

# SECTION **RSU**

## REAR SUSPENSION

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RSU

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# PRECAUTIONS

## PRECAUTIONS

PFP:00001

### Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EES001GX

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 and SB section of this Service Manual.

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

### Precautions for Rear Suspension

EES001GY

- When installing the rubber bushings, the final tightening must be done under unladen condition and with the tires on level ground. Oil will shorten the life of the rubber bushings, so wipe off any spilled oil immediately.
- Unladen condition means the fuel tank, engine coolant and lubricants are at the full specification. The spare tire, jack, hand tools, and mats are in their designated positions.
- After installing suspension components, check the wheel alignment.
- Caulking nuts are not reusable. Always use new caulking nuts for installation. New caulking nuts are pre-oiled, do not apply any additional lubrication.

# PREPARATION

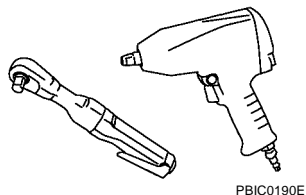
## PREPARATION

PFP:00002

### Commercial Service Tools

EES001H0

Tool name	Description
Power tool	<ul style="list-style-type: none"><li>● Removing wheel nuts</li><li>● Removing brake caliper assembly</li><li>● Removing rear suspension component parts</li></ul>



# NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

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

PFP:00003

### NVH Troubleshooting Chart

EES001H1

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

Reference page		RSU-26	RSU-35	—	—	—	RSU-26	RSU-28	RSU-42	PR-3, "NVH Troubleshooting Chart"	RFD-7, "NVH Troubleshooting Chart"	FAX-4, "NVH Troubleshooting Chart"	FSU-4, "NVH Troubleshooting Chart"	WT-4, "NVH Troubleshooting Chart"	WT-4, "NVH Troubleshooting Chart"	RAX-4, "NVH Troubleshooting Chart"	PS-5, "NVH Troubleshooting Chart"	BR-5, "NVH Troubleshooting Chart"
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	PROPELLER SHAFT	DIFFERENTIAL	FRONT AXLE	FRONT SUSPENSION	TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKES	STEERING
Symptom	Noise	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x
	Shake	x	x	x	x		x			x		x	x	x	x	x	x	x
	Vibration	x	x	x	x	x				x		x	x	x		x		x
	Shimmy	x	x	x	x			x				x	x	x	x		x	x
	Shudder	x	x	x								x	x	x	x		x	x
	Poor quality ride or handling	x	x	x	x	x		x	x			x	x	x	x			

x: Applicable

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## CAN COMMUNICATION

PFP:23710

### System Description

EES001H2

Refer to [LAN-26, "CAN COMMUNICATION"](#) .

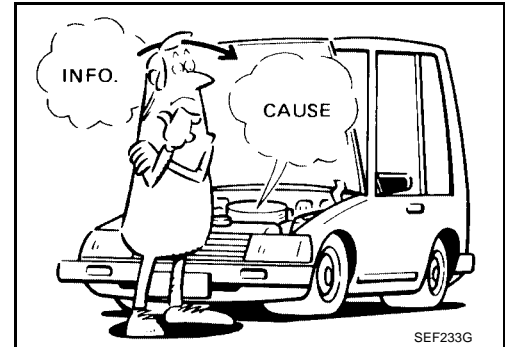
## TROUBLE DIAGNOSIS

### How to Perform Trouble Diagnoses for Quick and Accurate Repair

#### INTRODUCTION

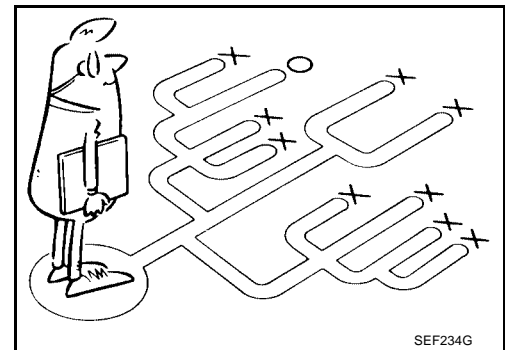
The rear load leveling air suspension system uses an electronic control unit to control major functions. The control unit accepts input signals from the height sensor and controls compressor and exhaust valve operation.

It is much more difficult to diagnose a rear load leveling air suspension system problem that occurs intermittently rather than continuously. Most intermittent problems are caused by poor electrical connections or faulty wiring. In this case, careful checking of suspicious circuits may help prevent the replacement of good parts.



Before undertaking actual checks, take just a few minutes to talk with a customer who approaches with an air suspension system complaint. The customer is a very good source of information on such problems, especially intermittent ones. Through discussion with the customer, find out what symptoms are present and under what conditions they occur.

Start your diagnosis by looking for basic mechanical problems first. This is one of the best ways to troubleshoot concerns on an air suspension system equipped vehicle. Also check related Service Bulletins for information.



#### CLARIFY CONCERN

- A customer's description of a vehicle concern may vary depending on the individual. It is important to clarify the customer's concern.
- Ask the customer about what symptoms are present under what conditions. Use this information to reproduce the symptom.

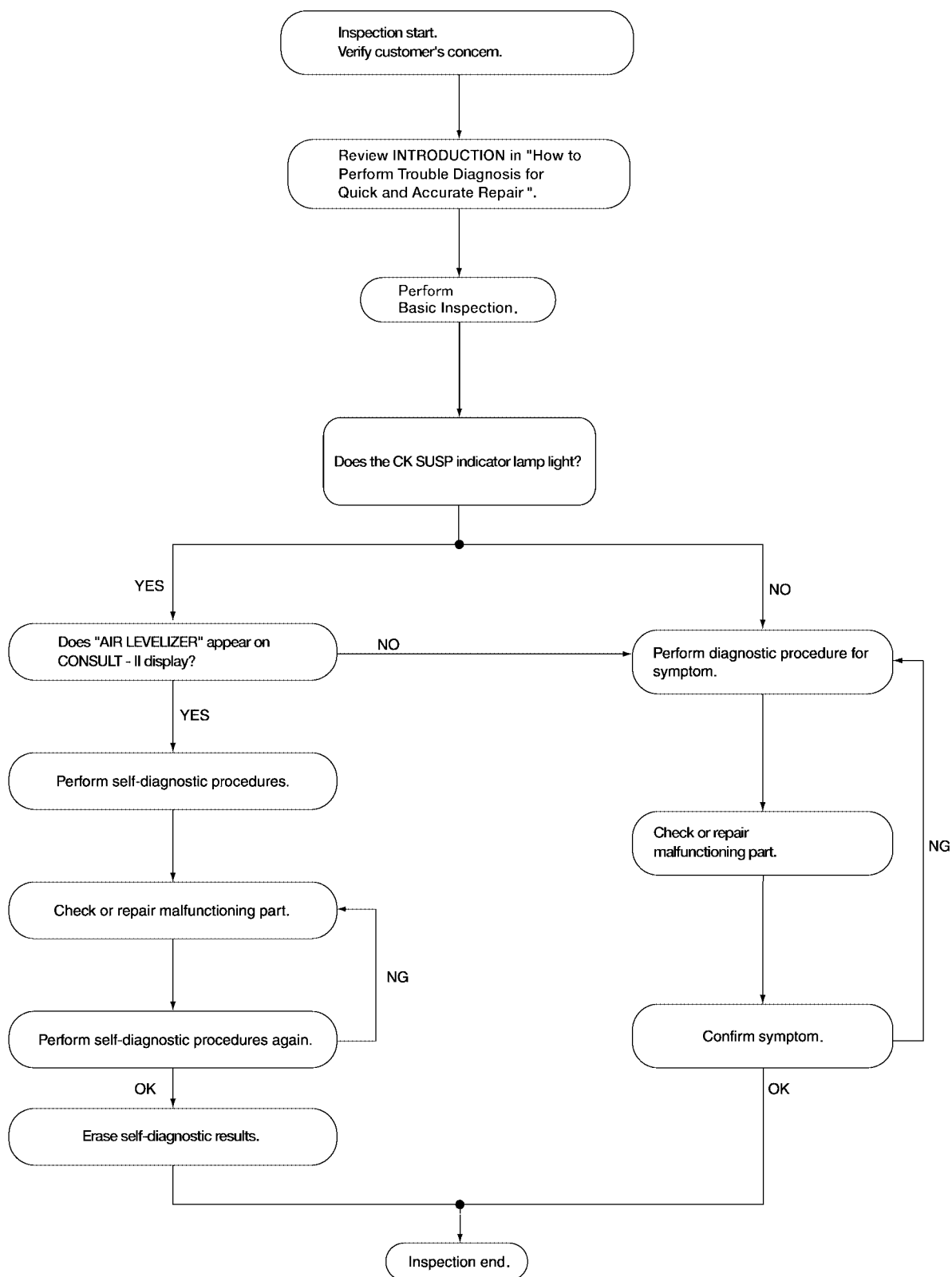
#### KEY POINTS

**WHAT** ..... Vehicle model  
**WHEN** ..... Date, Frequencies  
**WHERE** ..... Road conditions  
**HOW** ..... Operating conditions,  
 Weather conditions,  
 Symptoms

SBR339B

# TROUBLE DIAGNOSIS

## WORK FLOW



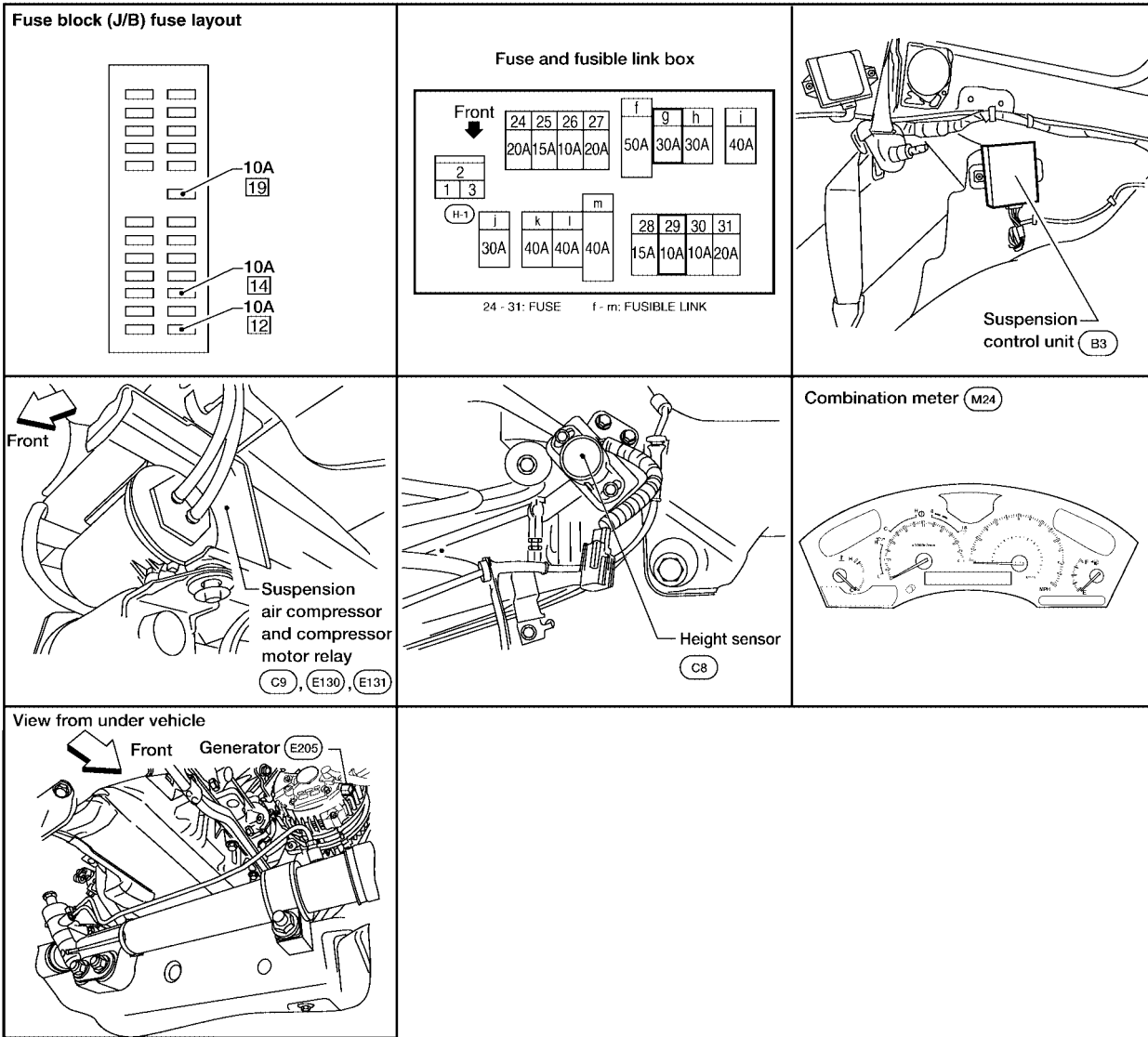
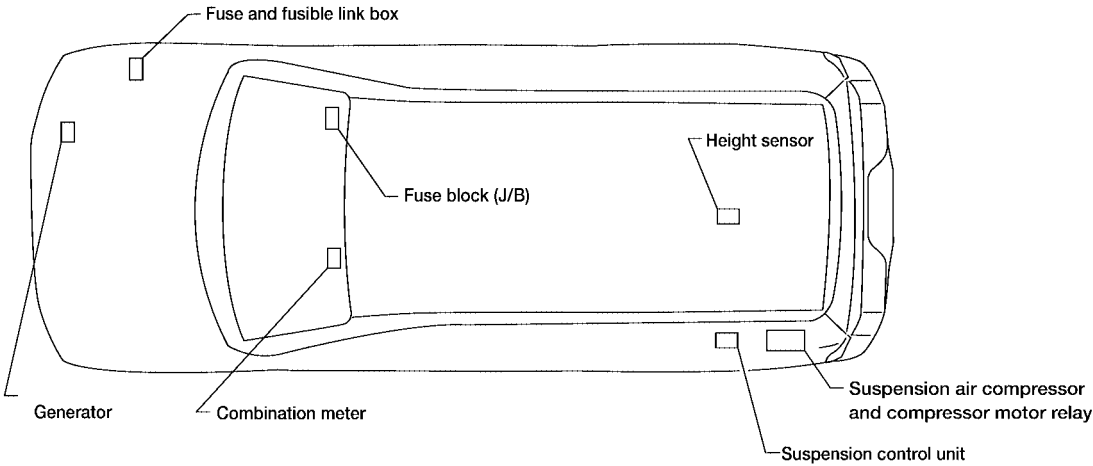
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TROUBLE DIAGNOSIS

