

SECTION **FSU**  
FRONT SUSPENSION

A  
B  
C  
D

**FSU**

CONTENTS

<b>PRECAUTIONS</b> .....	<b>2</b>	INSTALLATION .....	11	F
Caution .....	2	Disassembly and Assembly .....	12	
<b>PREPARATION</b> .....	<b>3</b>	DISASSEMBLY .....	12	G
Special Service Tools (SST) .....	3	INSPECTION AFTER DISASSEMBLY .....	12	
Commercial Service Tools .....	4	ASSEMBLY .....	13	
<b>NOISE, VIBRATION AND HARSHNESS (NVH)</b>		<b>TRANSVERSE LINK</b> .....	<b>14</b>	H
<b>TROUBLESHOOTING</b> .....	<b>5</b>	Removal and Installation .....	14	
NVH Troubleshooting Chart .....	5	REMOVAL .....	14	
<b>FRONT SUSPENSION ASSEMBLY</b> .....	<b>6</b>	INSPECTION AFTER REMOVAL .....	14	
On-Vehicle Inspection and Service .....	6	INSTALLATION .....	15	
INSPECTION OF TRANSVERSE LINK BALL		<b>STABILIZER BAR</b> .....	<b>16</b>	I
JOINT END PLAY .....	6	Removal and Installation .....	16	
STRUT INSPECTION .....	6	REMOVAL .....	16	
Wheel Alignment Inspection .....	6	INSPECTION AFTER REMOVAL .....	16	J
DESCRIPTION .....	6	INSTALLATION .....	16	
PRELIMINARY CHECK .....	6	<b>FRONT SUSPENSION MEMBER</b> .....	<b>17</b>	K
INSPECTION OF CAMBER, CASTER AND		Removal and Installation .....	17	
KINGPIN INCLINATION ANGLES .....	6	REMOVAL .....	17	
Components .....	8	INSPECTION AFTER REMOVAL .....	17	
Removal and Installation .....	9	INSTALLATION .....	17	L
REMOVAL .....	9	<b>SERVICE DATA</b> .....	<b>18</b>	
INSTALLATION .....	10	Wheel Alignment (Unladen) .....	18	
<b>COIL SPRING AND STRUT</b> .....	<b>11</b>	Ball Joint .....	18	
Removal and Installation .....	11	Wheelarch Height (Unladen*) .....	18	M
REMOVAL .....	11			

# PRECAUTIONS

---

## PRECAUTIONS

PFP:00001

### Caution

AES000MZ

- 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

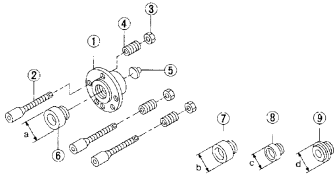
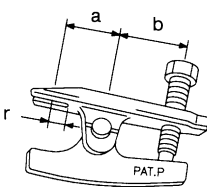
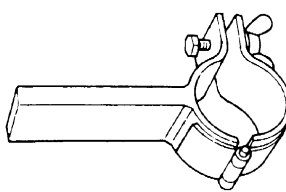
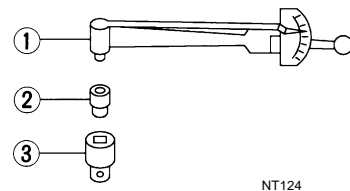
## PREPARATION

PFP:00002

### Special Service Tools (SST)

AES000N0

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

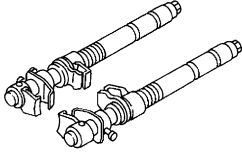
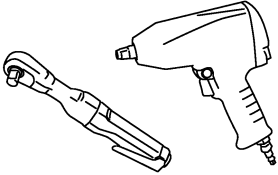
Tool number (Kent-Moore No.) Tool name	Description
KV991040S0 ( — ) CCK gauge attachment 1. Plate 2. Guide bolts 3. Nuts 4. Springs 5. Center plate 6. KV9910 4020 Adapter A a: 72 mm (2.83 in) dia. 7. KV9910 4030 Adapter B b: 65 mm (2.56 in) dia. 8. KV9910 4040 Adapter C c: 57 mm (2.24 in) dia. 9. KV9910 4050 Adapter D d: 53.4 mm (2.102 in) dia.	 <p style="text-align: center;">S-NT498</p> <p>Measuring wheel alignment</p>
HT72520000 (J25730-A) Ball joint remover a: 33 mm (1.30 in) b: 50 mm (1.97 in) r: 11.5 mm (0.453 in)	 <p style="text-align: center;">NT546</p> <ul style="list-style-type: none"> <li>● Removing steering outer socket</li> <li>● Removing transverse link</li> </ul>
ST35652000 ( — ) Strut attachment	 <p style="text-align: center;">ZZA0807D</p> <p>Disassembling and assembling strut</p>
ST3127 S000 (See J25742-1) Preload gauge 1. GG91030000 Torque wrench (J25765) 2. HT62940000 ( — ) Socket adapter (1/2") 3. HT62900000 ( — ) Socket adapter (3/8")	 <p style="text-align: center;">NT124</p> <p>Measuring rotating torque of ball joint</p>

