLY

## THE 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). **Do not use these indicators.**
- The alignment specifications programmed into your machine that operate these indicators may not be correct.
- This may result in an ERROR.
- Some newer alignment machines are equipped with an optional “Rolling Compensation” method to “compensate” the sensors (alignment targets or head units). **Do not use this “Rolling Compensation” method.**
- Use the “Jacking Compensation Method”. After installing the alignment targets or head units, raise the vehicle and rotate the wheels 1/2 turn both ways.
- See Instructions in the alignment machine you're using for more information on this.

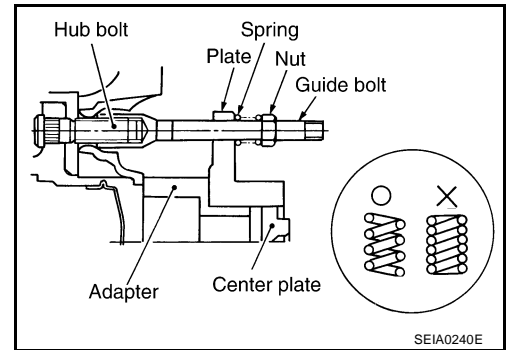
## INSPECTION OF CAMBER, CASTER AND KINGPIN INCLINATION ANGLES

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

### Using a CCK Gauge

Install the CCK gauge attachment [SST: KV991040S0 ( - )] with the following procedure on wheel, then measure wheel alignment.

1. Remove three wheel nuts, and install the guide bolts to hub bolt.
2. Screw the adapter into the plate until it contacts the plate tightly.
3. Screw the center plate into the plate.
4. Insert the plate assembly on the guide bolt. Put the spring in, and then evenly screw the three guide bolt nuts. When fastening the guide nuts, do not completely compress the spring.



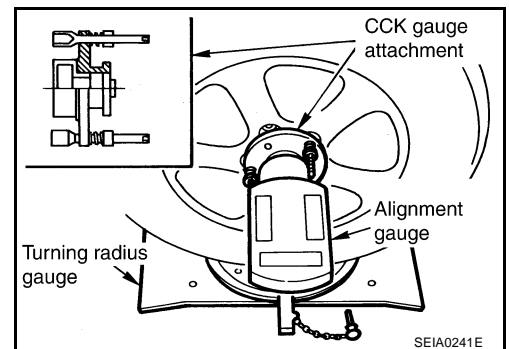
5. Place the dent of alignment gauge onto the projection of center plate and tightly contact them to measure.

**Camber, caster, kingpin inclination angles:**

Refer to [FSU-20, "SERVICE DATA AND SPECIFICATIONS \(SDS\)"](#).

### CAUTION:

- If camber, caster, or kingpin inclination angle is outside the standard, check front suspension parts for wear and damage, and replace suspect parts if necessary.
- King pin inclination angle is reference value, no inspection is required. (Due to the type of suspension, the kingpin inclination angle cannot be measured correctly using a normal alignment tester.)