Component Parts and Harness Connector Location

EES001H4



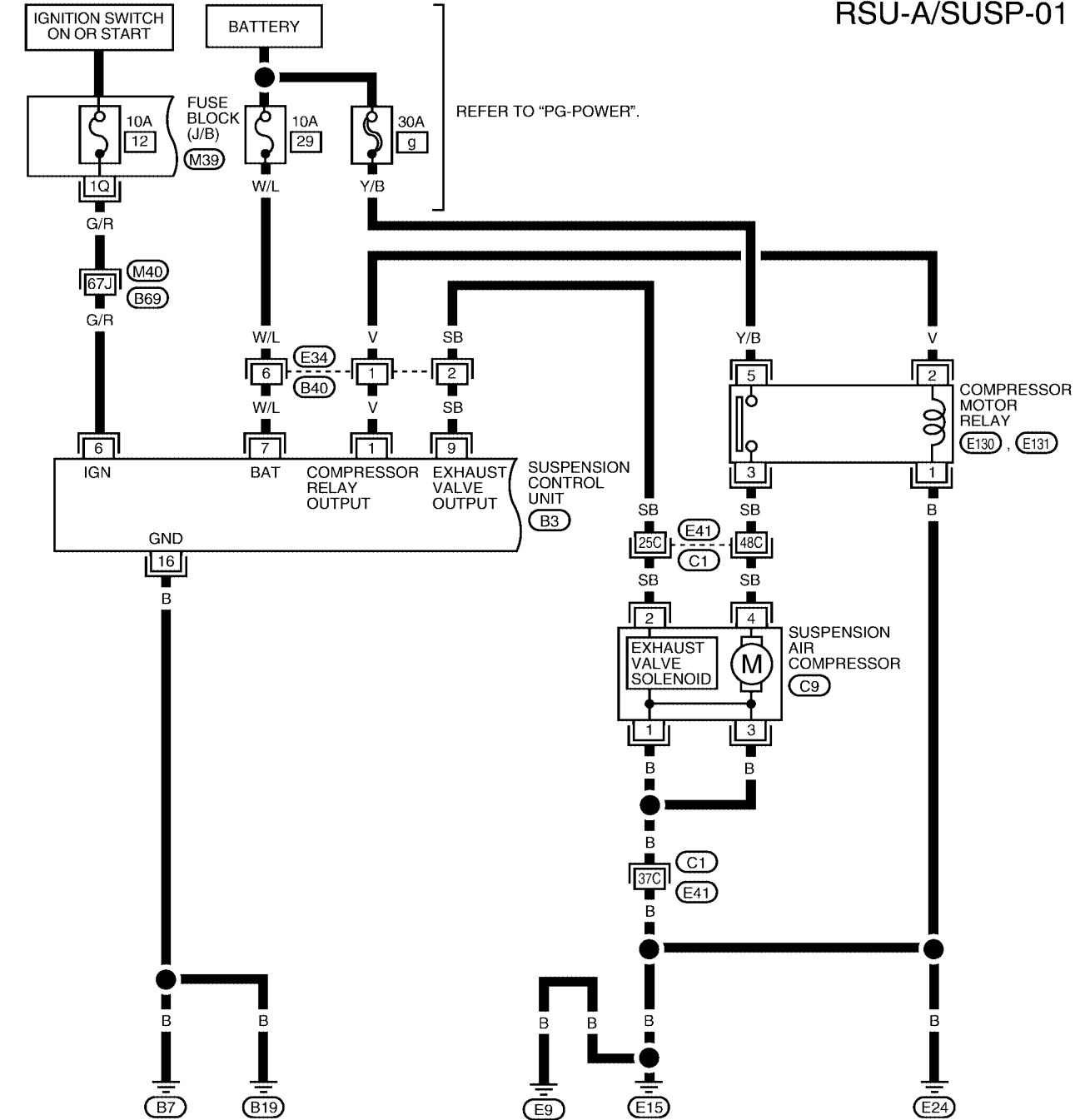
WEIA0140E

# TROUBLE DIAGNOSIS

## Wiring Diagram — A/SUSP —

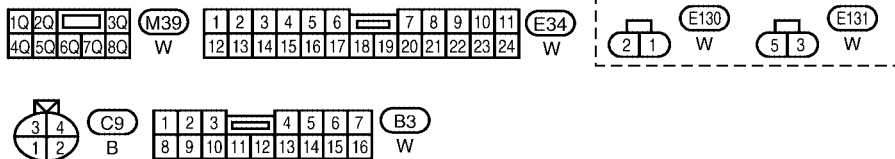
EES001H5

RSU-A/SUSP-01



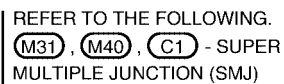
REFER TO THE FOLLOWING.

(M40, C1) - SUPER MULTIPLE JUNCTION (SMJ)



WEWA0049E

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# TROUBLE DIAGNOSIS

## Basic Inspection

EES001H6

### AIR HOSES

1. Check for pinched or damaged air hoses between the suspension air reservoir and each load leveling rear air suspension shock absorber. Reposition, repair or replace hoses as necessary.
2. Check the air hose connections at the suspension air reservoir and at the shock absorbers for leaks. If connections are leaking, repair or replace hoses as necessary.

### POWER SYSTEM TERMINAL LOOSENESS AND BATTERY INSPECTION

Make sure the battery positive cable, negative cable and ground connection are not loose. In addition, make sure the battery is sufficiently charged.

### CK SUSP INDICATOR LAMP INSPECTION

1. Make sure the CK SUSP indicator lamp turns on for approximately 2 seconds when the ignition switch is turned ON. If it does not, check the combination meter. Refer to [DI-5, "COMBINATION METERS"](#).
2. Make sure the lamp turns off approximately 2 seconds after the ignition switch is turned ON. If the lamp does not turn off, conduct self-diagnosis of the suspension control unit.
3. After conducting the self-diagnosis, be sure to erase the error memory. Refer to [RSU-13, "CONSULT-II Function \(AIR LEVELIZER\)"](#).

### CK SUSP Indicator Lamp Timing

EES001H7

Condition	CK SUSP indicator lamp	Remarks
Ignition switch OFF	—	—
Ignition switch ON	X	Turns off after approximately 2 seconds.

X: ON

—: OFF

### Control Unit Input/Output Signal Standard

EES001H8

Terminal No.	Wire color	Item	Condition	Voltage (V) (Approx.)
1	V	Compressor relay output	Ignition switch ON or START	Battery voltage
3	W	Height sensor signal input		0.2V - 4.8V
5	R	Reference voltage		5V
6	G/R	Ignition power		Battery voltage
7	W/L	Battery power	—	—
8	G/W	Diagnostic K-line	—	—
9	SB	Exhaust valve output	Ignition switch ON or START	Battery voltage
10	BR	Warning lamp output	—	—
14	L	Height sensor ground	—	—
15	BR/W	Generator L signal input	Engine running	—
16	B	Suspension control unit ground	—	0V

# TROUBLE DIAGNOSIS

## CONSULT-II Function (AIR LEVELIZER)

EES001H9

CONSULT-II can display each diagnostic item using the diagnostic test modes shown following.

AIR LEVELIZER diagnostic mode	Description
WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
SELF-DIAG RESULTS	Displays suspension control unit self-diagnosis results.
DATA MONITOR	Displays suspension control unit input/output data in real time.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
ECU PART NUMBER	Suspension control unit part number can be read.

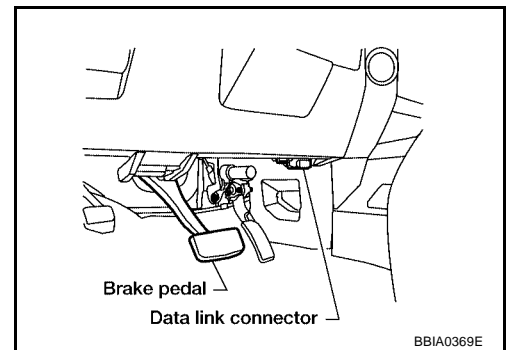
### CONSULT-II OPERATION

1. Turn ignition switch OFF.
2. Connect CONSULT-II and CONSULT-II CONVERTER to the data link connector.

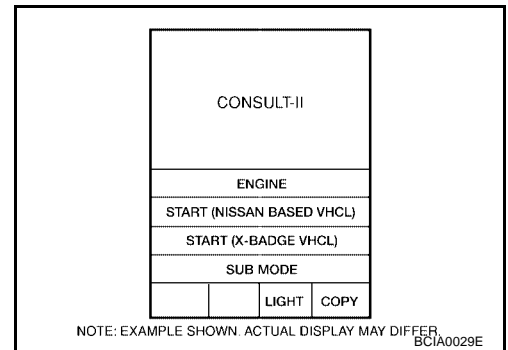
#### CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

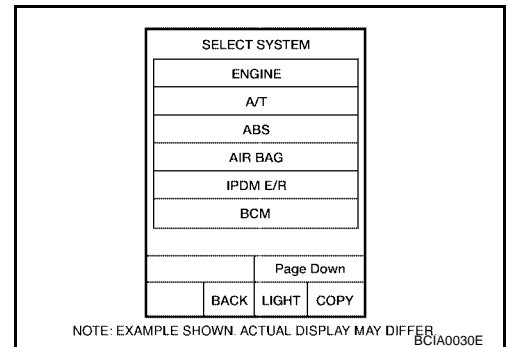
3. Turn ignition switch ON.



4. Touch "START (NISSAN BASED VHCL)".

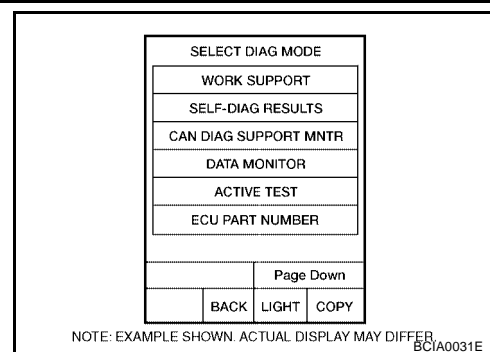


5. Touch "AIR LEVELIZER" in the "SELECT SYSTEM" screen. If "AIR LEVELIZER" is not indicated, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



# TROUBLE DIAGNOSIS

- Select the required operation from the "SELECT DIAG MODE" screen.  
For further information, see the CONSULT-II Operation Manual.



## SELF-DIAGNOSIS

### Description

If an error is detected in the system, perform self-diagnosis as follows:

### Operation Procedure

- Turn ignition switch OFF.
- Connect CONSULT-II and CONSULT-II CONVERTER to the data link connector.  
**CAUTION:**  
**If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.**
- Turn ignition switch ON.
- With the engine running, touch "START (NISSAN BASED VHCL)", "AIR LEVELIZER", "SELF-DIAG RESULTS" in order on the CONSULT-II screen.  
**CAUTION:**  
**When "START (NISSAN BASED VHCL)" is touched immediately after starting the engine or turning on the ignition switch, "AIR LEVELIZER" might not be displayed in the "SELECT SYSTEM" screen. In this case, repeat the operation from step 4.**
- The self-diagnostic results are displayed. (If necessary, the self-diagnostic results can be printed out by touching "COPY".)  
  - When "NO DTC IS DETECTED" is displayed, check the CK SUSP indicator lamp.
- Conduct the appropriate inspection from the display item list, and repair or replace the malfunctioning component.
- Start and run the vehicle for approximately 1 minute.
- Turn ignition switch OFF to prepare for erasing the memory.
- Start the engine and touch "START (NISSAN BASED VHCL)", "AIR LEVELIZER", "SELF-DIAG RESULTS", "ERASE" in order on the CONSULT-II screen to erase the error memory.  
If "AIR LEVELIZER" is not indicated, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).
- CAUTION:**  
**If the error memory is not erased, re-conduct the operation from step 7.**
- For the final inspection, start and run the vehicle for approximately 1 minute and confirm that the CK SUSP indicator lamp is off.

### Display Item List

Self-diagnostic item	Malfunction detecting condition	Check system
Vehicle height sensor [C1801]	Vehicle height sensor voltage is less than 0.2V or greater than 4.8V for more than 60 seconds.	Refer to <a href="#">RSU-18, "Height Sensor System Inspection"</a> .
Compressor relay [C1802]	<ol style="list-style-type: none"> <li>Driving transistor for compressor relay is off and monitor voltage continues high level for more than 10 seconds.</li> <li>Driving transistor for compressor relay is on and monitor voltage continues low level for more than 5 seconds.</li> </ol>	Refer to <a href="#">RSU-21, "Compressor Motor, Compressor Motor Relay and Circuit Inspection"</a> .
Exhaust solenoid [C1803]	<ol style="list-style-type: none"> <li>Driving transistor for exhaust solenoid is off and monitor voltage continues high level for more than 10 seconds.</li> <li>Driving transistor for exhaust solenoid is on and monitor voltage continues low level for more than 5 seconds.</li> </ol>	Refer to <a href="#">RSU-19, "Exhaust Valve Solenoid System Inspection"</a> .

# TROUBLE DIAGNOSIS

Self-diagnostic item	Malfunction detecting condition	Check system
Vehicle height adjusting trouble (compressor) [C1804]	Continuous compressor relay ON time is more than 120 seconds.	Refer to <a href="#">RSU-21, "Compressor Motor, Compressor Motor Relay and Circuit Inspection"</a> .
Vehicle height adjusting trouble (exhaust solenoid) [C1805]	Continuous exhaust solenoid ON time is more than 120 seconds.	Refer to <a href="#">RSU-19, "Exhaust Valve Solenoid System Inspection"</a> .
Vehicle height sensor locking trouble [C1806]	Output sensor voltage variation $\pm 0.02V$ is more than 100 hour when vehicle height range is normal.	Refer to <a href="#">RSU-18, "Height Sensor System Inspection"</a> .
Sensor 5V trouble [C1807]	Sensor reference voltage is less than 0.8V or more than 6V for 20 seconds.	Refer to <a href="#">RSU-18, "Height Sensor System Inspection"</a> .
Integral time trouble by supplying air [C1808]	Integral discontinuous time on the compressor is more than 180 seconds.	Refer to <a href="#">RSU-21, "Compressor Motor, Compressor Motor Relay and Circuit Inspection"</a> .

## WORK SUPPORT

### Operation Procedure

- After turning OFF the ignition switch, connect CONSULT-II and the CONSULT-II CONVERTER to the data link connector.

#### CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

- Touch "START (NISSAN BASED VHCL)", "AIR LEVELIZER", "WORK SUPPORT" in order on the CONSULT-II screen.

If "AIR LEVELIZER" is not indicated, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .

#### CAUTION:

When "START (NISSAN BASED VHCL)" is touched immediately after starting the engine or turning on the ignition switch, "AIR LEVELIZER" might not be displayed in the "SELECT SYSTEM" screen. In this case, repeat the operation from step 2.

- Select "STANDARD HEIGHT LEVEL", "ADJUST HEIGHT INI" or "CLEAR HEIGHT INI" on the "SELECT WORK ITEM" screen.

#### NOTE:

Read and perform screen instructions if "STANDARD HEIGHT LEVEL" or "ADJUST HEIGHT INI" is selected.

- Touch "START" to begin the desired work support.

### Display Item List

Item	Description	Condition
STANDARD HEIGHT LEVEL	Resets the vehicle height to the initialization flag setting stored in the suspension control unit.	Vehicle unladen <a href="#">RSU-49, "Wheelarch Height (Unladen*1)"</a> , set in a horizontal position and not moving. <b>NOTE:</b> Do not take your eyes off the vehicle while CONSULT-II is processing.
ADJUST HEIGHT INI	Sets the height initialization flag in the suspension control unit when the control unit has been replaced or when the initialization flag has been cleared using the "CLEAR HEIGHT INI" procedure.	Vehicle unladen <a href="#">RSU-49, "Wheelarch Height (Unladen*1)"</a> . Move vehicle forward and backward approx. 5 m (16.4 ft) and rock vehicle from side to side. <b>NOTE:</b> Do not move vehicle while CONSULT-II is processing.
CLEAR HEIGHT INI	Clears the initialization flag in the suspension control unit.	Vehicle unladen <a href="#">RSU-49, "Wheelarch Height (Unladen*1)"</a> .