A  
B  
C  
D  
**FSU**  
F  
G  
H  
I  
J  
K  
L  
M

# PREPARATION

## Commercial Service Tools

AES000N1

Tool name	Description
<p data-bbox="142 346 336 374">Spring compressor</p>  <p data-bbox="874 453 930 470">S-NT717</p>	<p data-bbox="1018 346 1230 374">Removing coil spring</p>
<p data-bbox="142 583 252 610">Power tool</p>  <p data-bbox="874 689 946 706">PBIC0190E</p>	<ul data-bbox="1018 491 1453 704" style="list-style-type: none"><li>● Removing wheel nuts</li><li>● Removing brake caliper assembly</li><li>● Removing undercover</li><li>● Removing steering gear</li><li>● Removing drive shaft (For AWD models)</li><li>● Removing suspension components parts</li></ul>

# NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

## NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PF0:00003

### NVH Troubleshooting Chart

AES000N2

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	Strut deformation, damage or deflection	Bushing or mounting deterioration	Parts interference	Spring fatigue	Suspension looseness	Incorrect wheel alignment	Stabilizer bar fatigue	PROPELLER SHAFT (For AWD models)	DIFFERENTIAL (For AWD models)	REAR AXLE AND REAR SUSPENSION	TIRES	ROAD WHEEL		DRIVE SHAFT (For AWD models)	BRAKES	STEERING	
Noise	FRONT SUSPENSION	×	×	×	×	×	×			×	×	×	×	×	×	×	×	FSU-8	
		×	×	×	×		×			×		×	×	×	×	×		FSU-12	
		×	×	×	×	×												—	
		×	×	×	×													—	
		×	×	×		×												—	
		×	×	×			×												FSU-8
Shake	FRONT SUSPENSION	×	×	×	×													FSU-6	
		×	×	×	×													FSU-16	
		×	×	×	×	×												NVH in PR section	
		×	×	×	×													NVH in RFD section	
		×	×	×	×														NVH in RAX and RSU section
		×	×	×	×														NVH in WT section
Vibration	FRONT SUSPENSION	×	×	×	×													NVH in WT section	
		×	×	×	×													NVH in WT section	
		×	×	×	×													NVH in RAX section	
		×	×	×	×														NVH in BR section
		×	×	×	×														NVH in PS section
		×	×	×	×														NVH in PS section
Shimmy	FRONT SUSPENSION	×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
Judder	FRONT SUSPENSION	×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
Poor quality ride or handling	FRONT SUSPENSION	×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														
		×	×	×	×														

×: Applicable

A  
B  
C  
D  
E  
FSU  
F  
G  
H  
I  
J  
K  
L  
M

# FRONT SUSPENSION ASSEMBLY

## FRONT SUSPENSION ASSEMBLY

PFP:54010

### On-Vehicle Inspection and Service

AES000N3

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

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

1. Set front wheels in a straight-ahead position. Do not depress brake pedal.
2. Measure axial end play by installing and moving up/down between transverse link and steering knuckle with an iron pry bar or something similar.

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

#### **CAUTION:**

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

#### STRUT INSPECTION

Check strut for oil leakage, damage and replace if necessary. Refer to [FSU-11, "COIL SPRING AND STRUT"](#).

#### Wheel Alignment Inspection DESCRIPTION

AES000N4

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

1. Check tires for improper air pressure and wear.
2. Check road wheels for runout.
3. Check wheel bearing axial end play.
4. Check transverse link ball joint axial end play.
5. Check strut operation.
6. Check each mounting part of axle and suspension for looseness and deformation.
7. Check each link, rod and member for cracks, deformation and other damage.
8. Check vehicle posture.

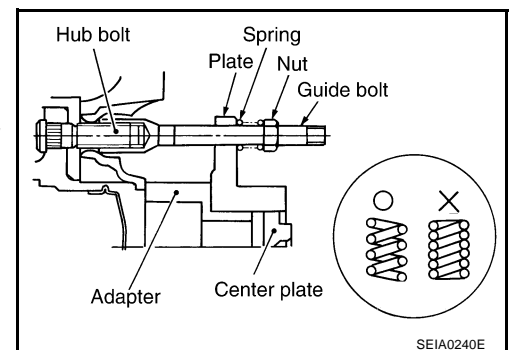
#### INSPECTION OF CAMBER, CASTER AND KINGPIN INCLINATION ANGLES

- 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 CCK gauge attachment (SST: KV991040S0) as following procedure in wheel, then measure wheel alignment.

1. Remove wheel nuts (3), and install a guide bolt to hub bolt.
2. Screw adapter into plate body until it contacts body tightly.
3. Screw center plate into plate.
4. Insert plate on guide bolt. Put spring in, and then evenly screw both guide bolt nut. When fastening guide bolt nut, do not completely compress spring.



SEIA0240E

# FRONT SUSPENSION ASSEMBLY

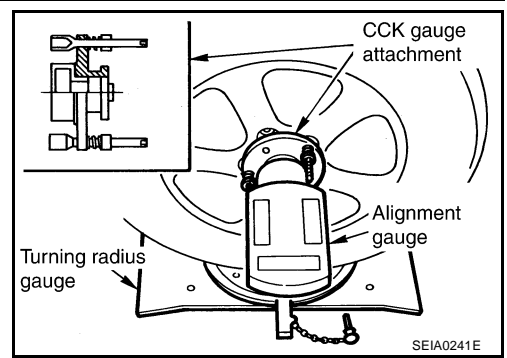
- Place the dent of alignment gauge onto the projection of center plate and tightly contact them to measure.

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

Refer to [FSU-18, "SERVICE DATA"](#) [FSU-18, "SERVICE DATA"](#) .