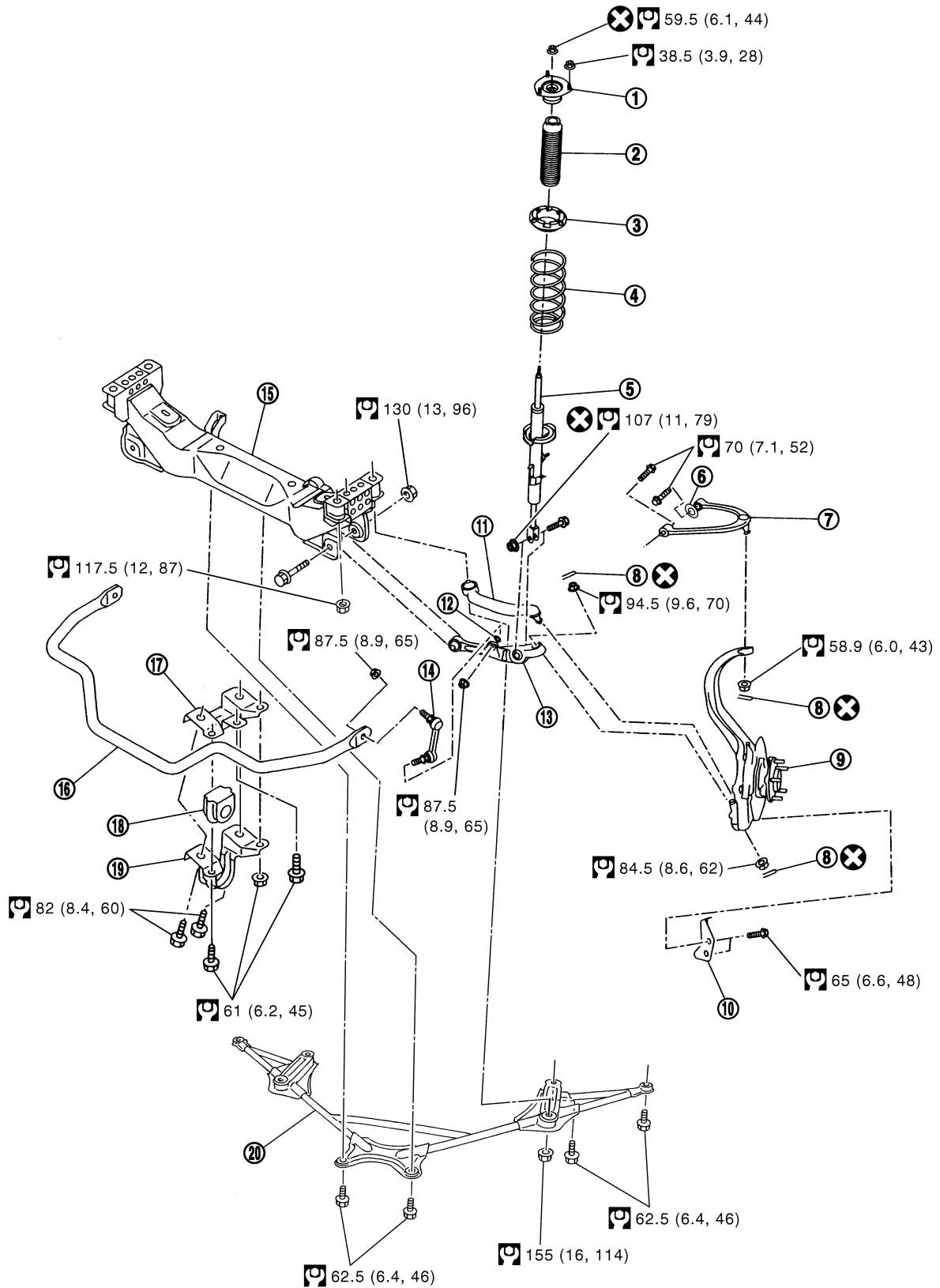


# FRONT SUSPENSION ASSEMBLY

NES00025

## Components

SEC. 400•401•406



PEIA0063E



# FRONT SUSPENSION ASSEMBLY

- |                              |                               |                             |
|------------------------------|-------------------------------|-----------------------------|
| 1. Mounting insulator        | 2. Bound bumper               | 3. Spring upper seat        |
| 4. Coil spring               | 5. Shock absorber             | 6. Stopper rubber           |
| 7. Upper link                | 8. Cotter pin                 | 9. Front axle               |
| 10. Steering stopper bracket | 11. Compression rod           | 12. Washer                  |
| 13. Transverse link          | 14. Stabilizer connecting rod | 15. Front suspension member |
| 16. Stabilizer bar           | 17. Stabilizer clamp bracket  | 18. Stabilizer bushing      |
| 19. Stabilizer clamp         | 20. Front cross bar           |                             |

Refer to [GI-10, "Components"](#), for the symbols in figure.