# TROUBLE DIAGNOSIS

## DATA MONITOR

### Operation Procedure

1. After turning OFF the ignition switch, connect CONSULT-II and the CONSULT-II CONVERTER to the data link connector.

**CAUTION:**

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

2. Touch "START (NISSAN BASED VHCL)", "AIR LEVELIZER", "DATA MONITOR" in order on the CONSULT-II screen.

If "AIR LEVELIZER" is not indicated, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .

**CAUTION:**

When "START (NISSAN BASED VHCL)" is touched immediately after starting the engine or turning on the ignition switch, "AIR LEVELIZER" might not be displayed in the "SELECT SYSTEM" screen. In this case, repeat the operation from step 2.

3. Return to the "SELECT MONITOR ITEM" screen, and touch "ALL SIGNALS" or "SELECTION FROM MENU". Refer to the following information.
4. When "START" is touched, the data monitor screen is displayed.

### Display Item List

Test Item	Data monitor item selection	
	ALL SIGNALS	SELECTION FROM MENU
HEIGT SEN	X	X
HEIGT CALC	X	X
SEN FIX TIME	X	X
HEIGT INI VAL	X	X
COMPRESSOR	X	X
EXH SOLENOID	X	X
ACG L	X	X

X: Applicable

–: Not applicable

## ACTIVE TEST

**CAUTION:**

- Do not perform active test while driving.

### Operation Procedure

1. Connect the CONSULT-II and CONSULT-II CONVERTER to the data link connector and start the engine.

**CAUTION:**

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

2. Touch "START (NISSAN BASED VHCL)" on the display screen.

3. Touch "AIR LEVELIZER".

If "AIR LEVELIZER" is not indicated, go to [GI-40, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .

4. Touch "ACTIVE TEST".

5. The "SELECT TEST ITEM" screen is displayed.

6. Touch necessary test item.

7. With the "MAIN SIGNALS" display highlighted, touch "START".

8. The active test screen will be displayed.

### Display Item List

Test Item	Description
COMPRESSOR	OFF/ON



# TROUBLE DIAGNOSIS

Test Item	Description
EXHAUST SOLENOID	OFF/ON
WARNING LAMP	OFF/ON

**CAUTION:**

The "COMPRESSOR" active test will remain ON until it is turned off using CONSULT-II. Allowing the compressor to run for an extended period of time may cause damage to air suspension system components due to excessive pressure in the air suspension system.

**NOTE:**

- "TEST IS STOPPED" is displayed approximately 10 seconds after operation starts for all active test items except "COMPRESSOR".
- After "TEST IS STOPPED" is displayed, to perform test again, repeat Step 6.

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K  
L  
M

# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

## TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

PFP:00000

### Height Sensor System Inspection

EES001HA

#### INSPECTION PROCEDURE

#### 1. SELF-DIAGNOSIS RESULT CHECK

Check self-diagnosis results.

Self-diagnosis results
C1801
C1806
C1807

Is the above displayed in the self-diagnosis display items?

YES >> GO TO 3.

NO >> GO TO 2.

#### 2. DATA MONITOR CHECK

Conduct data monitor of "HEIGT SEN" to check if the status is normal.

HEIGT SEN	0.2V - 4.8V
-----------	-------------

OK or NG

OK >> Inspection End.

NG >> GO TO 3.

#### 3. CONNECTOR INSPECTION

1. Disconnect suspension control unit connector B3 and height sensor C8.
2. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> GO TO 4.

NG >> Repair or replace as necessary.

#### 4. CHECK HEIGHT SENSOR POWER

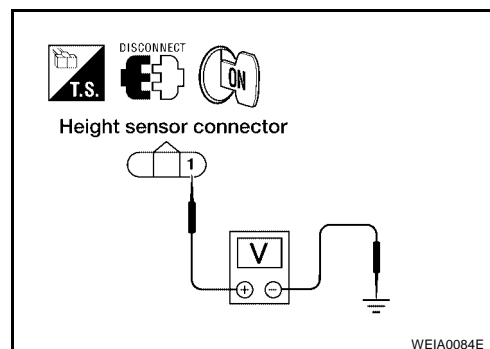
1. Reconnect the suspension control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between height sensor connector C8 terminal 1 and ground.

**Voltage : Approx. 5V**

OK or NG

OK >> GO TO 5.

NG >> Check harness or connector for open or short. If OK, replace suspension control unit. Refer to [RSU-47](#).  
["CONTROL UNIT"](#).



# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

## 5. CHECK HEIGHT SENSOR GROUND

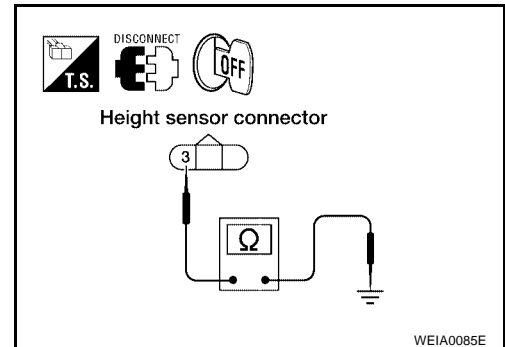
- Turn ignition switch OFF.
- Check continuity between height sensor connector C8 terminal 3 and ground.

**3 - Ground**

**Continuity should exist.**

OK or NG

- OK >> GO TO 6.  
NG >> Repair harness or connector.

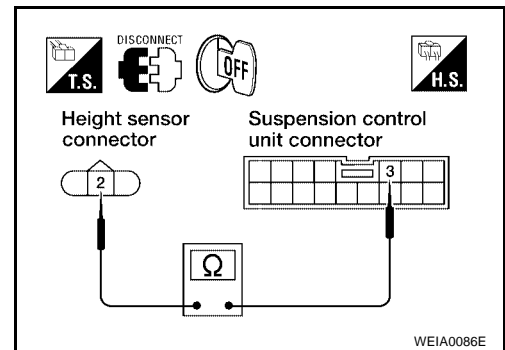


## 6. CHECK HEIGHT SENSOR SIGNAL CIRCUIT

- Disconnect suspension control unit connector.
- Check continuity between height sensor connector C8 terminal 2 and suspension control unit connector B3 terminal 3.

**2 - 3**

**Continuity should exist.**



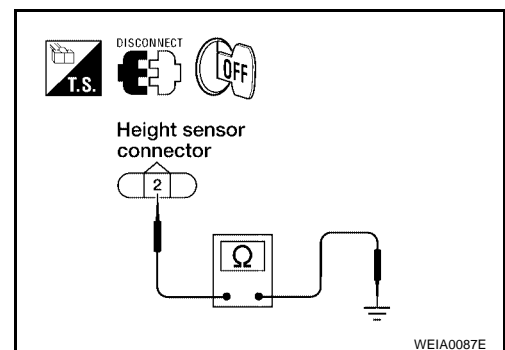
- Check continuity between height sensor connector C8 terminal 2 and ground.

**2 - Ground**

**Continuity should not exist.**

OK or NG

- OK >> Replace the height sensor. Refer to [RSU-45, "HEIGHT SENSOR"](#) .  
NG >> Repair harness or connector.



## Exhaust Valve Solenoid System Inspection

### INSPECTION PROCEDURE

#### 1. SELF-DIAGNOSIS RESULT CHECK

Check self-diagnosis results.

Self-diagnosis results
C1803
C1805

Is the above displayed in the self-diagnosis display items?

- YES >> If code C1803 was retrieved during self-diagnosis, GO TO 3. If code C1805 was retrieved during self-diagnosis, GO TO 2.  
NO >> Inspection End.

# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

## 2. CHECK SYSTEM OPERATION

1. Load vehicle to standard laden condition (with driver, front passenger, 2 passengers in second row seats and no cargo).
2. Conduct active test of "COMPRESSOR" to raise vehicle ride height to +20mm.

### CAUTION:

The "COMPRESSOR" active test will remain ON until it is turned off using CONSULT-II. Allowing the compressor to run for an extended period of time may cause damage to air suspension system components due to excessive pressure in the air suspension system.

3. Return the rear load leveling air suspension system to normal operating mode.
4. Check self-diagnostic results.

Is code C1805 displayed again?

- YES >> GO TO 3.  
NO >> Inspection End.

## 3. CONNECTOR INSPECTION

1. Disconnect suspension control unit connector B3 and suspension air compressor C9.
2. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

- OK >> If code C1805 was retrieved during self-diagnosis, GO TO 4. If code C1803 was retrieved during self-diagnosis, GO TO 6.  
NG >> Repair or replace as necessary.

## 4. AIR HOSE INSPECTION

Inspect for pinched or damaged air hoses between the suspension air reservoir and each load leveling rear air suspension shock absorber.

OK or NG

- OK >> GO TO 5.  
NG >> Repair or replace as necessary.

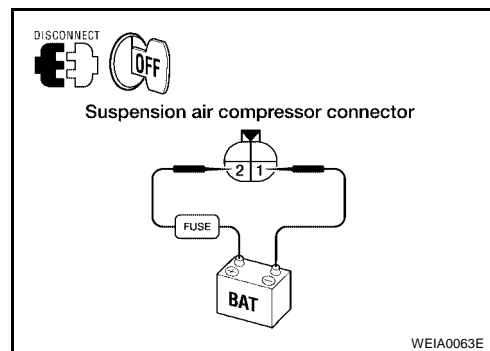
## 5. EXHAUST VALVE SOLENOID INSPECTION

Apply 12V to suspension air compressor terminal 2 and ground to suspension air compressor terminal 1.

**System air pressure should vent.**

OK or NG

- OK >> GO TO 6.  
NG >> Replace the suspension air compressor. Refer to [RSU-43, "REAR LOAD LEVELING AIR SUSPENSION COMPRESSOR ASSEMBLY"](#).

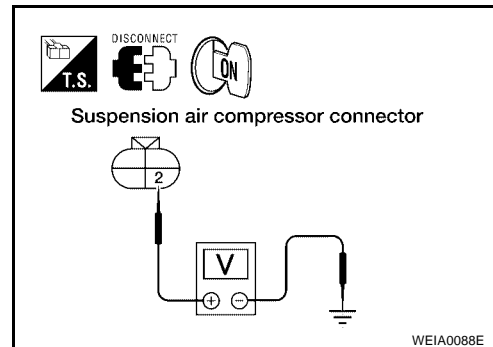


# TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

## 6. CHECK EXHAUST VALVE SOLENOID POWER AND GROUND

1. Reconnect the suspension control unit connector.
2. Turn the ignition switch ON.
3. Check voltage between suspension air compressor connector C9 terminal 2 and ground.

**Voltage** : **Approx. 12V**

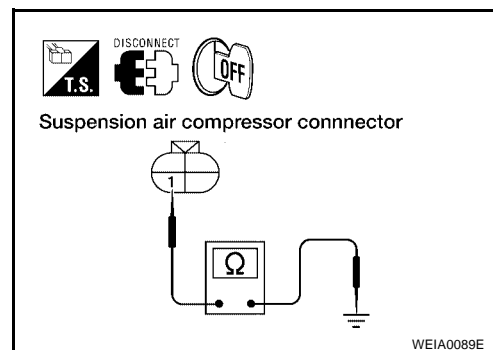


4. Turn ignition switch OFF.
5. Check continuity between suspension air compressor connector C9 terminal 1 and ground.

**1 - Ground** **Continuity should exist.**

**OK or NG**

- OK >> Replace the suspension control unit. Refer to [RSU-47](#), "[CONTROL UNIT](#)".
- NG >> Repair harness or connector.



## Compressor Motor, Compressor Motor Relay and Circuit Inspection

EES001HC

### INSPECTION PROCEDURE

#### 1. SELF-DIAGNOSIS RESULT CHECK

Check self-diagnosis results.

Self-diagnosis results
C1802
C1804
C1808

Is the above displayed in the self-diagnosis display items?

- YES >> If code C1802 was retrieved during self-diagnosis, GO TO 3. If code C1804 or C1808 was retrieved during self-diagnosis, GO TO 2.
- NO >> Inspection End.

#### 2. CHECK SYSTEM OPERATION

1. Load vehicle to standard laden condition (with driver, front passenger, 2 passengers in second row seats and no cargo).
2. Conduct active test of "EXHAUST SOLENOID" to lower vehicle ride height to -20mm.
3. Return the rear load leveling air suspension system to normal operating mode.
4. Check self-diagnostic results.

Is code C1804 or C1808 displayed again?

- YES >> GO TO 3.
- NO >> Inspection End.

## TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

### 3. CONNECTOR INSPECTION

1. Disconnect suspension control unit connector B3 and suspension air compressor C9.
2. Check the terminals for deformation, disconnection, looseness or damage.

OK or NG

OK >> If code C1804 or C1808 was retrieved during self-diagnosis, GO TO 4. If code C1802 was retrieved during self-diagnosis, GO TO 6.

NG >> Repair or replace as necessary.

### 4. AIR HOSE INSPECTION

Inspect for pinched or damaged air hoses between the suspension air reservoir and each load leveling rear air suspension shock absorber.

OK or NG

OK >> GO TO 5.

NG >> Repair or replace as necessary.

### 5. SUSPENSION AIR COMPRESSOR INSPECTION

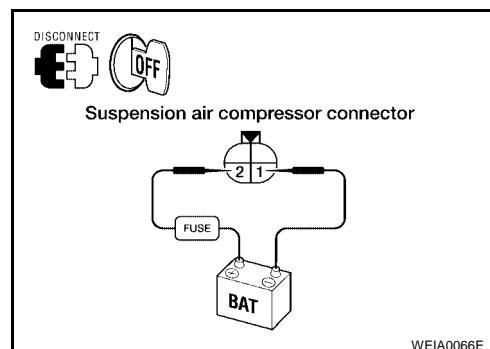
Apply 12V to suspension air compressor terminal 2 and ground to suspension air compressor terminal 1.

**System air pressure should vent.**

OK or NG

OK >> GO TO 6.

NG >> Replace the suspension air compressor. Refer to [RSU-43, "REAR LOAD LEVELING AIR SUSPENSION COMPRESSOR ASSEMBLY"](#).



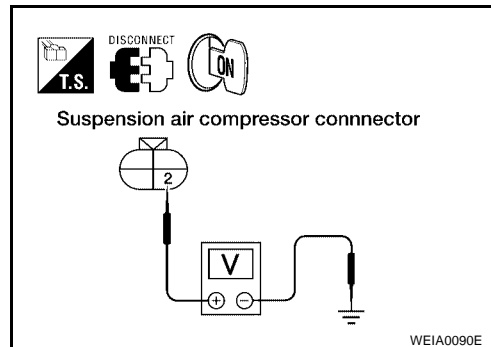
WEIA0066E

## TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

### 6. CHECK SUSPENSION AIR COMPRESSOR POWER AND GROUND

1. Connect suspension control unit connector B3.
2. Turn the ignition switch ON.
3. Check voltage between suspension air compressor connector C9 terminal 2 and ground.