**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.



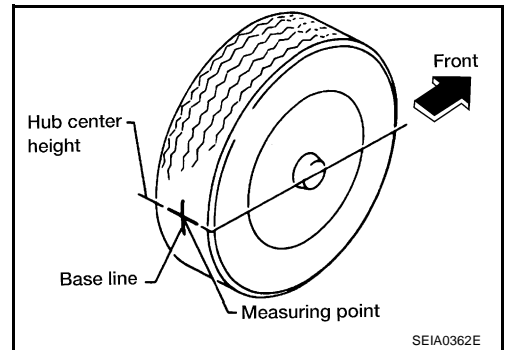
A  
B  
C  
D

## Toe-In Inspection

Measure toe-in using the following procedure.

**WARNING:**

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

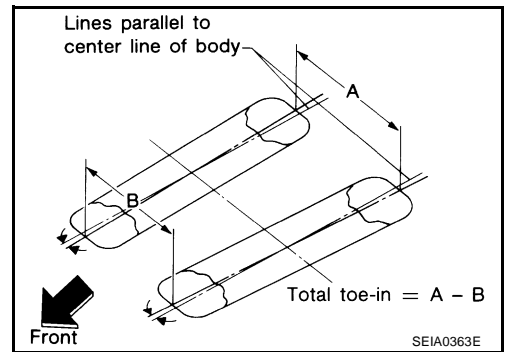


**FSU**

F  
G  
H

- Measure distance "A" (rear side).
- Push vehicle slowly ahead to rotate wheels 180 degrees (1/2 turn).  
If wheels have rotated more than 180 degrees (1/2 turn), try the above procedure again from the beginning. Never push vehicle backward.
- Measure distance "B" (front side).