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## Removal and Installation

NES00026

### REMOVAL

1. Remove tires from vehicle with power tool.
2. Remove brake caliper with power tool. Hang it in a place where it will not interfere with work. Refer to [BR-21, "FRONT DISC BRAKE"](#).
3. Remove disc rotor. Refer to [BR-23, "Removal and Installation of Brake Caliper Assembly"](#).
4. Remove undercover with power tool.
5. Remove mounting bolts and nuts, then remove front cross bar from vehicle with power tool.
6. Remove steering hydraulic piping bracket from front suspension member. Refer to [PS-36, "HYDRAULIC LINE"](#).
7. Remove steering gear and front suspension member attachment bolts and hang steering gear on vehicle. Refer to [PS-19, "POWER STEERING GEAR AND LINKAGE"](#).
8. Set jack under engine.

#### CAUTION:

**When setting jack to engine, use a wooden block or an equivalent for the setting.**

9. Remove mounting bolt and nut between shock absorber and transverse link with power tool.
10. Remove cotter pin of upper link ball joint, then loosen mounting nut.
11. Use a ball joint remover (suitable tool) to remove upper link from steering knuckle. Be careful not to damage ball joint boot.

#### CAUTION:

**Tighten temporarily mounting nut to prevent damage to threads and to prevent ball joint remover (suitable tool) from coming off.**

12. Remove mounting nut and washer located at the bottom of stabilizer connecting rod, and then remove stabilizer connecting rod from transverse link with power tool. Refer to [FSU-18, "STABILIZER BAR"](#).
13. Remove mounting nuts between engine mounting insulator and front suspension member. Refer to [EM-131, "ENGINE ASSEMBLY"](#).
14. Remove mounting nuts between front suspension member and body with power tool.
15. Remove front suspension assembly from vehicle.

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### INSTALLATION

- Refer to [FSU-8, "Components"](#) for tightening torque. Install in the reverse order of removal.
- NOTE:**  
Refer to component parts location and do not reuse non-reusable parts.
- Perform final tightening of shock absorber lower side (rubber bushing) under unladen condition with tires on ground. Check wheel alignment. Refer to [FSU-20, "SERVICE DATA AND SPECIFICATIONS \(SDS\)"](#).

# COIL SPRING AND SHOCK ABSORBER

## COIL SPRING AND SHOCK ABSORBER

PFPP:54302

### Removal and Installation

NES00027

#### REMOVAL

1. Remove tire from vehicle with power tool.
  2. Remove harness of wheel sensor from shock absorber. Refer to [BRC-58, "WHEEL SENSOR"](#).
- CAUTION:**  
**Do not pull on wheel sensor harness.**
3. Remove mounting nuts of brake hose from shock absorber. Refer to [BR-11, "BRAKE PIPING AND HOSE"](#).
  4. Remove mounting bolt and nut between shock absorber and transverse link with power tool.
  5. Remove mounting nuts on mounting insulator with power tool, then remove shock absorber from vehicle.

#### INSTALLATION

- Refer to [FSU-8, "Components"](#) for tightening torque. Install in the reverse order of removal.
- NOTE:**  
Refer to component parts location and do not reuse non-reusable parts.
- Perform final tightening of shock absorber lower side (rubber bushing) under unladen condition with tires on ground. Check wheel alignment. Refer to [FSU-20, "SERVICE DATA AND SPECIFICATIONS \(SDS\)"](#).

### Disassembly and Assembly

NES00028

#### DISASSEMBLY

**NOTE:**

Make sure piston rod on shock absorber is not damaged when removing components from shock absorber.

1. Install strut attachment (SST) to shock absorber and fix it in a vise.

**CAUTION:**

**When installing strut attachment (SST) to shock absorber, wrap a shop cloth around shock absorber to protect it from damage.**

2. Using a spring compressor (commercial service tool), compress coil spring between spring upper seat and spring lower seat (on shock absorber) until coil spring is free.