**Voltage** : **Approx. 12V**

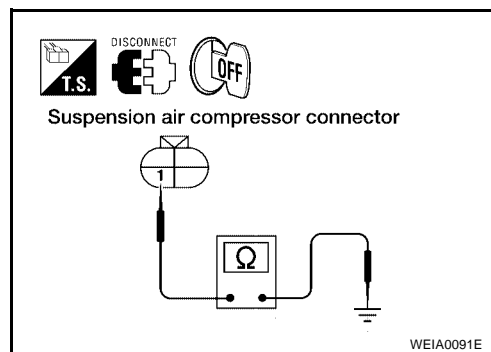


4. Turn ignition switch OFF.
5. Check continuity between suspension air compressor connector C9 terminal 1 and ground.

**1 - Ground** **Continuity should exist.**

OK or NG

- OK >> Replace the suspension control unit. Refer to [RSU-47](#), "[CONTROL UNIT](#)".
- NG >> Repair harness or connector.



# TROUBLE DIAGNOSES FOR SYMPTOMS

## TROUBLE DIAGNOSES FOR SYMPTOMS

PFP:99999

### Load Leveling Rear Air Suspension System Does Not Operate

EES001HD

#### 1. CHECK WARNING LAMP ACTIVATION

Make sure warning lamp remains off while driving.

OK or NG

OK >> GO TO 2.

NG >> Carry out self-diagnosis. Refer to [RSU-14, "SELF-DIAGNOSIS"](#).

#### 2. CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not blown.

Unit	Terminals	Signal name	Fuse and fusible link No.
Suspension control unit	6	Ignition switch ON or START	12 (10A)
	7	Battery power	29 (10A)
Compressor motor relay	5		g (30A)
Combination meter	24	Ignition switch ON or START	14 (10A)
	8	Battery power	19 (10A)

OK or NG

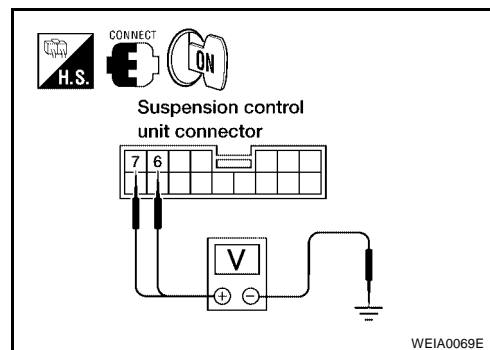
OK >> GO TO 3.

NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#).

#### 3. CHECK SUSPENSION CONTROL UNIT POWER AND GROUND

1. Turn the ignition switch ON.
2. Check voltage between suspension control unit connector B3 terminal 6 and ground and between suspension control unit connector B3 terminal 7 and ground.

**Voltage : Approx. 12V**



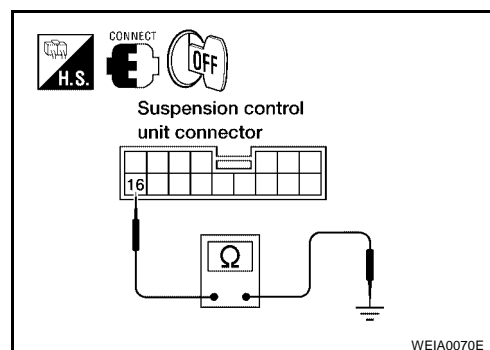
3. Turn the ignition switch OFF.
4. Check continuity between suspension control unit connector B3 terminal 16 and ground.

**16 - Ground Continuity should exist.**

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.





## TROUBLE DIAGNOSES FOR SYMPTOMS

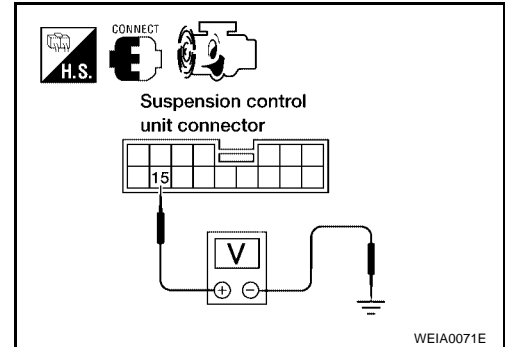
### 4. CHECK GENERATOR SIGNAL INPUT

1. Start the engine.
2. Check voltage between suspension control unit connector B3 terminal 15 and ground.

**Voltage** : Approx. 12V

OK or NG

- OK >> Replace the suspension control unit. Refer to [RSU-47, "CONTROL UNIT"](#).
- NG >> Repair the circuit.



### CK SUSP Indicator Lamp Stays On When Ignition Switch Is Turned On

EES001HE

RSU

### 1. CARRY OUT SELF-DIAGNOSIS

Carry out self-diagnosis. Refer to [RSU-14, "SELF-DIAGNOSIS"](#).

Are malfunctions detected in self-diagnosis?

- YES >> Refer to [RSU-16, "Display Item List"](#).
- NO >> Refer to [DI-31, "WARNING LAMPS"](#).

# REAR SUSPENSION ASSEMBLY

## REAR SUSPENSION ASSEMBLY

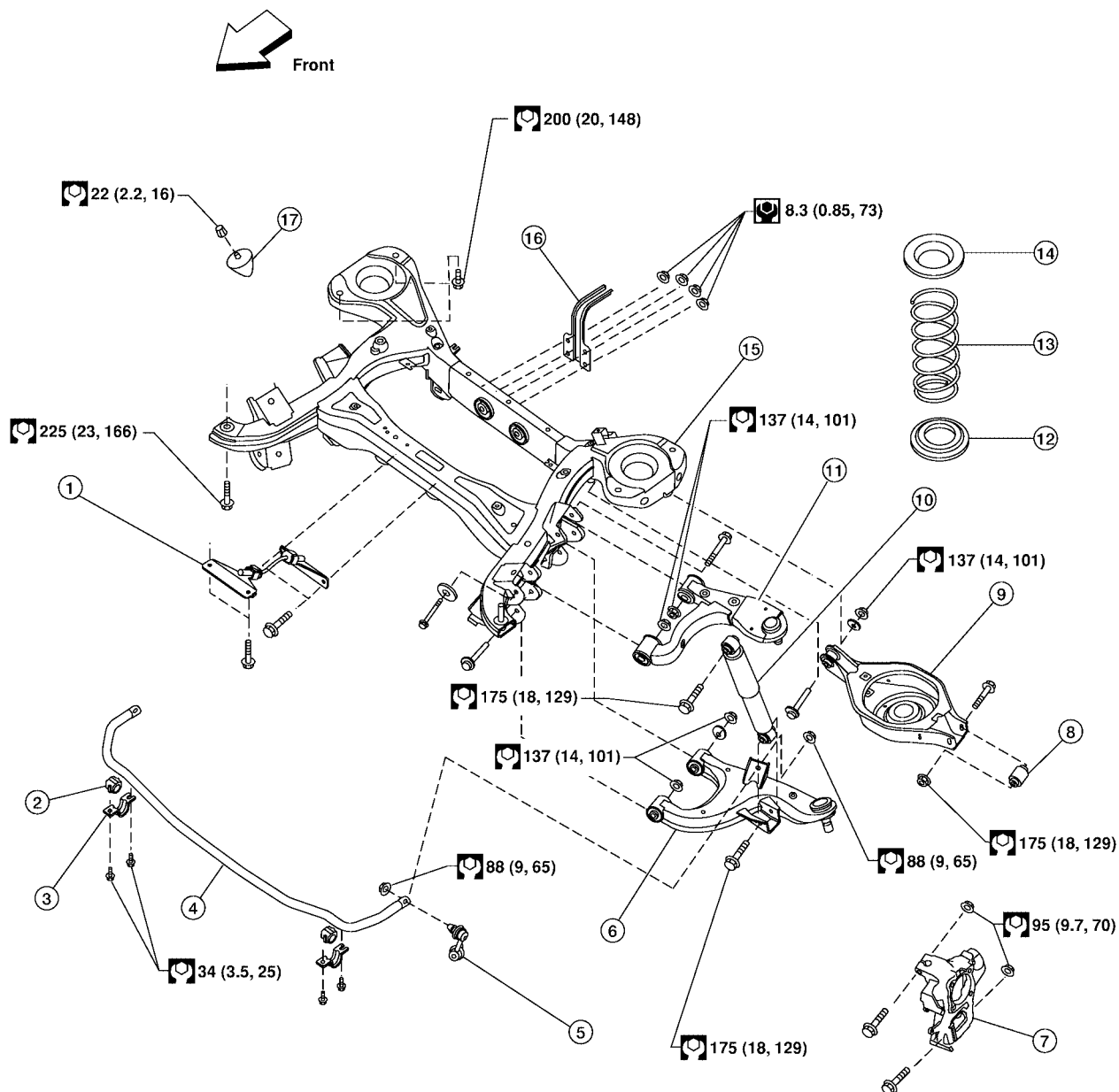
PFP:55020

### Components

EES001HF

### Rear Suspension

SEC. 431 • 432



N·m (kg-m, in-lb)

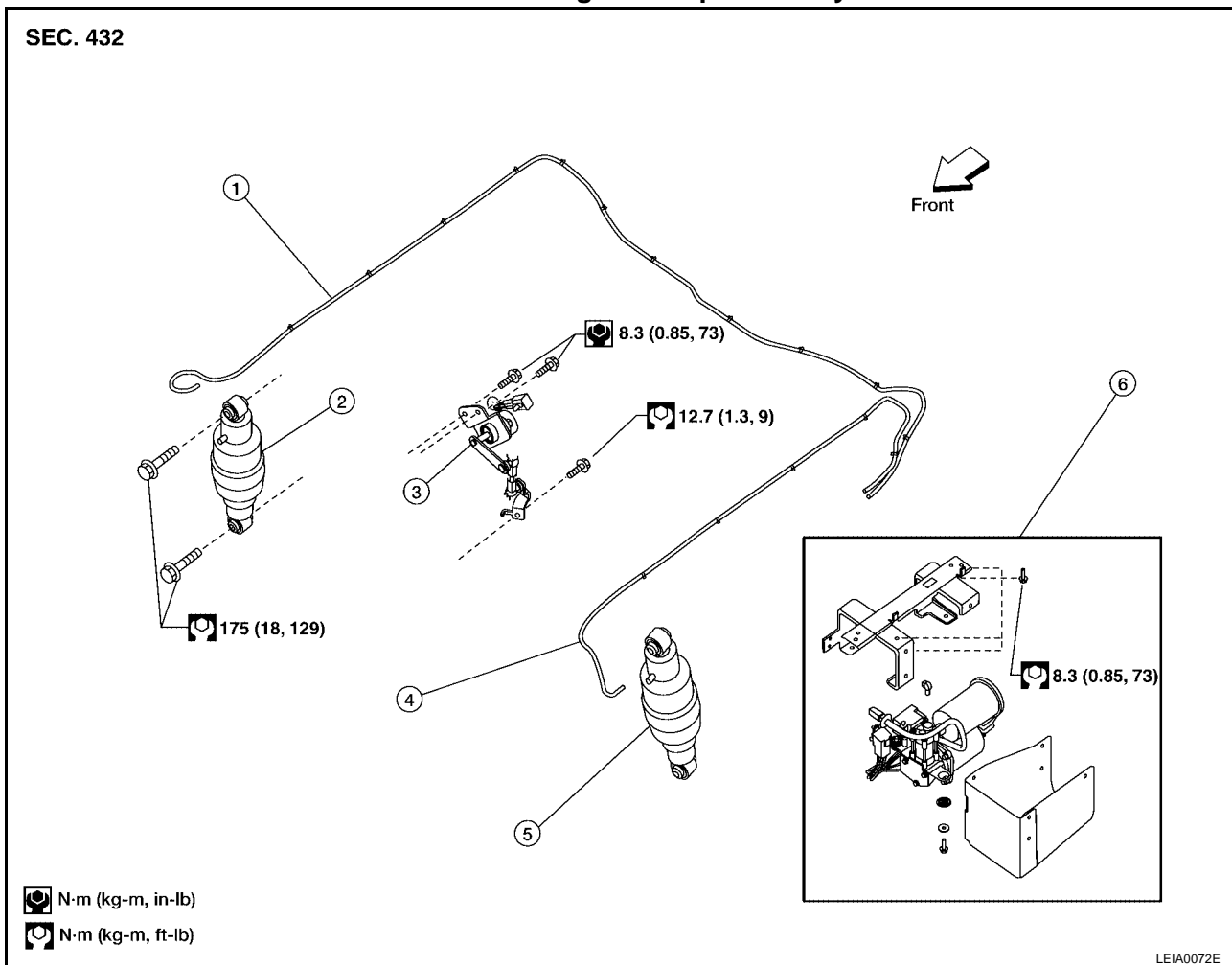
N·m (kg-m, ft-lb)

WEIA0092E

# REAR SUSPENSION ASSEMBLY

- |                           |                           |                            |
|---------------------------|---------------------------|----------------------------|
| 1. Seat belt latch anchor | 2. Stabilizer bar bushing | 3. Stabilizer bar clamp    |
| 4. Stabilizer bar         | 5. Connecting rod         | 6. Front lower link        |
| 7. Knuckle                | 8. Bushing                | 9. Rear lower link         |
| 10. Shock absorber        | 11. Suspension arm        | 12. Lower rubber seat      |
| 13. Coil spring           | 14. Upper rubber seat     | 15. Rear suspension member |
| 16. Spare tire bracket    | 17. Bound bumper          |                            |

## Rear Load Leveling Air Suspension System



- |                                               |                       |                                                          |
|-----------------------------------------------|-----------------------|----------------------------------------------------------|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor                                         |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly |

## On-Vehicle Inspection and Service

EES001HG

Check all of the component mountings for any excessive looseness, or back lash. Check the components for any excessive wear, damage, or abnormal conditions. Repair or replace the components as necessary.