**Total toe-in** : Refer to [FSU-18, "SERVICE DATA"](#) .

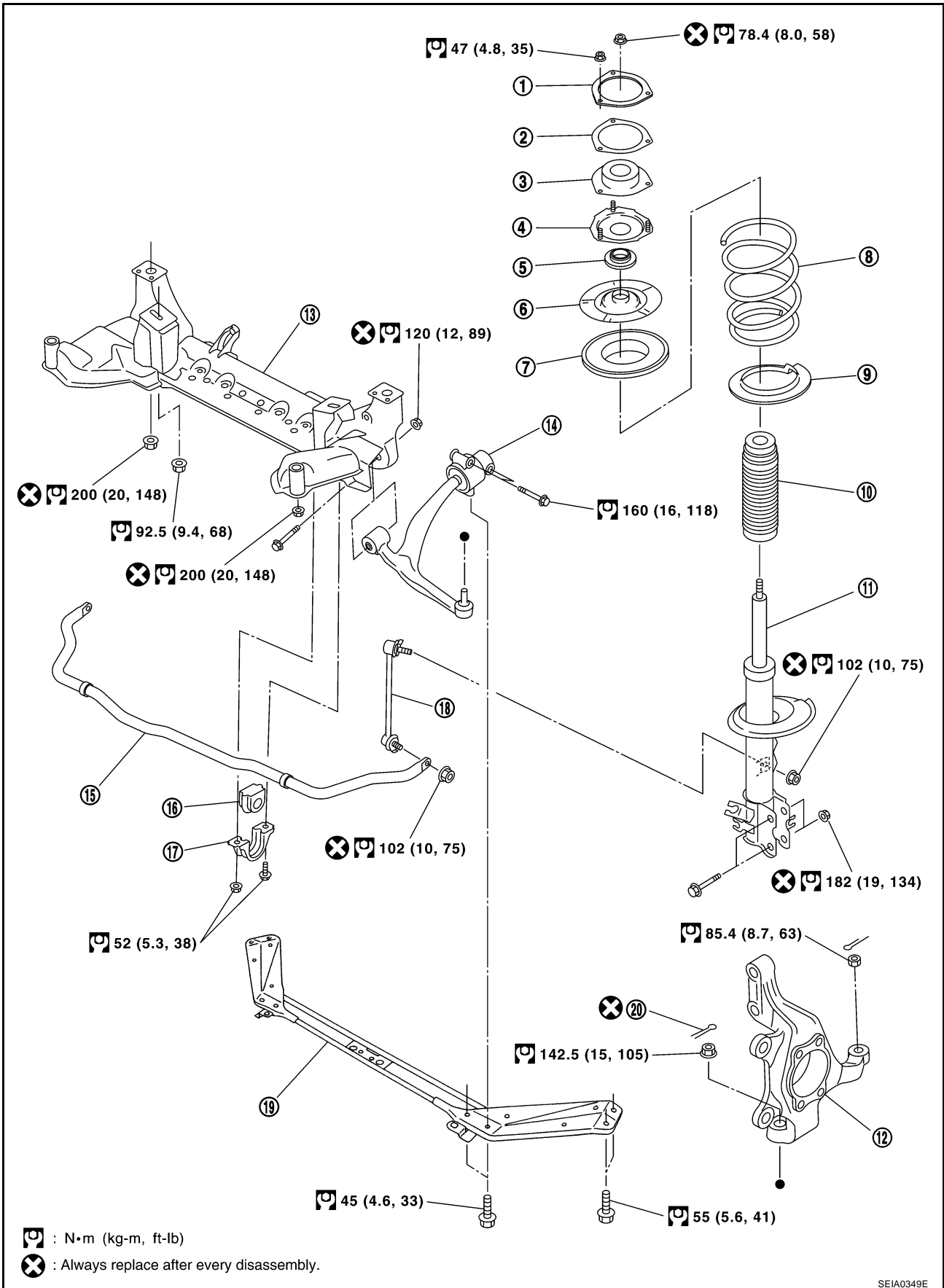


I  
J  
K  
L  
M

# FRONT SUSPENSION ASSEMBLY

## Components

AES000N5



SEIA0349E



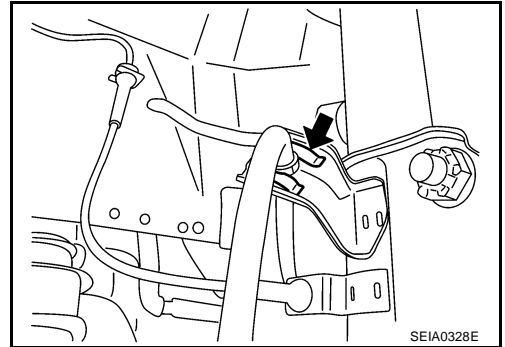
# FRONT SUSPENSION ASSEMBLY

- |                               |                      |                               |
|-------------------------------|----------------------|-------------------------------|
| 1. Strut upper plate          | 2. Strut spacer      | 3. Mounting insulator         |
| 4. Mounting insulator bracket | 5. Mounting bearing  | 6. Spring upper seat          |
| 7. Spring upper rubber seat   | 8. Coil spring       | 9. Spring lower rubber seat   |
| 10. Bound bumper              | 11. Strut            | 12. Steering knuckle          |
| 13. Front suspension member   | 14. Transverse link  | 15. Stabilizer bar            |
| 16. Stabilizer bushing        | 17. Stabilizer clamp | 18. Stabilizer connecting rod |
| 19. Front cross bar           | 20. Cotter pin       |                               |

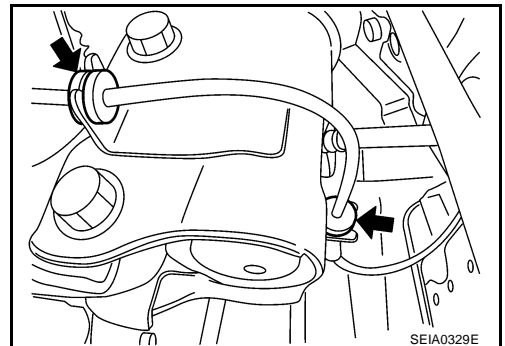
## Removal and Installation REMOVAL

AES000N6

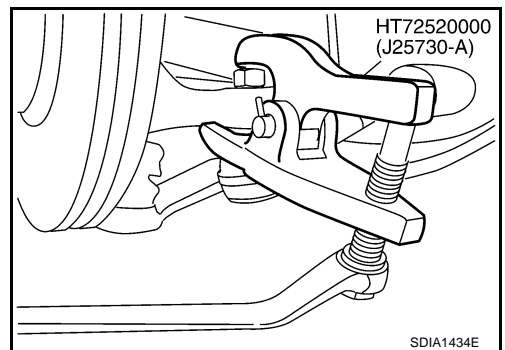
1. Set an engine slinger to engine, then suspend engine.
2. Remove tire from vehicle with power tool.
3. Remove brake caliper with power tool. Hang it in a place where it will not interfere with work. Refer to [BR-20, "FRONT DISC BRAKE"](#).
4. Remove brake hose lock plate. Then remove brake hose from strut assembly.
5. Remove disc rotor.



6. Remove wheel sensor harness from strut assembly.  
**CAUTION:**  
**Do not pull on wheel sensor harness.**
7. Remove undercover with power tool.
8. Remove front cross bar.
9. Remove steering hydraulic piping bracket from front suspension member. Refer to [PS-41, "HYDRAULIC LINE"](#).
10. Remove cotter pin at steering outer socket, then loosen mounting nut.



11. Use a ball joint remover (SST) to remove steering outer socket 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 (SST) from coming off.**
12. Remove mounting bolts of steering gear with power tool, then hang steering gear on vehicle. Refer to [PS-19, "POWER STEERING GEAR AND LINKAGE"](#).
13. Remove front final drive side of drive shaft with power tool. (For AWD models) Refer to [FAX-12, "Removal and Installation \(Left Side\)"](#), [FAX-13, "Removal and Installation \(Right Side\)"](#).
14. Set jack under front suspension member.
15. Remove fixing bolts and nuts between strut assembly and steering knuckle with power tool.



A  
B  
C

D

FSU

F

G

H

I

J

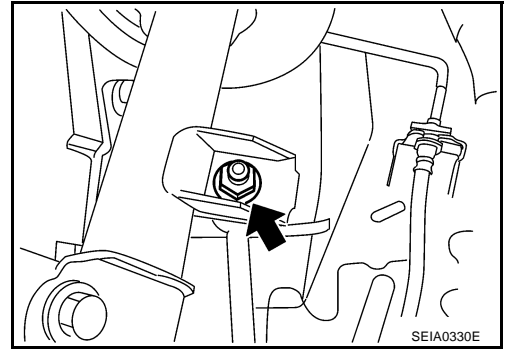
K

L

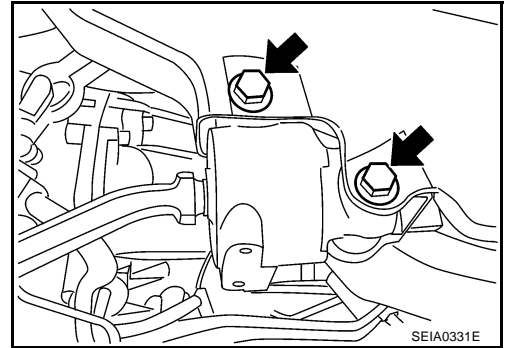
M

## FRONT SUSPENSION ASSEMBLY

16. Remove stabilizer connecting rod upper nut with power tool, separate stabilizer connecting rod and strut assembly.
17. Remove mounting nuts between engine mounting insulator and front suspension member.