**CAUTION:**

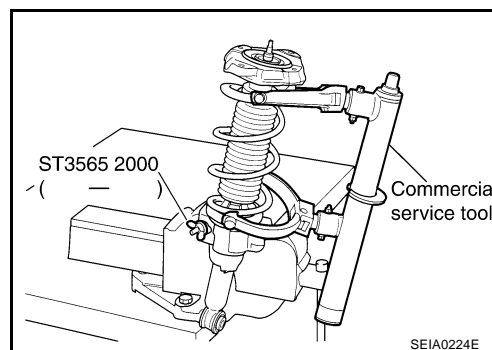
**Be sure spring compressor (commercial service tool) is securely attached to coil spring. Compress coil spring.**

3. Check that coil spring between spring upper seat and spring lower seat is free and then secure piston rod tip so that piston rod does not turn, and remove piston rod lock nut.
4. Remove mounting insulator, bound bumper, spring upper seat. Then remove coil spring from shock absorber.
5. Gradually release spring compressor (commercial service tool), and remove coil spring.

**CAUTION:**

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

6. Remove strut attachment (SST) from shock absorber.



# COIL SPRING AND SHOCK ABSORBER

## INSPECTION AFTER DISASSEMBLY

### Shock Absorber Inspection

- Check shock absorber for deformation, cracks, damage, and replace if necessary.
- Check piston rod for damage, uneven wear or distortion, and replace if necessary.
- Check welded and sealed areas for oil leakage, and replace if necessary.

### Mounting Insulator and Rubber Parts Inspection

Check mounting insulator for cracks and rubber parts for wear. Replace them if necessary.

### Coil Spring Inspection

Check coil spring for cracks, wear, damage, and replace if necessary.

## ASSEMBLY

### NOTE:

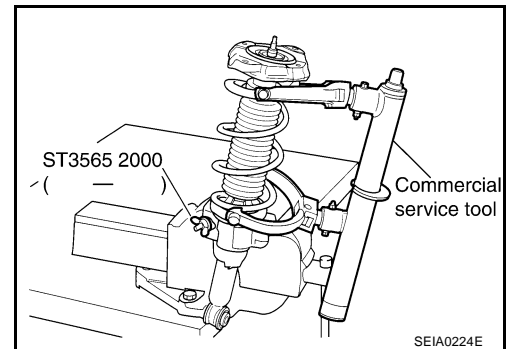
Make sure piston rod on shock absorber is not damaged when attaching components to shock absorber.

1. Install strut attachment (SST) to shock absorber and fix it in a vise.

### CAUTION:

**When installing strut attachment (SST) to shock absorber, wrap a shop cloth around shock absorber to protect it from damage.**

2. Compress coil spring using a spring compressor (commercial service tool), and install it onto shock absorber.



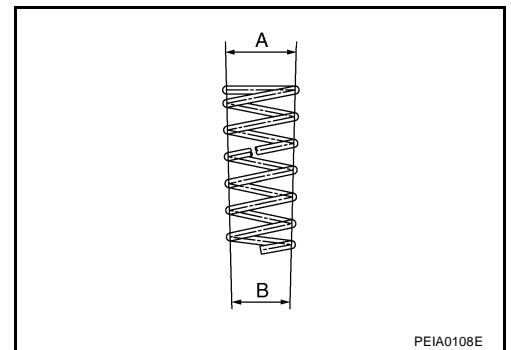
### CAUTION:

- Install coil spring as shown in the figure with large diameter side (A) up and small diameter side (B) down.
- Be sure spring compressor (commercial service tool) is securely attached to coil spring. Compress coil spring.

3. Apply soapy water to bound bumper and insert into mounting insulator.

### CAUTION:

**Do not use machine oil.**



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## COIL SPRING AND SHOCK ABSORBER

- Attach spring upper seat and mounting insulator as shown in the figure.