### SHOCK ABSORBER INSPECTION

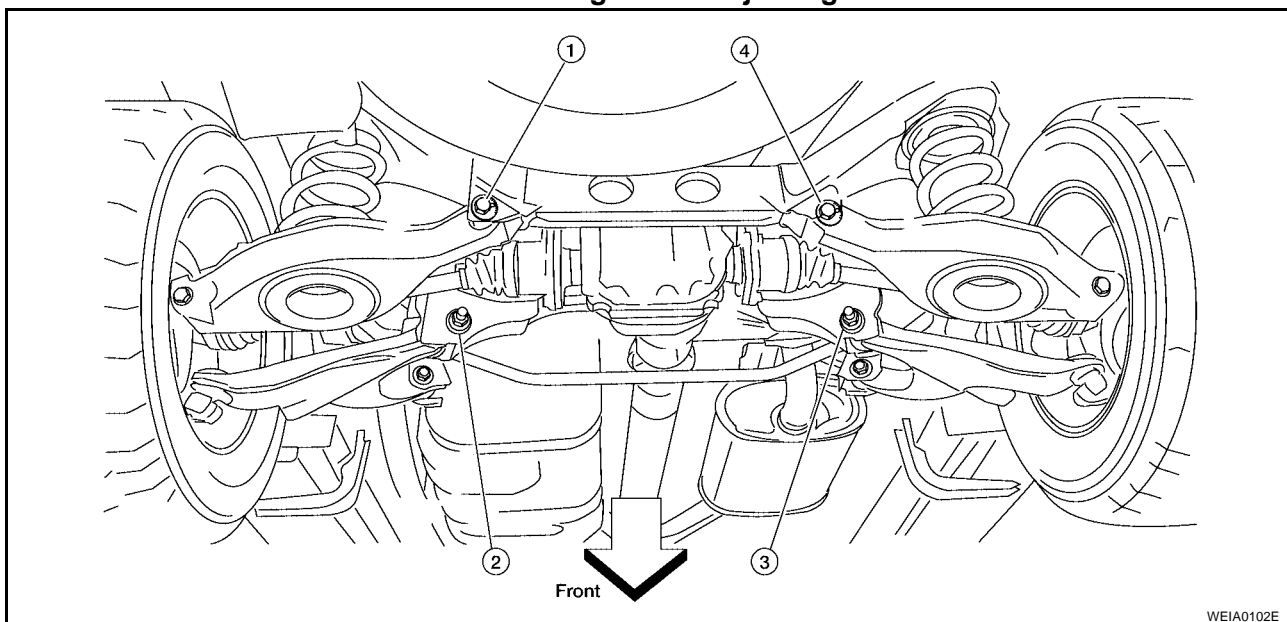
- Check the shock absorbers for any air leaks or damage, and replace as necessary.
- Check the hoses for any air leaks or damage, and replace as necessary.

## REAR SUSPENSION ASSEMBLY

### Wheel Alignment Inspection

EES001HH

Rear Wheel Alignment Adjusting Bolts



WEIA0102E

1. Rear lower link adjusting bolt, LH
2. Front lower link adjusting bolt, LH
3. Front lower link adjusting bolt, RH
4. Rear lower link adjusting bolt, RH

### PRELIMINARY INSPECTION

#### **WARNING:**

Always adjust the alignment with the vehicle on a flat surface. Use CONSULT-II “EXHAUST SOLENOID” active test to release the air pressure from the rear load leveling air suspension system.

#### **NOTE:**

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

1. Check and adjust the wheel alignment with the vehicle under unladen conditions. “Unladen conditions” means that the fuel, coolant, and lubricant are full; and that the spare tire, jack, hand tools and mats are in their designated positions.
2. Check the tires for incorrect air pressure and excessive wear.
3. Check the wheels for runout and damage. Refer to [WT-5, "Inspection"](#).
4. Check the wheel bearing axial end play.

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

5. Check the shock absorbers. Refer to [RSU-27, "SHOCK ABSORBER INSPECTION"](#).
6. Check each mounting point of the suspension components for any excessive looseness or damage.
7. Check each link, arm, and the rear suspension member for any damage.
8. Check the vehicle height. Refer to [RSU-49, "Wheelarch Height \(Unladen\\*1\)"](#).
  - If vehicle height is not within  $\pm 10$  mm (0.39 in) of the specification, perform the control unit initialization procedure. Refer to [RSU-47, "Initialization Procedure"](#).

### GENERAL INFORMATION AND RECOMMENDATIONS

1. A Four-Wheel Thrust Alignment should be performed.
  - This type of alignment is recommended for any NISSAN vehicle.
  - The four-wheel “thrust” process helps ensure that the vehicle is properly aligned and the steering wheel is centered.
  - The alignment machine itself should be capable of accepting any NISSAN vehicle.
  - The alignment machine should be checked to ensure that it is level.
2. Make sure the alignment machine is properly calibrated.
  - Your alignment machine should be regularly calibrated in order to give correct information.

# REAR SUSPENSION ASSEMBLY

- Check with the manufacturer of your specific alignment machine for their recommended Service/Calibration Schedule.

## THE ALIGNMENT PROCESS

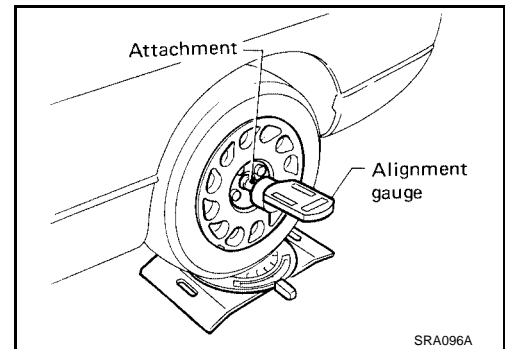
**IMPORTANT:** Use only the alignment specifications listed in this Service Manual. Refer to [RSU-48, "Wheel Alignment"](#).

1. When displaying the alignment settings, many alignment machines use "indicators": (Green/red, plus or minus, Go/No Go). **Do NOT use these indicators.**
  - The alignment specifications programmed into your alignment machine that operate these indicators may not be correct.
  - This may result in an ERROR.
2. 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 are using for more information.

## CAMBER

1. Measure camber of both the right and left wheels with a suitable alignment gauge and adjust as necessary to specification.

**Camber** : Refer to [RSU-48, "Wheel Alignment"](#).



2. If outside of the specified value, adjust the camber using the adjusting bolt in the front lower link.

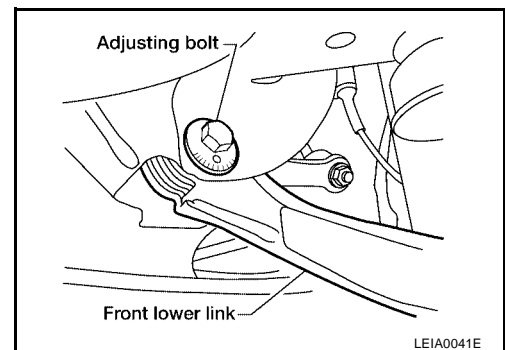
### CAUTION:

**After adjusting the camber then check the toe-in.**

### NOTE:

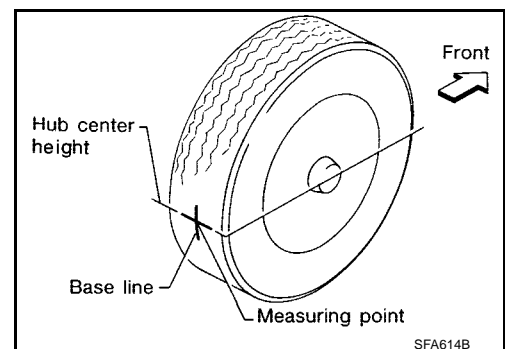
Camber changes about 0° 5' with each graduation of the adjusting bolt.

3. Tighten the adjusting bolt nuts to specification.



## TOE-IN

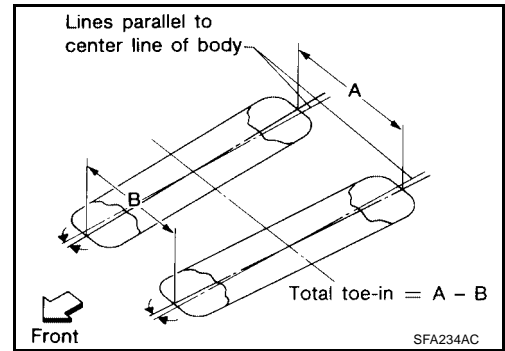
1. Bounce the rear of the vehicle up and down two to three times to stabilize the vehicle height. Refer to [RSU-49, "Wheelarch Height \(Unladen\\*1\)"](#).
2. Push the vehicle straight ahead about 5 m (16 ft).
3. Put a mark on the base line of the tread (rear side) of both of the tires at the same height as the center of the hub. This will be the measuring points.
4. Measure the distance "A" (rear side) across from tire to tire.



## REAR SUSPENSION ASSEMBLY

5. Push the vehicle slowly ahead to rotate the wheels 180° (a half turn).  
If the wheels are rotated more than 180° (a half turn), then repeat the above steps. Never push the vehicle backward.
6. Measure the distance "B" (front side) across from tire to tire.

**Total toe-in** : Refer to [RSU-48, "Wheel Alignment"](#) .



7. If the toe-in is outside the specified value, adjust the toe-in using the adjusting bolt in the rear lower link.

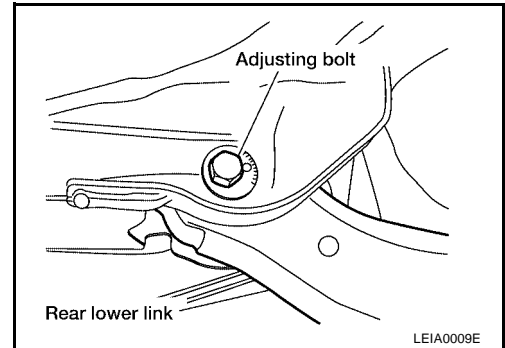
**CAUTION:**

**Be sure to adjust equally on RH and LH sides using the adjusting bolt.**

**NOTE:**

Toe changes about 1.5 mm (0.059 in) [one side] with each graduation of the adjusting bolt.

8. Tighten the adjusting bolt nuts to specification.


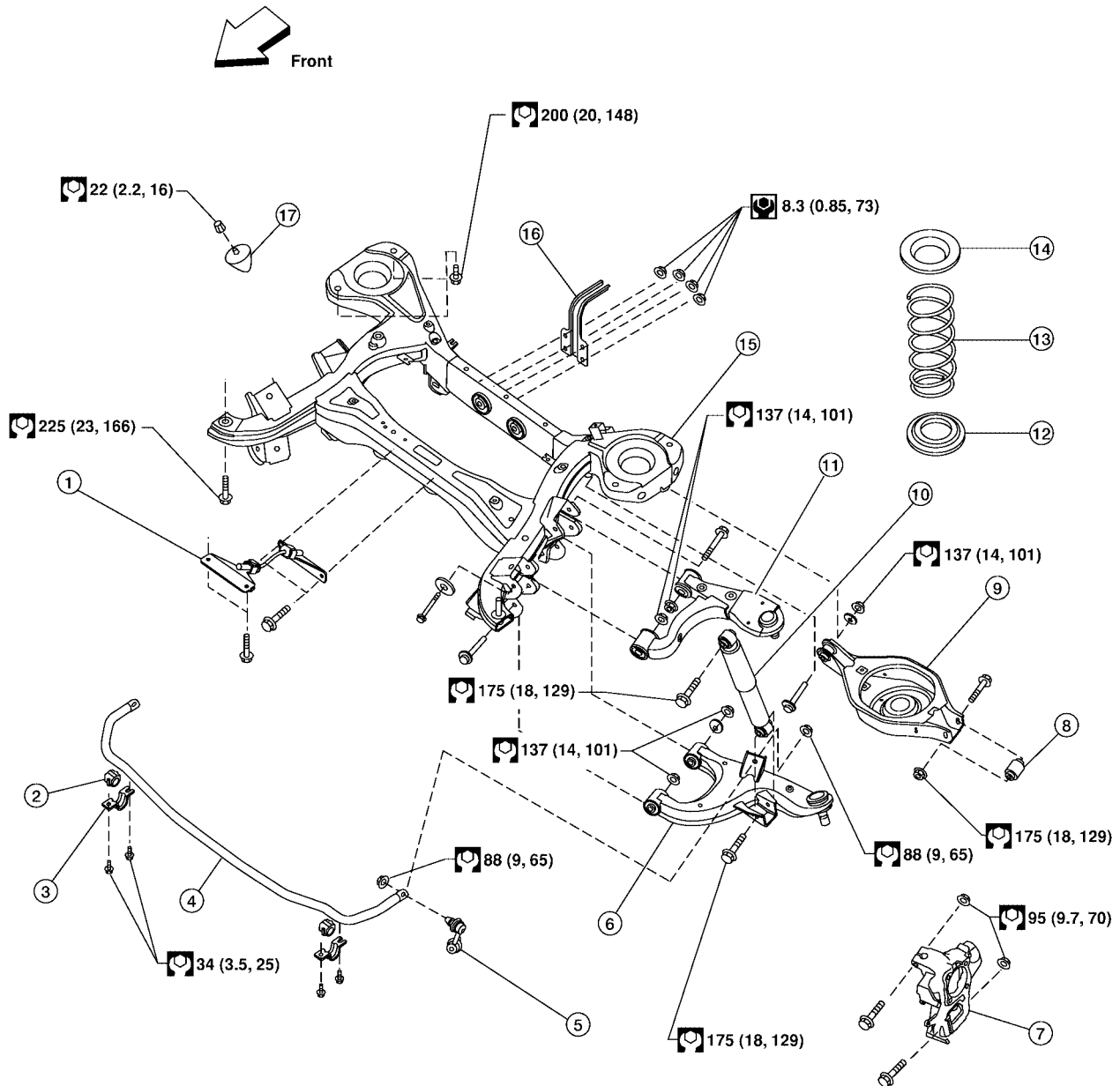


## Removal and Installation

*EES001HI*

## Rear Suspension

SEC. 431 • 432

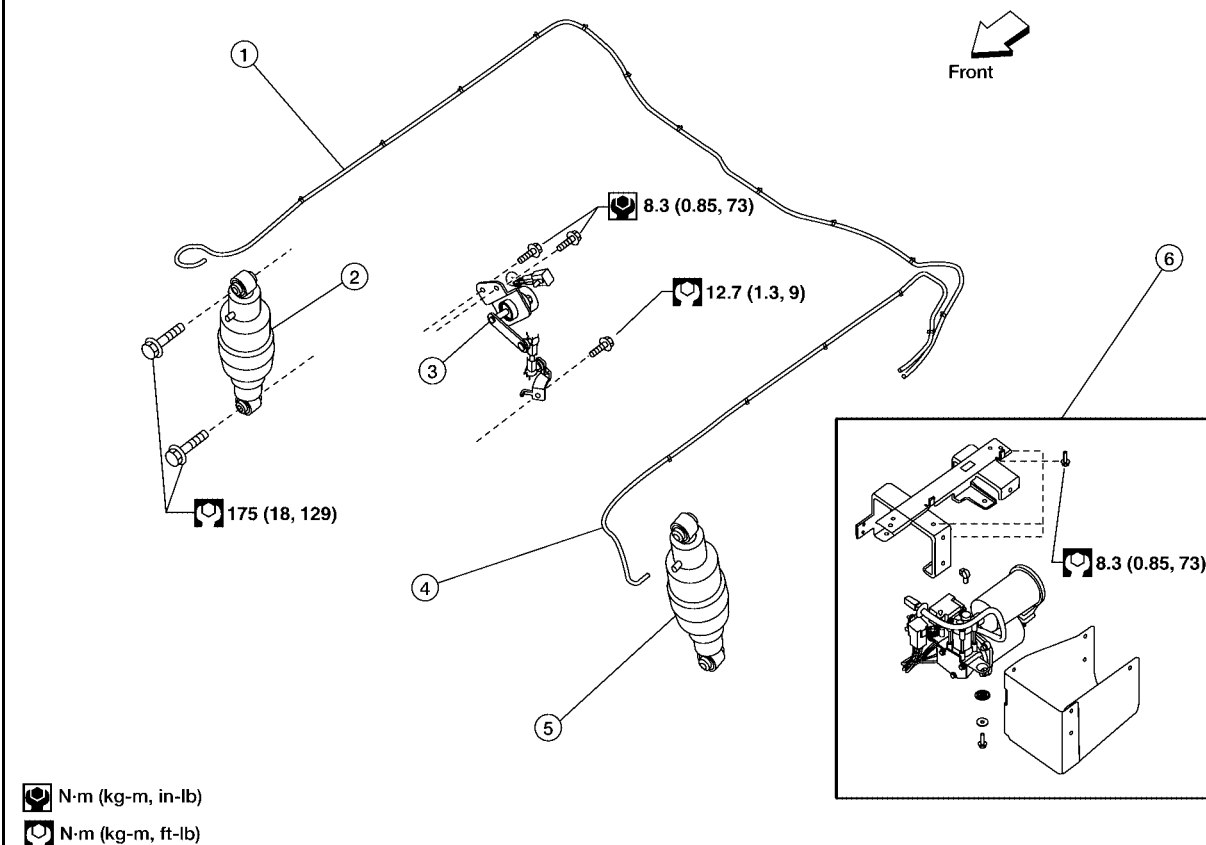
 N·m (kg-m, in-lb) N·m (kg-m, ft-lb)

## REAR SUSPENSION MEMBER

- |                           |                           |                            |
|---------------------------|---------------------------|----------------------------|
| 1. Seat belt latch anchor | 2. Stabilizer bar bushing | 3. Stabilizer bar clamp    |
| 4. Stabilizer bar         | 5. Connecting rod         | 6. Front lower link        |
| 7. Knuckle                | 8. Bushing                | 9. Rear lower link         |
| 10. Shock absorber        | 11. Suspension arm        | 12. Lower rubber seat      |
| 13. Coil spring           | 14. Upper rubber seat     | 15. Rear suspension member |
| 16. Spare tire bracket    | 17. Bound bumper          |                            |

### Rear Load Leveling Air Suspension System

SEC. 432



LEIA0072E

- |                                               |                       |                                                                                                  |
|-----------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor                                                                                 |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly (includes the bracket and rubber cover) |

### REMOVAL

1. Use the CONSULT-II "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
2. Disconnect the electrical connectors for the height sensor and the rear load leveling air suspension compressor assembly.
3. Unclip the rubber cover to access the rear load leveling air suspension compressor assembly.