18. Remove mounting bolts which are at the back of transverse link (mounting part with body) with power tool, separate transverse link.
19. Remove mounting nuts between front suspension member and body with power tool.
20. Move jack down slowly to remove front suspension member, transverse link, stabilizer bar, drive shaft (For AWD models) and steering knuckle from vehicle as a unit.
21. Remove transverse link from steering knuckle. Refer to [FSU-14, "TRANSVERSE LINK"](#).



### 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.

- After removing/installing or replacing suspension components and steering components, check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#).
- After adjusting wheel alignment, adjust neutral position of steering angle sensor. Refer to [BRC-6, "Adjustment of Steering Angle Sensor Neutral Position"](#).
- Check the following item after service.
  - Installation condition of wheel sensor harness.

# COIL SPRING AND STRUT

## COIL SPRING AND STRUT

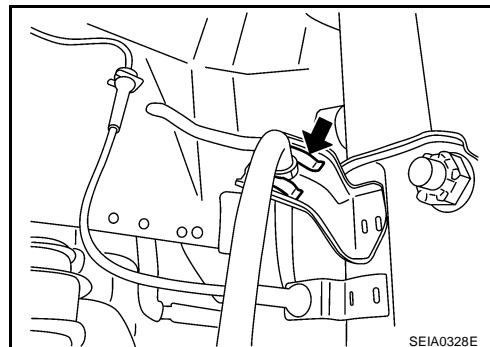
PPF:55302

### Removal and Installation

AES000N7

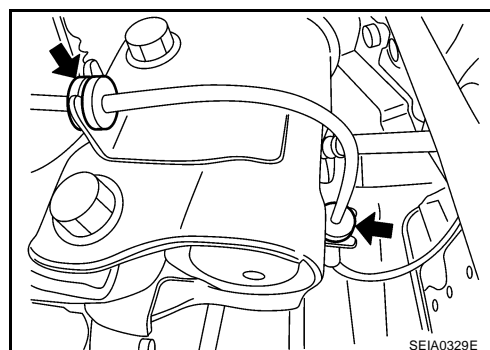
#### REMOVAL

1. Remove tire from vehicle with power tool.
2. Remove brake hose lock plate. Then remove brake hose from strut assembly.

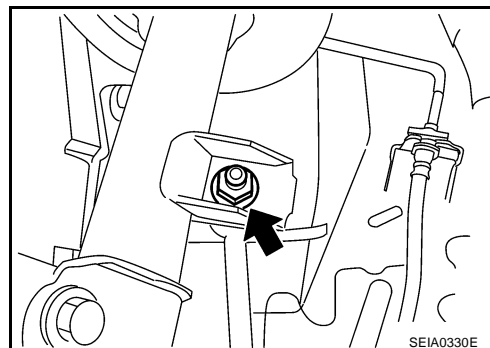


3. Remove wheel sensor harness from strut assembly.

**CAUTION:**  
Do not pull wheel sensor harness.



4. Remove stabilizer connecting rod upper nut with power tool, separate stabilizer connecting rod and strut assembly.
5. Remove fixing bolts and nuts between strut assembly and steering knuckle with power tool.
6. Remove mounting nuts on mounting insulator bracket with power tool, then remove strut upper plate, strut spacer and strut from vehicle.



#### INSTALLATION

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

##### NOTE:

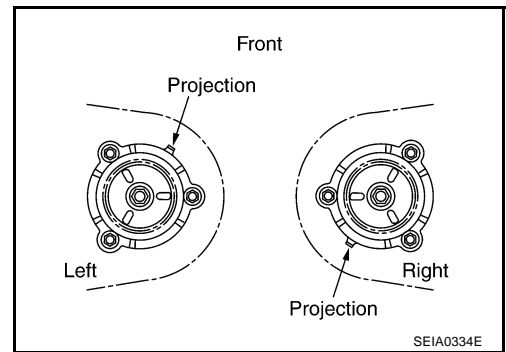
Refer to component parts location and do not reuse non-reusable parts.

- After removing/installing or replacing suspension components, check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#).
- After adjusting wheel alignment, adjust neutral position of steering angle sensor. Refer to [BRC-6, "Adjustment of Steering Angle Sensor Neutral Position"](#).
- Check the following item after service.
  - Installation condition of wheel sensor harness.

A  
B  
C  
D  
FSU  
F  
G  
H  
I  
J  
K  
L  
M

# COIL SPRING AND STRUT

- Attach strut upper plate as shown in the figure.



## Disassembly and Assembly

### DISASSEMBLY

AES000NB

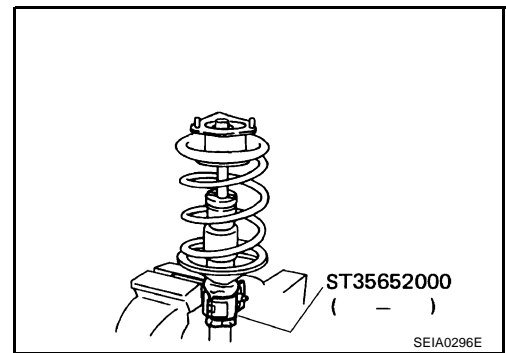
#### NOTE:

Make sure piston rod on strut is not damaged when removing components from strut assembly.