**CAUTION:**

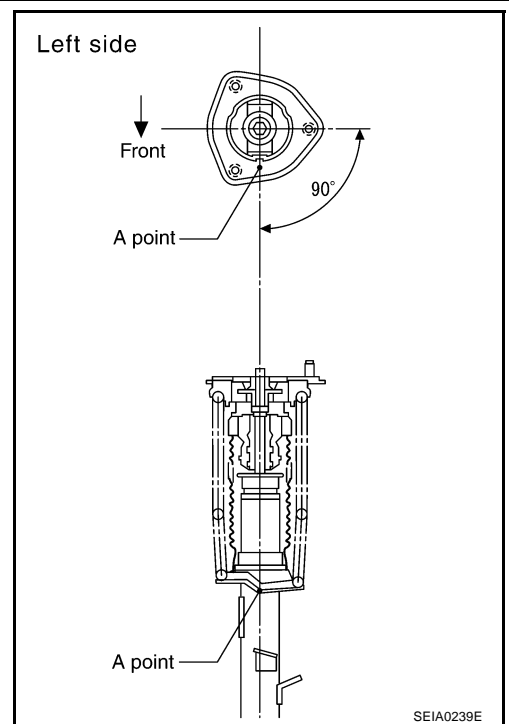
- Make sure coil spring is securely seated in spring mounting groove of spring upper seat.
- The bottom part of spring should be at the piston of A point of spring seat.

- Secure piston rod tip so that piston rod does not turn, and tighten the specified torque on piston rod lock nut.
- Gradually release spring compressor (commercial service tool), and remove coil spring.

**CAUTION:**

Loosen spring compressor (commercial service tool) while making sure coil spring attachment position does not move.

- Remove strut attachment (SST) from shock absorber.



# TRANSVERSE LINK

## TRANSVERSE LINK

PFP:54500

### Removal and Installation

NES00029

#### REMOVAL

1. Remove tire from vehicle with power tool.
2. Remove undercover with power tool.
3. Remove mounting nut and washer on lower portion of stabilizer connecting rod with power tool. Refer to [FSU-18, "STABILIZER BAR"](#).
4. Remove mounting nut and bolt between transverse link and shock absorber on lower position.
5. Remove mounting nut between transverse link and front suspension member with power tool.
6. Remove transverse link from steering knuckle. Refer to [FAX-4, "FRONT WHEEL HUB AND KNUCKLE"](#).
7. Remove transverse link from vehicle.

#### INSPECTION AFTER REMOVAL

##### Visual Inspection

Check transverse link and bushing for deformation, cracks, or damage. If any non-standard condition is found, replace it.

#### INSTALLATION

- Refer to [FSU-8, "Components"](#) for tightening torque. Install in the reverse order of removal.  
**NOTE:**  
Refer to component parts location and do not reuse non-reusable parts.
- Perform final tightening of front suspension member installation position and shock absorber lower side (rubber bushing) under unladen condition with tires on ground. Check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#).

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# UPPER LINK

## UPPER LINK

PF5:54524

### Removal and Installation

#### REMOVAL

NES0002A

1. Remove tires from vehicle with power tool.
2. Remove shock absorber. Refer to [FSU-10, "COIL SPRING AND SHOCK ABSORBER"](#) .
3. Remove cotter pin of upper link ball joint, then loosen mounting nut.
4. Use a ball joint remover (suitable tool) to remove upper link from steering knuckle. Be careful not to damage ball joint boot.

#### CAUTION:

**Tighten temporarily mounting nut to prevent damage to threads and to prevent ball joint remover (suitable tool) from coming off.**

5. Remove bolts holding upper link to body with power tool.
6. Remove upper link from vehicle.
7. Remove stopper rubber from upper link.

#### INSPECTION AFTER REMOVAL

##### Visual Inspection

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

##### Ball Joint Inspection

Manually move ball stud to confirm it moves smoothly with no binding.

##### Swing Torque Inspection

#### NOTE:

Before measurement, move ball joint at least 10 times by hand to check for smooth movement.

- Hook a spring balance at ball stud. Confirm spring balance measurement value is within the specifications when ball stud begins moving.