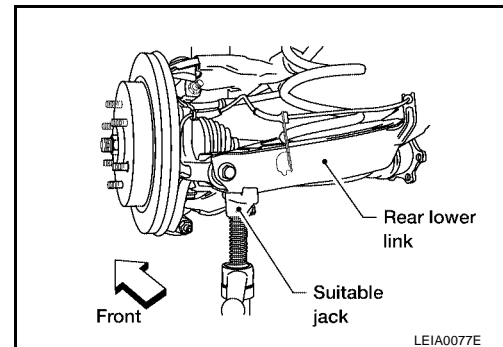
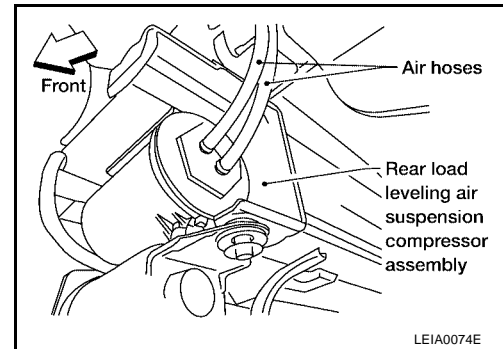
## REAR SUSPENSION MEMBER

4. Disconnect the rear load leveling air suspension hoses at the rear load leveling air suspension compressor assembly.
  - To disconnect the hoses, push in on the lock ring using a suitable tool and pull the hose out.
5. Remove both of the rear wheel and tire assemblies using power tool.
6. Remove the brake caliper without disconnecting the brake hoses, using power tool. Reposition the brake caliper out of the way using a suitable wire. Refer to [BR-28, "Removal and Installation of Brake Caliper and Disc Rotor"](#).

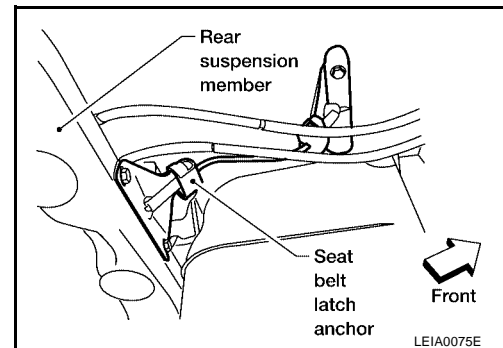
### CAUTION:

- Do not crimp or stretch the brake hose when repositioning the brake caliper out of the way.
- Do not press brake pedal while the brake caliper is removed.

7. Remove the spare tire.
8. Disconnect the two rear ABS sensor electrical connectors.
9. Remove the two rear drive shafts. Refer to [RAX-7, "Removal and Installation"](#).
10. Remove the rear final drive. Refer to [RFD-13, "REAR FINAL DRIVE ASSEMBLY"](#).
11. Remove the EVAP canister bolt from the top of the rear suspension member.
12. Disconnect the parking brake cables from the brackets on the rear suspension member.
13. Set a suitable jack to support each of the rear lower links and the coil spring tension.



14. Remove both of the rear lower link outer bolts and lower the jack to remove the rear coil springs.
15. Remove the two bolts to disconnect the seat belt latch anchor from the rear suspension member.
16. Disconnect both of the connecting rods from the rear stabilizer bar.
17. Set a suitable jack under the rear suspension member.
18. Remove the six rear suspension member bolts.
19. Slowly lower the jack to remove the rear suspension member, suspension arm, front and rear lower links and stabilizer bar as an assembly.
20. If necessary, remove the suspension arm, spare tire bracket, height sensor, rear load leveling air suspension hoses, stabilizer bar, knuckle, and front and rear lower links from the rear suspension member.



## INSPECTION AFTER REMOVAL

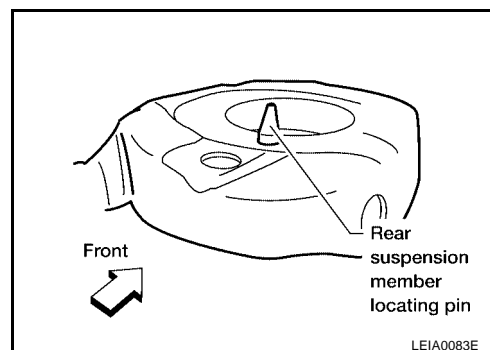
Check the rear suspension member for deformation, cracks, and other damage and replace if necessary.

## REAR SUSPENSION MEMBER

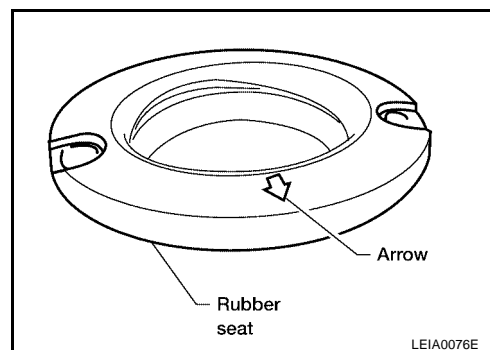
### INSTALLATION

Installation is in the reverse order of removal.

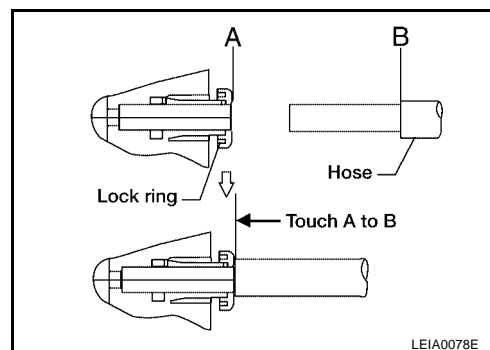
- When raising the rear suspension member assembly, use the locating pins to align the rear suspension member to the vehicle body.



- When installing the upper and lower rubber seats for the rear coil springs, the arrow embossed on the rubber seats must point out toward the wheel and tire assembly.



- To connect the rear load leveling air suspension hoses, the lock ring must be fully seated in the fitting. Insert the hose "B" into the lock ring "A" until the lock ring "A" is touching the hose "B" as shown. Pull on the hose to check that it is securely inserted.



- Perform the final tightening of the nuts and bolts for the links (rubber bushing) under unladen condition (unladen condition means that the fuel tank, engine coolant and lubricants are at the full specification, and the spare tire, jack, hand tools, and mats are in their designated positions) with the tires on level ground.
- Check the wheel alignment. Refer to [RSU-48, "Wheel Alignment"](#).

# SHOCK ABSORBER

PFP:56210

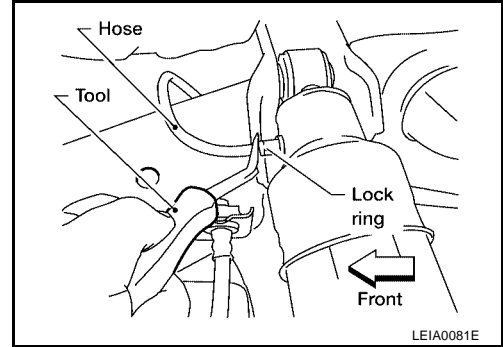
EES001HJ

## SHOCK ABSORBER

### Removal and Installation

#### REMOVAL

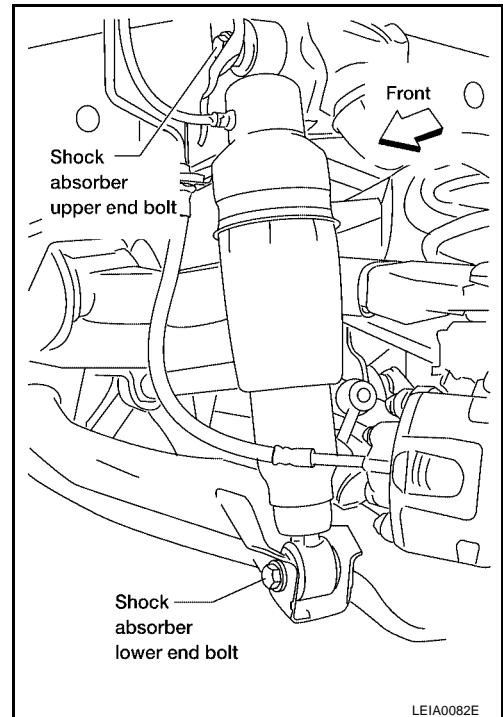
1. Remove the wheel and tire assembly using power tool. Refer to [WT-7, "Rotation"](#) .
2. Use CONSULT-II "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
3. Remove the four clips and remove the rear fender protector, front.
4. Disconnect the rear load leveling air suspension hose from the shock absorber.
  - To disconnect the hose, push in on the lock ring using a suitable tool and pull the air hose out.



5. Remove the shock absorber upper and lower end bolts using power tool.
6. Remove the shock absorber.

#### **CAUTION:**

**Do not damage the rubber boot on the shock absorber.**



#### INSTALLATION

Installation is in the reverse order of removal.

- Tighten the shock absorber bolts to specification. Refer to [RSU-26, "Components"](#) .

#### INSPECTION AFTER INSTALLATION

- Check the shock absorber for any air leaks or damage to the rubber boot.
- Check the shock absorber for smooth operation through a full stroke, both compression and extension.
- Check piston rod for cracks, deformation or other damage and replace if necessary.

# SUSPENSION ARM

## SUSPENSION ARM

PFP:55501

### Removal and Installation

EES001HK

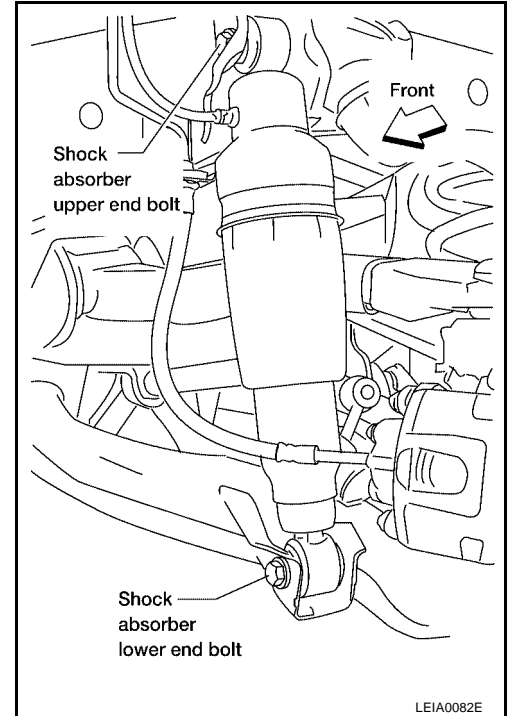
#### REMOVAL

1. Remove the rear suspension member assembly using power tool. Refer to [RSU-31, "Removal and Installation"](#).

#### NOTE:

It is necessary to remove the rear suspension member to remove the front upper bolt from the suspension arm.

2. Remove the shock absorber upper end bolt.
3. Remove the suspension arm upper nuts and bolts on the suspension member side using power tool.

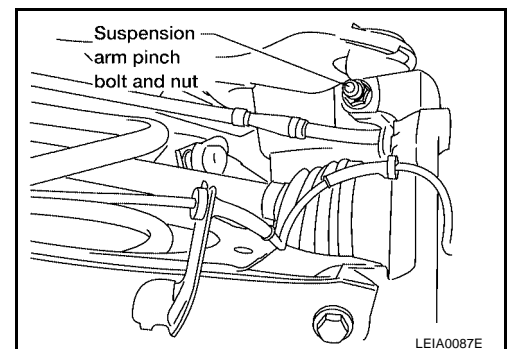


4. Remove the suspension arm pinch bolt and nut on the knuckle side using power tool.
5. Disconnect the suspension arm from the knuckle using a soft hammer.

#### CAUTION:

**Do not damage the ball joint with the soft hammer.**

6. Remove the suspension arm.



#### INSPECTION AFTER REMOVAL

- Check the suspension arm for damage, cracks, deformation and replace if necessary.
- Check the rubber bushing for damage, cracks and deformation. Replace suspension arm assembly if necessary.
- Before checking, turn the ball joint at least 10 revolutions so that the ball joint is properly broken in.

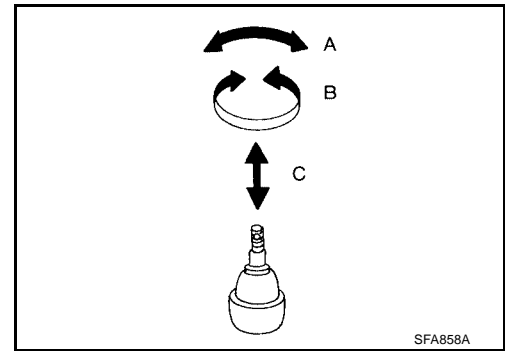
## SUSPENSION ARM

- Check the ball joint. Replace the suspension arm assembly if any of the following conditions exist:
  - Ball stud is worn.
  - Joint is hard to swing.
  - Play in axial direction is excessive.