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

#### CAUTION:

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

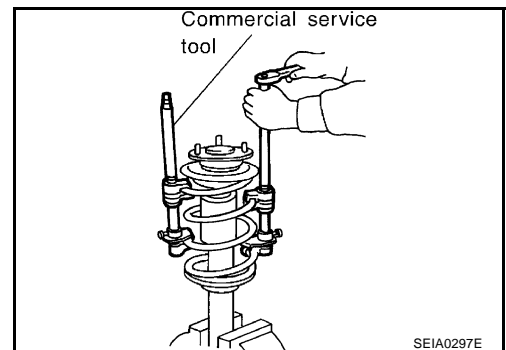


2. Using a spring compressor (commercial service tool), compress coil spring between spring upper seat and spring lower seat (on strut) until coil spring is free.

#### CAUTION:

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

3. After making sure coil spring is free between spring upper seat and spring lower seat of strut, then remove piston rod lock nut.
4. Remove mounting insulator, mounting insulator bracket, mounting bearing, spring upper seat, spring upper rubber seat, bound bumper. Then remove coil spring and spring lower rubber seat from strut.



5. Gradually release spring compressor (commercial service tool), and remove coil spring.

#### CAUTION:

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

6. Remove strut attachment (SST) from strut.

## INSPECTION AFTER DISASSEMBLY

### Strut Inspection

- Check strut 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 or damage, and replace if necessary.

# COIL SPRING AND STRUT

## ASSEMBLY

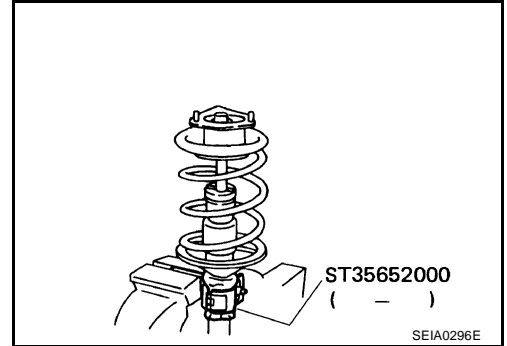
### NOTE:

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

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

### CAUTION:

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



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

### CAUTION:

- Face tube side of coil spring downward. Align lower end to spring rubber seat as shown in the figure.
- Be sure spring compressor (commercial service tool) is securely attached to coil spring. Compress coil spring.

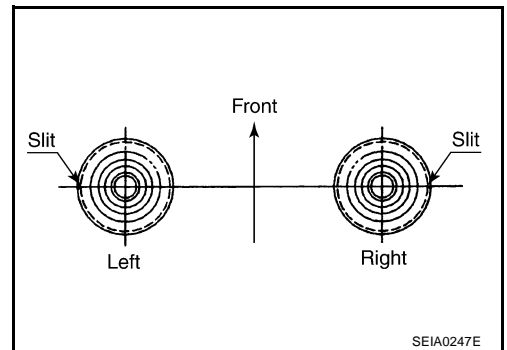
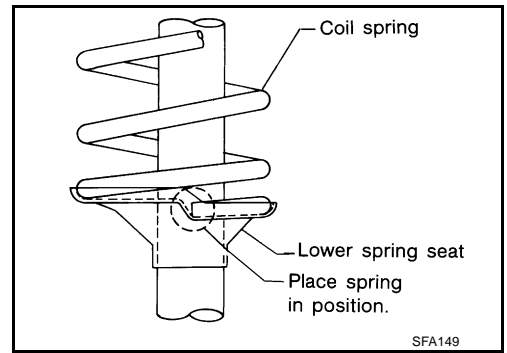
3. Apply soapy water to bound bumper and insert into mounting insulator.

### CAUTION:

**Do not use machine oil.**

4. Install mounting insulator bracket, mounting bearing, bound bumper, spring upper seat, spring upper rubber seat and spring lower rubber seat.

- Installation position of spring upper seat is as shown in the figure.



5. Fix mounting insulator, then tighten piston rod lock nut with specified torque.

### CAUTION:

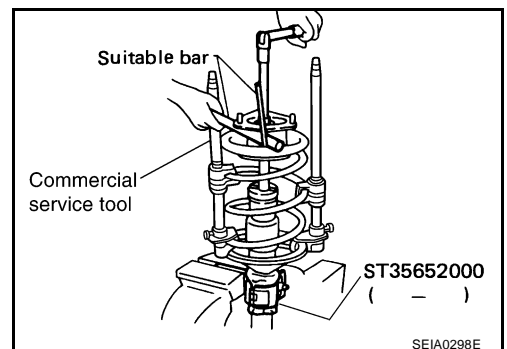
**Be careful not to deform mounting insulator bracket.**