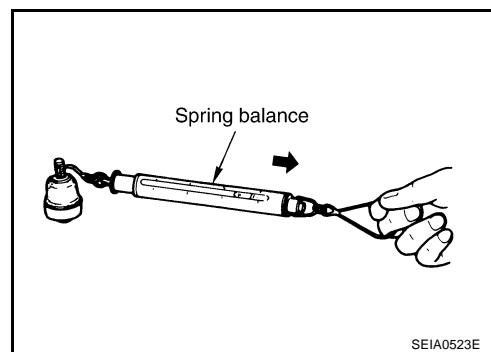
#### Swing torque:

**Less than 2.0 N-m (0.20 kg-m, 18 in-lb)**

#### Measured value of spring balance:

**Less than 34.8 N (3.5 kg, 7.8 lb)**

- If it is outside the specified range, replace upper link assembly.



##### Rotating Torque Inspection

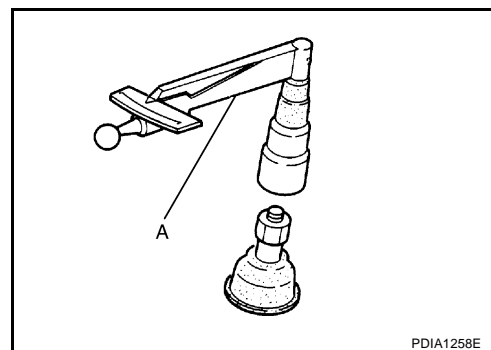
- Attach mounting nut to ball stud. Check that rotating torque is within specifications with a preload gauge.

**Tool number A: ST3127S000 (J-25765-A)**

#### Rotating torque:

**Less than 2.0 N-m (0.20 kg-m, 18 in-lb)**

- If it is outside the specified range, replace upper link assembly.



# UPPER LINK

## Axial End Play Inspection

- Move tip of ball joint in axial direction to check for looseness.

**Axial end play : 0 mm (0 in)**

- If it is outside the specified range, replace upper link assembly.

## INSTALLATION

- Refer to [FSU-8, "Components"](#) for tightening torque. Install in the reverse order of removal.

### NOTE:

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

- Perform final tightening of front suspension member installation position (rubber bushing) under unladen condition with tires on ground. Check wheel alignment. Refer to [FSU-20, "SERVICE DATA AND SPECIFICATIONS \(SDS\)"](#).

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# COMPRESSION ROD

## COMPRESSION ROD

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### Removal and Installation

#### REMOVAL

NES0002B

1. Remove tires from vehicle with power tool.
2. Remove undercover with power tool.
3. Remove front cross bar from vehicle with power tool.
4. Remove cotter pin of compression rod ball joint, and loosen nut.
5. Use a ball joint remover (suitable tool) to remove compression rod from steering knuckle. Be careful not to damage ball joint boot.

#### CAUTION:

**Tighten temporarily mounting nut to prevent damage to threads and to prevent ball joint remover (suitable tool) from coming off.**

6. Remove compression rod from vehicle.

#### INSPECTION AFTER REMOVAL

##### Visual Inspection

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

##### Ball Joint Inspection

Manually move ball stud to confirm it moves smoothly with no binding.

##### Swing Torque Inspection

###### NOTE:

Before measurement, move ball joint at least 10 times by hand to check for smooth movement.

- Hook a spring balance at ball stud. Confirm spring balance measurement value is within the specifications when ball stud begins moving.

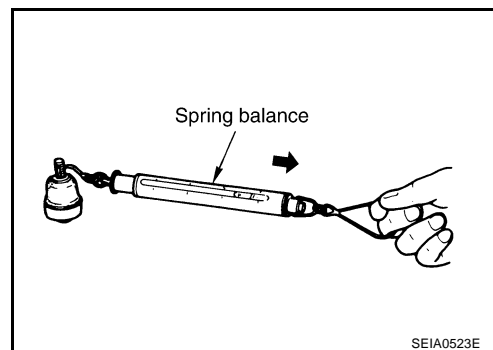
###### Swing torque:

**0.147 - 2.45 N·m (0.02 - 0.24 kg·m, 2 - 21 in·lb)**

###### Measured value of spring balance:

**2.37 - 39.5 N (0.24 - 4.03 kg, 0.53 - 8.88 lb)**

- If it is outside the specified range, replace compression rod assembly.