**Swinging force “A”** : Refer to [RSU-48, "Ball Joint"](#) .

**Turning force “B”** : Refer to [RSU-48, "Ball Joint"](#) .

**Vertical end play “C”** : Refer to [RSU-48, "Ball Joint"](#) .



### INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-26, "Components"](#) .
- Perform the final tightening of the nuts and bolts for the links (rubber bushing) under unladen condition (unladen condition means that the fuel tank, engine coolant and lubricants are at the full specification, and the spare tire, jack, hand tools, and mats are in their designated positions) with the tires on level ground.
- Check the wheel alignment. Refer to [RSU-28, "Wheel Alignment Inspection"](#) .

# FRONT LOWER LINK

## FRONT LOWER LINK

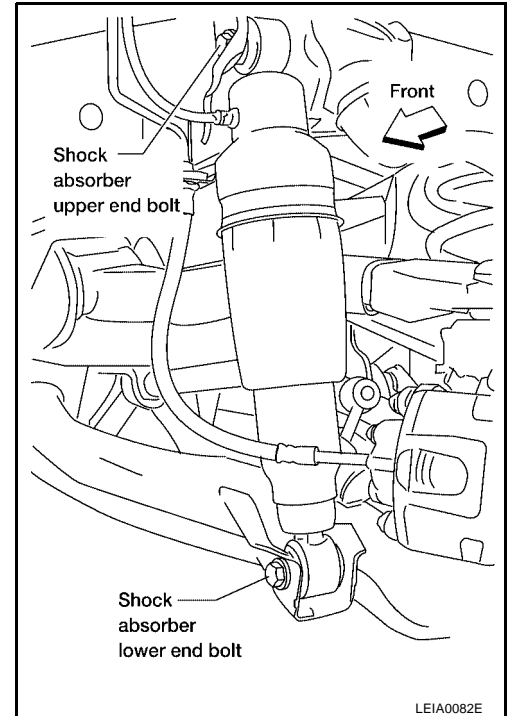
PFP:55110

EES001HL

### Removal and Installation

#### REMOVAL

1. Remove the wheel and tire assembly using power tool.
2. Use CONSULT-II "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
3. Remove the shock absorber lower end bolt.
4. Remove the adjusting bolt and nut, and the bolt and nut, from the front lower link and rear suspension member using power tool.

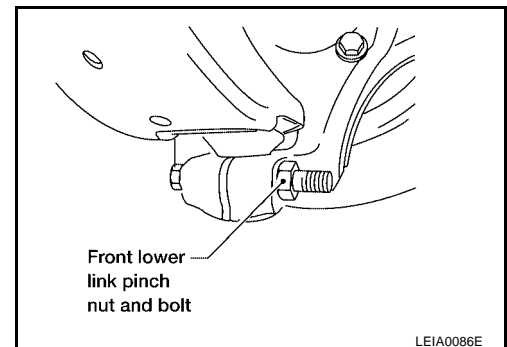


5. Remove the front lower link pinch bolt and nut on the knuckle side using power tool.
6. Disconnect the front lower link from the knuckle using a soft hammer.

#### CAUTION:

**Do not damage the ball joint with the soft hammer.**

7. Remove the front lower link.



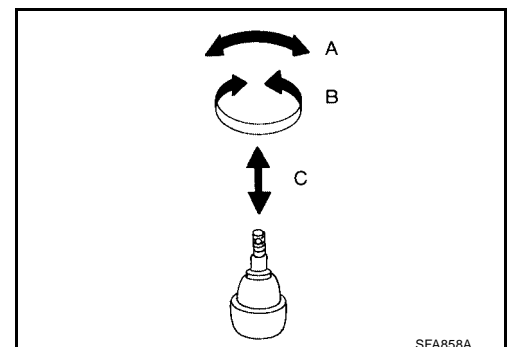
#### INSPECTION AFTER REMOVAL

- Check the front lower link and bushing for any deformation, crack, or damage. Replace if necessary.
- Check the rubber bushing for damage, cracks and deformation. Replace the front lower link and bushing if necessary.
- Before checking, turn the ball joint at least 10 revolutions so that the ball joint is properly broken in.
- Check the ball joint. Replace the front lower link if any of the following conditions exist:
  - Ball stud is worn.
  - Joint is hard to swing.
  - Play in axial direction is excessive.

**Swinging force "A"** : Refer to [RSU-48, "Ball Joint"](#) .

**Turning force "B"** : Refer to [RSU-48, "Ball Joint"](#) .

**Vertical end play "C"** : Refer to [RSU-48, "Ball Joint"](#) .



## FRONT LOWER LINK

### INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-26, "Components"](#) .
- Perform the final tightening of the nuts and bolts for the links (rubber bushing) under unladen condition (unladen condition means that the fuel tank, engine coolant and lubricants are at the full specification, and the spare tire, jack, hand tools, and mats are in their designated positions) with the tires on level ground.
- Check the wheel alignment. Refer to [RSU-28, "Wheel Alignment Inspection"](#) .

A

B

C

D

RSU

F

G

H

I

J

K

L

M

# REAR LOWER LINK & COIL SPRING

## REAR LOWER LINK & COIL SPRING

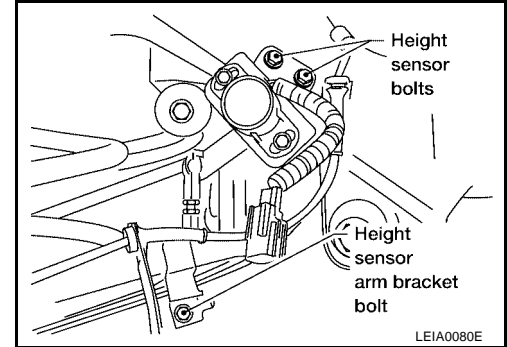
PFP:551B0

### Removal and Installation

EES001HM

#### REMOVAL

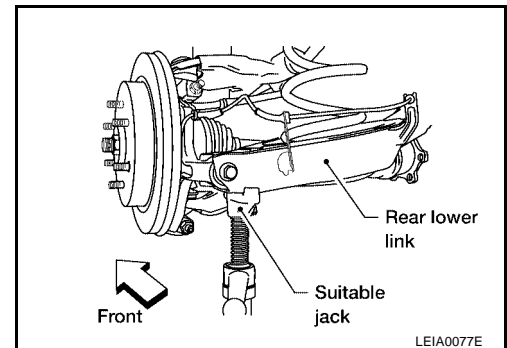
1. Remove the wheel and tire assembly using power tool. Refer to [WT-7, "Rotation"](#).
2. Use CONSULT-II "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
3. For removing the LH rear lower link and coil spring, remove the height sensor arm bracket bolt from the LH rear lower link.



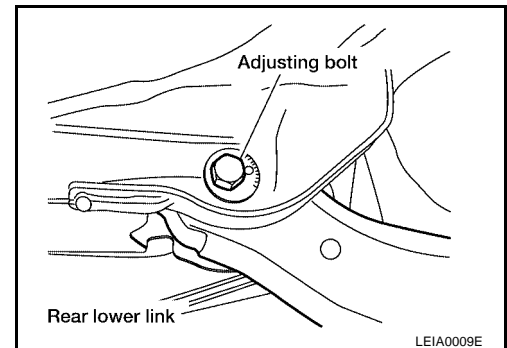
4. Set a suitable jack to relieve the coil spring tension from the rear lower link.

#### **WARNING:**

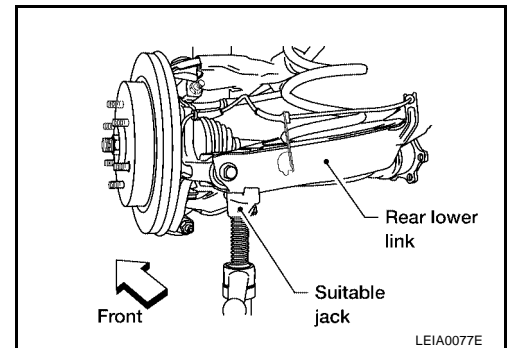
**Do not compress the coil spring when setting the jack.**



5. Loosen the rear lower link adjusting bolt and nut connected to the rear suspension member, using power tool.



6. Remove the rear lower link bolt and nut from the knuckle using power tool.

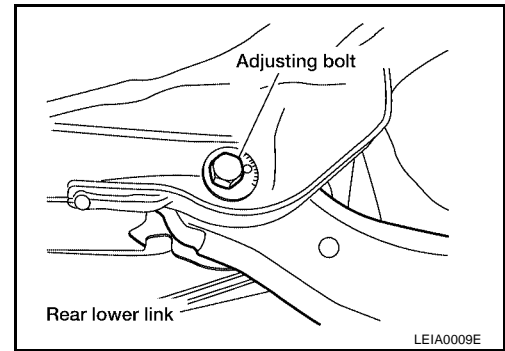


7. Slowly lower the suitable jack to release the coil spring tension. Then remove the upper rubber seat, coil spring, and lower rubber seat from the rear lower link.



## REAR LOWER LINK & COIL SPRING

8. Remove the rear lower link adjusting bolt and nut from the rear suspension member using power tool, then remove the rear lower link.



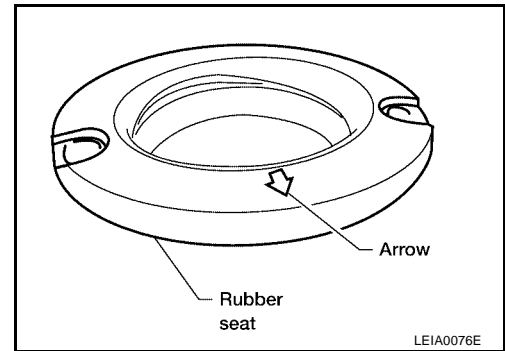
### INSPECTION AFTER REMOVAL

Check the coil spring and rubber seats for deformation, cracks, or other damage and replace if necessary.

### INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-26, "Components"](#).
- When installing the upper and lower rubber seats for the rear coil springs, the arrow embossed on the rubber seats must point out toward the wheel and tire assembly.
- After installing the rear lower link and coil spring, check the wheel alignment and adjust if necessary. Refer to [RSU-28, "Wheel Alignment Inspection"](#).



A

B

C

D

RSU

F

G

H

I

J

K

L

M

# STABILIZER BAR

## STABILIZER BAR

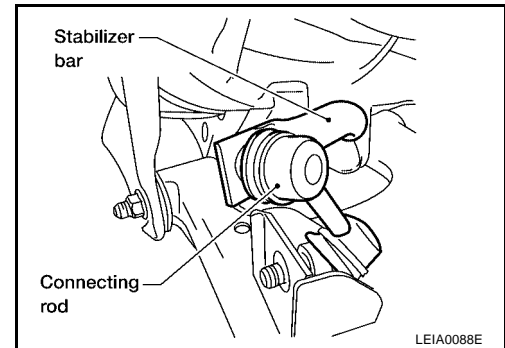
PFP:56230

### Removal and Installation

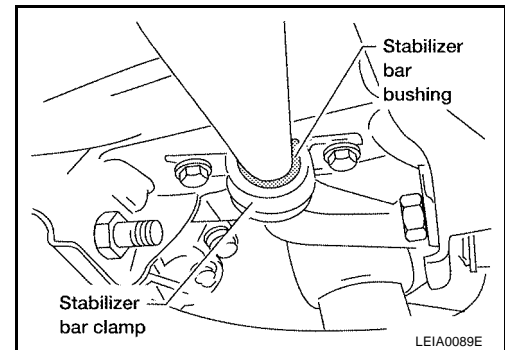
EES001HN

#### REMOVAL

1. Disconnect the stabilizer bar ends from the connecting rods using power tool.



2. Remove the stabilizer bar clamps using power tool, and remove the stabilizer bar bushings.
3. Remove the stabilizer bar.



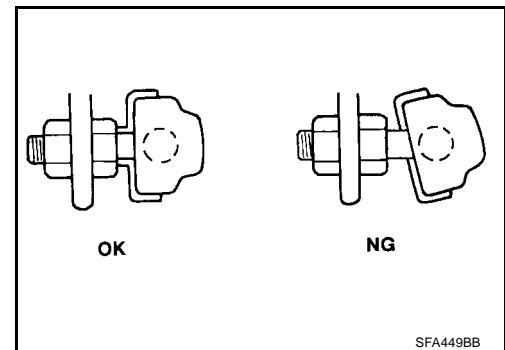
#### INSPECTION AFTER REMOVAL

- Check the stabilizer bar for any deformation, cracks, or damage and replace if necessary.
- Check the rubber bushings for deterioration, or cracks and replace if necessary.

#### INSTALLATION

Installation is in the reverse order of removal.

- Tighten the nuts and bolts to specification. Refer to [RSU-26, "Components"](#).
- Install the stabilizer bar with the ball joint sockets properly aligned.
- Install the stabilizer bar bushing and clamp so they are positioned inside of the sideslip prevention clamp on the stabilizer bar.

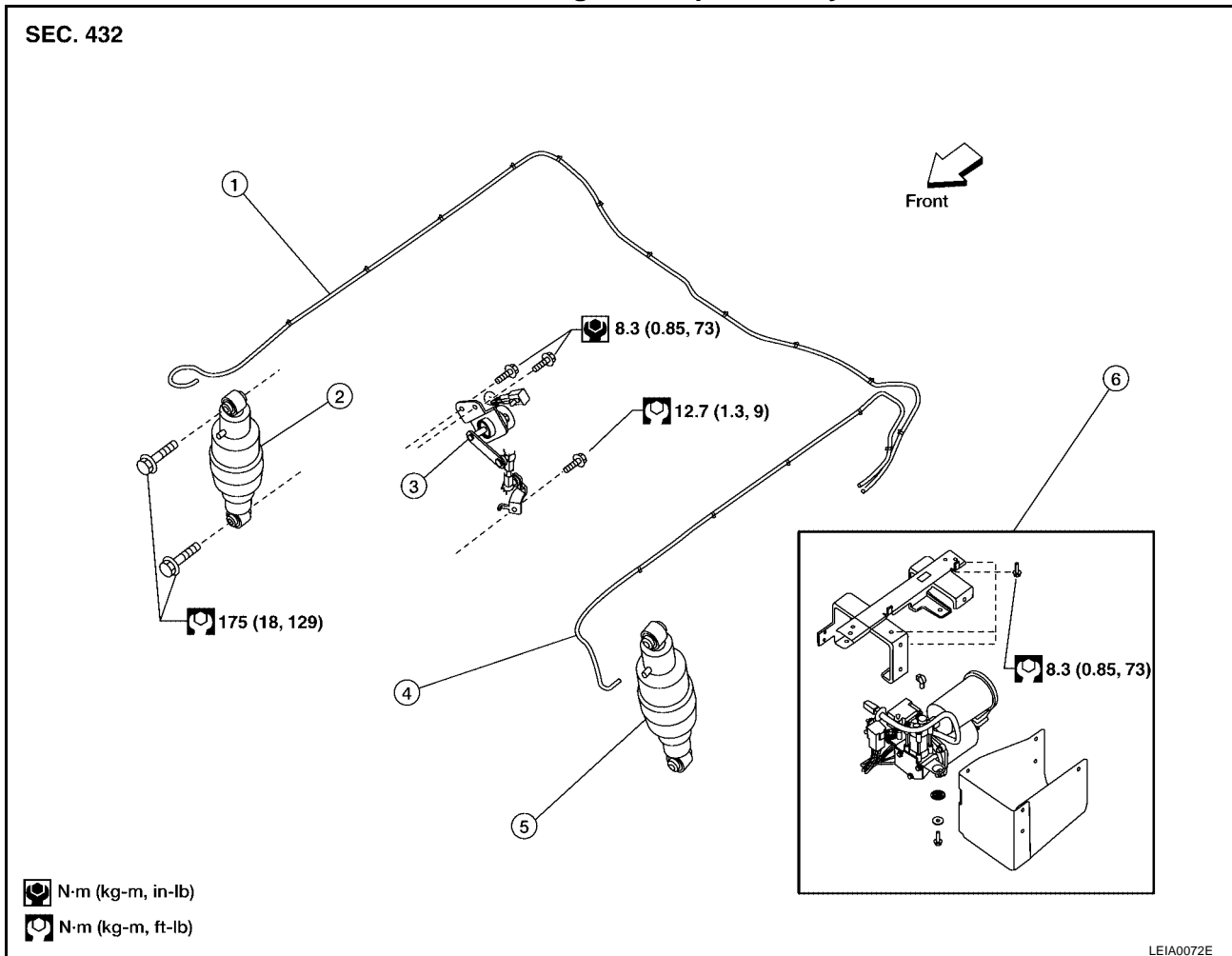


### Removal and Installation

EES001HP

#### Rear Load Leveling Air Suspension System

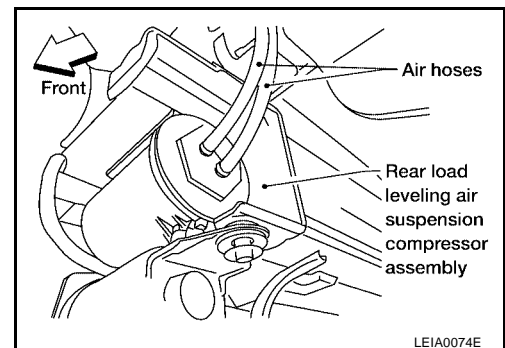
SEC. 432



- |                                               |                       |                                                          |
|-----------------------------------------------|-----------------------|----------------------------------------------------------|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor                                         |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly |

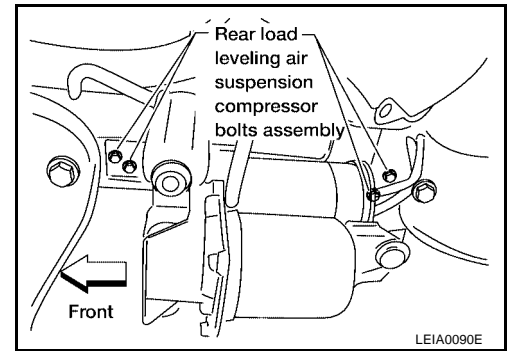
### REMOVAL

1. Use CONSULT-II "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
2. Disconnect the electrical connectors for the rear load leveling air suspension compressor assembly.
3. Unclip the rubber cover to access the rear load leveling air suspension compressor assembly.
4. Disconnect the rear load leveling air suspension hoses at the rear load leveling air suspension compressor assembly.
  - To disconnect the hoses, push in on the lock ring using a suitable tool and pull the hose out.



## REAR LOAD LEVELING AIR SUSPENSION COMPRESSOR ASSEMBLY

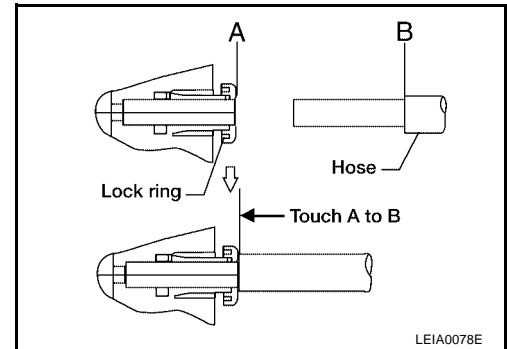
5. Remove the four bolts that mount the rear load leveling air suspension compressor assembly to the underbody.



### INSTALLATION

Installation is in the reverse order of removal.

- To connect the rear load leveling air suspension hoses, the lock ring must be fully seated in the fitting. Insert the hose "B" into the lock ring "A" until the lock ring "A" is touching the hose "B" as shown. Pull on the hose to check that it is securely inserted.



# HEIGHT SENSOR

PFP:53820

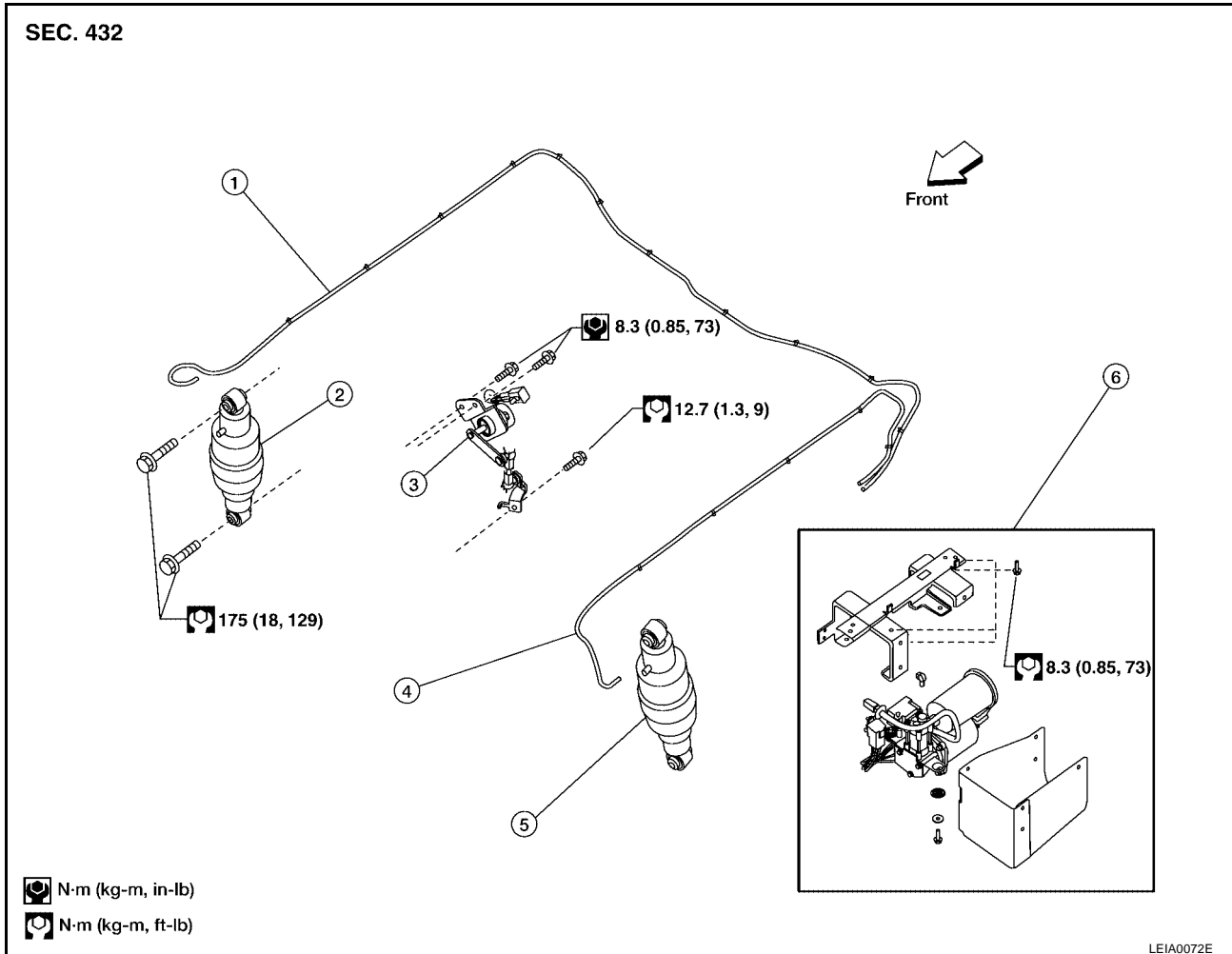
EES001HQ

## HEIGHT SENSOR

### Removal and Installation

#### Rear Load Leveling Air Suspension System

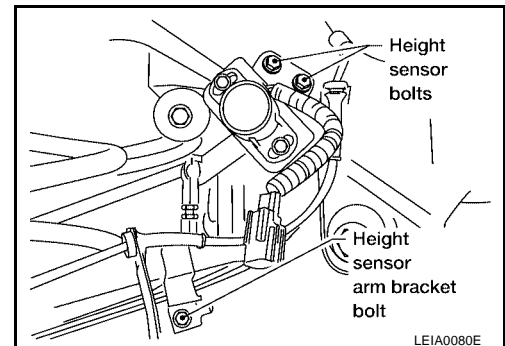
SEC. 432



- |                                               |                       |                                                          |
|-----------------------------------------------|-----------------------|----------------------------------------------------------|
| 1. Rear load leveling air suspension hose, RH | 2. Shock absorber, RH | 3. Height sensor                                         |
| 4. Rear load leveling air suspension hose, LH | 5. Shock absorber, LH | 6. Rear load leveling air suspension compressor assembly |

### REMOVAL

1. Use CONSULT-II "EXHAUST SOLENOID" active test to release the air pressure from the rear load leveling air suspension system.
2. Disconnect the electrical connector for the height sensor.
3. Remove the two height sensor bolts and height sensor arm bracket bolt.
4. Remove the height sensor.



# HEIGHT SENSOR

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## INSTALLATION

Installation is in the reverse order of removal.

1. Start the engine.
2. Use CONSULT-II to perform "STANDARD HEIGHT LEVEL" work support function.
3. Using data monitor of CONSULT-II, verify "HEIGT CALC" is at 0 mm.
4. Check the vehicle height. Refer to [RSU-49, "Wheelarch Height \(Unladen\\*<sup>1</sup>\)"](#) . If vehicle height is not within  $\pm 10$  mm ( $0 \pm 0.39$  in) of the specification, perform the initialization procedure. Refer to [RSU-47, "Initialization Procedure"](#) .

## CONTROL UNIT

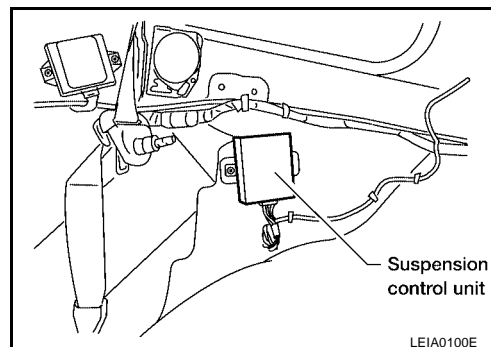
PFP:47850

EES001HR

### Removal and Installation

#### REMOVAL

1. Remove the rear LH interior trim panel. Refer to [EI-35, "BODY SIDE TRIM"](#) .
2. Disconnect the battery negative terminal.
3. Disconnect the suspension control unit electrical connector.
4. Remove the two bolts and remove the suspension control unit.



#### INSTALLATION

Installation is in the reverse order of removal.

**Suspension control unit bolts : 6 N·m (0.6 kg-m, 53 in-lb)**

#### Initialization Procedure

EES001HS

1. If control unit has been replaced, proceed to step 2. If control unit has not been replaced, use CONSULT-II "CLEAR HEIGHT INI" work support function to clear initialization flag and value. The CK SUSP warning lamp should illuminate. Using CONSULT-II "EXHAUST SOLENOID" active test, release the air pressure from the rear load leveling air suspension system.
2. Roll vehicle forward and backward.
3. Use CONSULT-II "ADJUST HEIGHT INI" work support function to set initialization condition.
4. Confirm that CK SUSP warning lamp is OFF.

# SERVICE DATA AND SPECIFICATIONS (SDS)

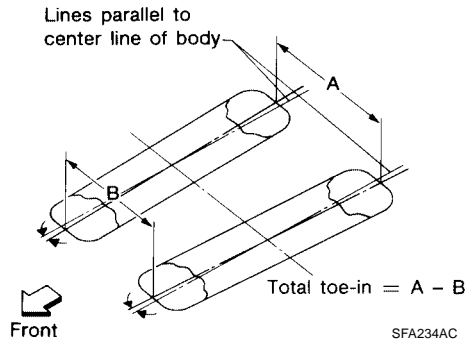
## SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

### Wheel Alignment

EES001HT

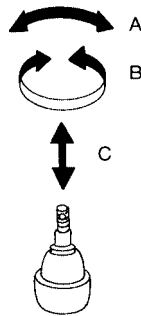
Camber Degree minute (decimal degree)	Minimum	0° 0' (0°)
	Nominal	- 0° 30' (-0.5°)
	Maximum	- 1° 0' (-1.0°)
	Cross camber	0° 45' (0.75°)



Toe-in	Distance (A - B)	Minimum	0 mm (0 in)
		Nominal	3.3 mm (0.130 in)
		Maximum	6.6 mm (0.260 in)
		Cross toe	2 mm (0.079 in)
	Angle (left, right) Degree minute (decimal degree)	Minimum	0° 0' (0°)
		Nominal	0° 7' (0.11°)
		Maximum	0° 14' (0.22°)
		Cross toe	0° 8' (0.14°)

### Ball Joint

EES001HU



Swinging force (measurement point: cotter pin hole of ball stud) "A"	11.4 - 145.5 N (1.16 - 14.8 kg, 2.56 - 32.7 lb)
Turning torque "B"	0.5 - 6.4 N·m (0.06 - 0.65 kg-m, 5 - 56 in-lb)
Vertical end play "C"	0 mm (0 in)

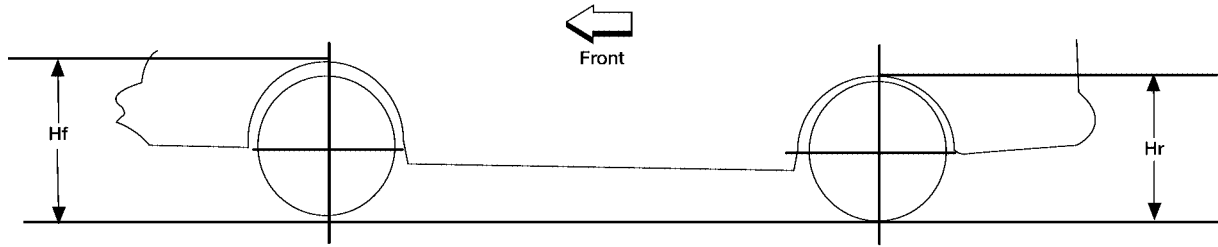


# SERVICE DATA AND SPECIFICATIONS (SDS)

## Wheelarch Height (Unladen\*<sup>1</sup>)

EES001HV

Unit: mm (in)



LEIA0085E

Suspension type	Air leveling* <sup>2</sup>	
Applied model	2WD	4WD
Front wheelarch height (Hf)	913 (35.94)	931 (36.65)
Rear wheelarch height (Hr)	912 (35.91)	932 (36.69)

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

\*2: Verify the vehicle height. If vehicle height is not within  $\pm 10$  mm (0.39 in) of the specification, perform the control unit initialization procedure. Refer to [RSU-47, "Initialization Procedure"](#).

## SERVICE DATA AND SPECIFICATIONS (SDS)

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