6. Gradually release spring compressor (commercial service tool), and remove coil spring.

### CAUTION:

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

7. Remove strut attachment (SST) from strut.



A  
B  
C  
D  
FSU  
F  
G  
H  
I  
J  
K  
L  
M

# TRANSVERSE LINK

## TRANSVERSE LINK

PFP:54500

### Removal and Installation

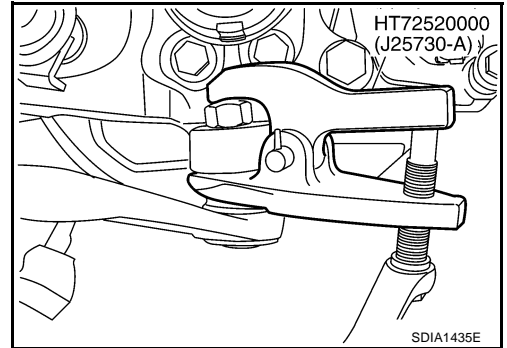
AES000N9

#### REMOVAL

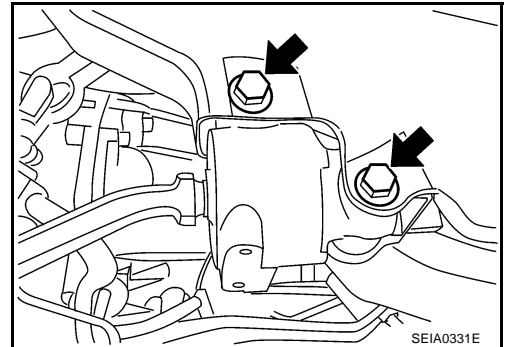
1. Remove tire from vehicle with power tool.
2. Remove undercover with power tool.
3. Remove front cross bar.
4. Remove cotter pin at transverse link, then loosen mounting nut.
5. Use a ball joint remover (SST) to remove transverse link from steering knuckle. Be careful not to damage ball joint boot.

#### **CAUTION:**

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



6. Remove mounting bolts which are at the back of transverse link (mounting part with body) with power tool, separate transverse link.
7. Remove mounting bolts which are at the front of transverse link (mounting part with front suspension member) with power tool, separate transverse link.
8. 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.
- 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.

# TRANSVERSE LINK

## Swing Torque Inspection

### NOTE:

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

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

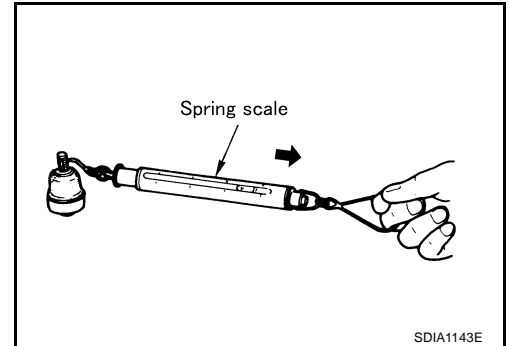
### Swing torque:

**Less than 0.5 – 4.9 N·m (0.06 – 0.49 kg·m, 5 – 43 in-lb)**

### Measure value of spring scale:

**Less than 0.5 – 4.9 N·m (0.06 – 0.49 kg·m, 5 – 43 in-lb)**

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



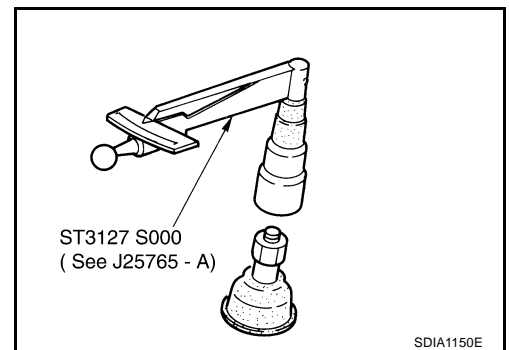
## Rotating Torque Inspection

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

### Rotating Torque:

**Less than 0.5 – 4.9 N·m (0.06 – 0.49 kg·m, 5 – 43 in-lb)**

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



## Axial End Play Inspection

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

**Axial end play : 0.1 mm (0.004 in)**

- If it is outside the specified range, replace transverse 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.

- After removing/installing or replacing suspension components, check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#).
- After adjusting wheel alignment, adjust neutral position of steering angle sensor. Refer to [BRC-6, "Adjustment of Steering Angle Sensor Neutral Position"](#).

A

B

C

D

FSU

F

G

H

I

J

K

L

M

# STABILIZER BAR

PF5:54611

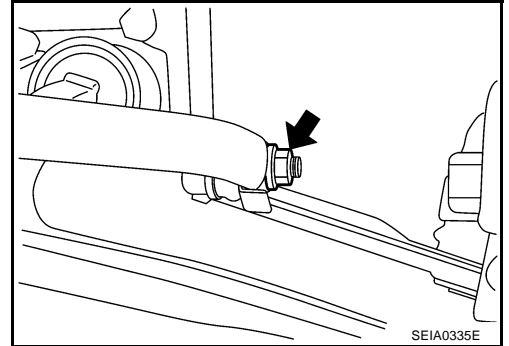
AES000NA

## STABILIZER BAR

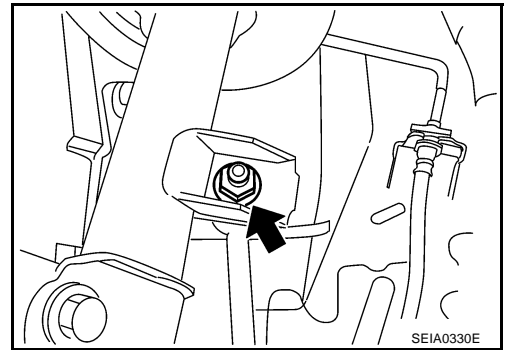
### Removal and Installation

#### REMOVAL

1. Remove tire from vehicle with power tool.
2. Remove undercover with power tool.
3. Remove stabilizer connecting rod lower nut with power tool, separate stabilizer bar and stabilizer connecting rod.
4. Remove stabilizer clamp mounting bolts and nuts with power tool.
5. Remove stabilizer bar, stabilizer clamp, stabilizer bushing from vehicle.