##### Rotating Torque Inspection

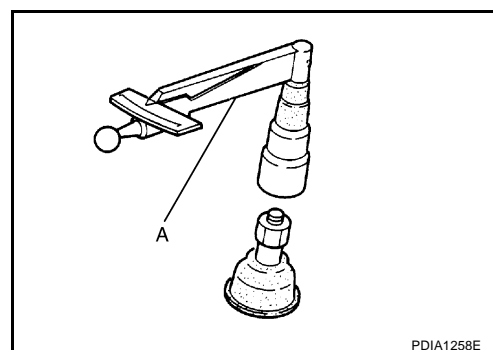
- Attach mounting nut to ball stud. Check that rotating torque is within specifications with a preload gauge.

**Tool number A: ST3127S000 (J-25765-A)**

###### Rotating torque:

**0.147 - 2.45 N·m (0.02 - 0.24 kg·m, 2 - 21 in·lb)**

- If it is outside the specified range, replace compression rod assembly.





# COMPRESSION ROD

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## Axial End Play Inspection

- Move tip of ball joint in axial direction to check for looseness.

**Axial end play : 0 mm (0 in)**

- If it is outside the specified range, replace compression rod assembly.

## INSTALLATION

- Refer to [FSU-8, "Components"](#) for tightening torque. Install in the reverse order of removal.

### NOTE:

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

- Perform final tightening of installation position between front suspension member and front cross bar (rubber bushing) under unladen condition with tires on ground. Check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#).

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FSU

# STABILIZER BAR

PFP:54611

## STABILIZER BAR

### Removal and Installation

NES0002C

#### REMOVAL

1. Remove tires from vehicle with power tool.
2. Remove undercover with power tool.
3. Remove mounting nut on upper portion of stabilizer connecting rod with power tool.
4. Remove mounting bolts and nut, then remove stabilizer clamp, stabilizer bushing, and stabilizer clamp bracket.
5. Remove stabilizer bar from vehicle.

#### INSPECTION AFTER REMOVAL

Check stabilizer bar, stabilizer connecting rod, stabilizer bushing, stabilizer clamp and stabilizer clamp bracket for deformation, cracks and damage, and replace if necessary.

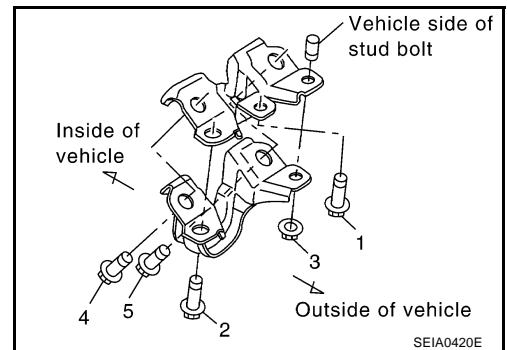
#### INSTALLATION

- Refer to [FSU-8, "Components"](#) for tightening torque. Install in the reverse order of removal.

##### NOTE:

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

- Tighten each bolt and nut as shown in the figure for tightening stabilizer bracket and stabilizer clamp. Tightening order is as follows. 1 (fully tighten) → 2 (temporarily tighten) → 3 (temporarily tighten) → 2 (fully tighten) → 3 (fully tighten) → 4, 5 (temporarily tighten) → 4, 5 (fully tighten).