6. Remove stabilizer connecting rod upper nut with power tool, separate stabilizer connecting rod and strut.



#### INSPECTION AFTER REMOVAL

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

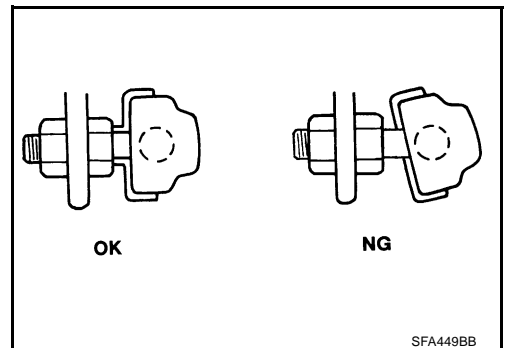
#### INSTALLATION

- 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.

- After removing/installing or replacing suspension components, check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#).
- After adjusting wheel alignment, adjust neutral position of steering angle sensor. Refer to [BRC-6, "Adjustment of Steering Angle Sensor Neutral Position"](#).
- Stabilizer bar uses pillow ball type connecting rod. Position ball joint with case on pillow ball head parallel to stabilizer bar.





# FRONT SUSPENSION MEMBER

## FRONT SUSPENSION MEMBER

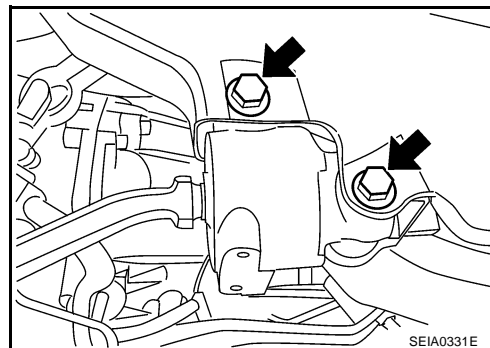
PPF:54401

AES000NB

### Removal and Installation

#### REMOVAL

1. Set engine slinger to engine, then suspend an engine.
2. Remove tire from vehicle with power tool.
3. Remove undercover with power tool.
4. Remove front cross bar.
5. Remove mounting bolts which are at the back of transverse link (mounting part with body) with power tool, separate transverse link.
6. Remove mounting bolts which are at the front of transverse link with power tool, separate transverse link.
7. Remove steering hydraulic piping bracket from front suspension member. Refer to [PS-41, "HYDRAULIC LINE"](#) .
8. Remove mounting bolts of steering gear with power tool, then hang steering gear on vehicle. Refer to [PS-19, "POWER STEERING GEAR AND LINKAGE"](#) .
9. Remove stabilizer bar from front suspension member and stabilizer connecting rod lower side with power tool.
10. Remove mounting nuts between engine mounting insulator and front suspension member.
11. Remove mounting nuts between front suspension member and body with power tool.
12. Move jack down slowly to 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.

- After removing/installing or replacing suspension components and steering components, check wheel alignment. Refer to [FSU-6, "Wheel Alignment Inspection"](#) .
- After adjusting wheel alignment, adjust neutral position of steering angle sensor. Refer to [BRC-6, "Adjustment of Steering Angle Sensor Neutral Position"](#) .

# SERVICE DATA

## SERVICE DATA

PFP:00030

### Wheel Alignment (Unladen)

AES000NC

Camber Degree minute (Decimal degree)	Minimum	- 1°29' (- 1.48°)
	Nominal	- 0°44' (- 0.73°)
	Maximum	0°01' (0.02°)
	Left and right difference	45' (0.75°) or less
Caster Degree minute (Decimal degree)	Minimum	3°02' (3.03°)
	Nominal	3°47' (3.78°)
	Maximum	4°32' (4.53°)
	Left and right difference	45' (0.75°) or less
Kingpin inclination Degree minute (Decimal degree)	Minimum	12° 20' (12.33°)
	Nominal	13° 05' (13.08°)
	Maximum	13°50' (13.83°)
Total toe-in Distance (A - B)	Minimum	0.6 mm (0.024 in)
	Nominal	1.6 mm (0.063 in)
	Maximum	2.6 mm (0.102 in)

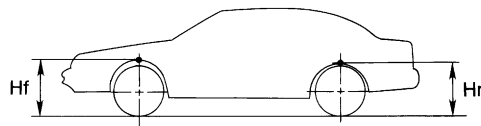
### Ball Joint

AES000ND

Axial end play	0.1 mm (0.004 in)
Swing torque	0.5 - 4.9 N·m (0.06 - 0.49 kg·m, 5 - 43 in·lb)
Measurement on spring balance	0.5 - 4.9 N·m (0.06 - 0.49 kg·m, 5 - 43 in·lb)

### Wheelarch Height (Unladen\*)

AES000OM



SFA818A

Destination	USA					Canada		
Engine	VQ35DE				VK45DE	VQ35DE		VK45DE
Axle	2WD		AWD			AWD		
Tire size	265/60R18	265/50R20	265/60R18	265/50R20		265/60R18	265/50R20	
Front (Hf)	835 mm (32.87 in)	834 mm (32.83 in)	834 mm (32.83 in)	833 mm (32.80 in)	832 mm (32.76 in)	834 mm (32.83 in)	833 mm (32.80 in)	832 mm (32.76 in)
Rear (Hr)	822 mm (32.36 in)	821 mm (32.32 in)	829 mm (32.64 in)	827 mm (32.56 in)	825 mm (32.48 in)	827 mm (32.56 in)	826 mm (32.52 in)	823 mm (32.40 in)

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