# FRONT SUSPENSION MEMBER

## FRONT SUSPENSION MEMBER

PFP:54401

NES0002D

### Removal and Installation

#### REMOVAL

1. Remove tires from vehicle with power tool.
2. Remove undercover with power tool.
3. Remove mounting bolts and nuts, then remove front cross bar from vehicle with power tool.
4. Remove steering hydraulic piping bracket from front suspension member. Refer to [PS-36, "HYDRAULIC LINE"](#).
5. Remove steering gear and front suspension member attachment bolts and hang steering gear on vehicle. Refer to [PS-19, "POWER STEERING GEAR AND LINKAGE"](#).
6. Remove transverse link from front suspension member with power tool. Refer to [FSU-13, "TRANSVERSE LINK"](#).
7. Set jack under engine.  
**CAUTION:**  
**When setting jack to engine, use a wooden block or an equivalent for the setting.**
8. Remove mounting nuts between engine mounting insulator and front suspension member. Refer to [EM-131, "ENGINE ASSEMBLY"](#).
9. Remove mounting nuts between front suspension member and body with power tool.
10. Remove front suspension member from vehicle.

#### INSPECTION AFTER REMOVAL

Check front suspension member for deformation, cracks, or any other damage. Replace if necessary.

#### INSTALLATION

- Refer to [FSU-8, "Components"](#) for tightening torque. Install in the reverse order of removal.  
**NOTE:**  
Refer to component parts location and do not reuse non-reusable parts.
- Perform final tightening of installation position between front suspension member and transverse link (rubber bushing) under unladen condition with tires on level ground. Check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#).

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# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

### Wheel Alignment (Unladen\*)

NES0002E

Tire		17 inch	18 inch	19 inch
Camber Degree minute (Decimal degree)	Minimum	-1°15' (-1.25°)		-1°10' (-1.17°)
	Nominal	-0°30' (-0.50°)		-0°25' (-0.42°)
	Maximum	0°15' (0.25°)		0°20' (0.33°)
	Left and right difference	45' (0.75°)		
Caster Degree minute (Decimal degree)	Minimum	7°25' (7.42°)	7°15' (7.25°)	7°20' (7.33°)
	Nominal	8°10' (8.17°)	8°00' (8.00°)	8°05' (8.08°)
	Maximum	8°55' (8.92°)	8°45' (8.75°)	8°50' (8.83°)
	Left and right difference	45' (0.75°)		
Kingpin inclination Degree minute (Decimal degree)	Minimum	4°10' (4.17°)		
	Nominal	4°55' (4.92°)		
	Maximum	5°40' (5.67°)		
Total toe-in	Distance	Minimum	0 mm (0 in)	
		Nominal	1 mm (0.04 in)	
		Maximum	2 mm (0.08 in)	
	Angle (left wheel or right wheel) Degree minute (Decimal degree)	Minimum	0°00' (0.00°)	
		Nominal	0°02'30" (0.04°)	
		Maximum	0°05' (0.08°)	

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

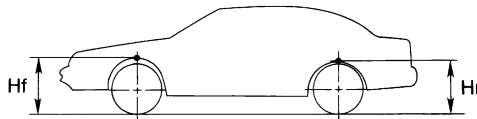
### Ball Joint

NES0002F

Swing torque	Less than 2.0 N-m (0.20 kg-m, 18 in-lb) (Upper link) 0.147 - 2.45 N-m (0.02 - 0.24 kg-m, 2 - 21 in-lb) (Compression rod)
Measurement on spring balance	Less than 34.8 N (3.5 kg, 7.8 lb) (Upper link) 2.37 - 39.5 N (0.24 - 4.03 kg, 0.53 - 8.88 lb) (Compression rod)
Rotating torque	Less than 2.0 N-m (0.20 kg-m, 18 in-lb) (Upper link) 0.147 - 2.45 N-m (0.02 - 0.24 kg-m, 2 - 21 in-lb) (Compression rod)
Axial end play	0 mm (0 in)

### Wheelarch Height (Unladen\*)

NES0002G



SFA818A

Applied model	225/50R17 (Front) 235/50R17 (Rear)	225/45R18 (Front) 245/45R18 (Rear)	225/40R19 (Front) 245/40R19 (Rear)
Front (Hf)	691 mm (27.20 in)	694 mm (27.32 in)	699 mm (27.52 in)
Rear (Hr)	702 mm (27.64 in)	710 mm (27.95 in)	

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