

RESTRAINT SYSTEM

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COLLISION DIAGNOSIS

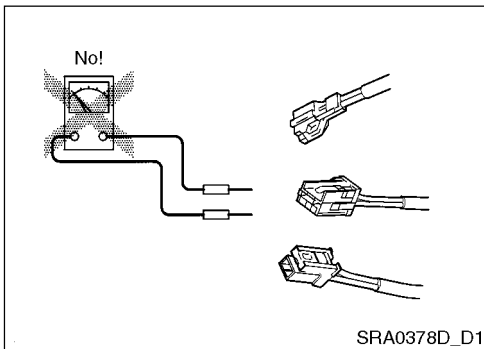
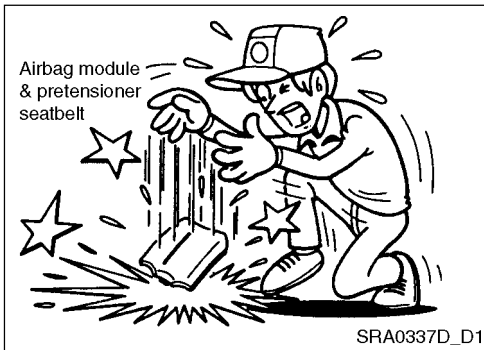
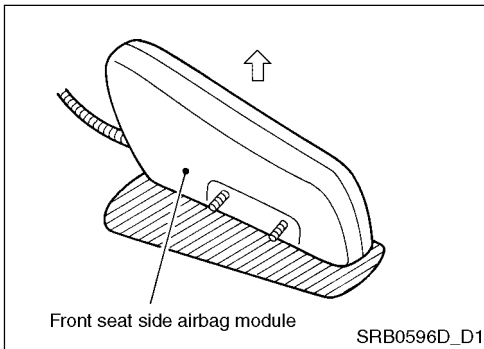
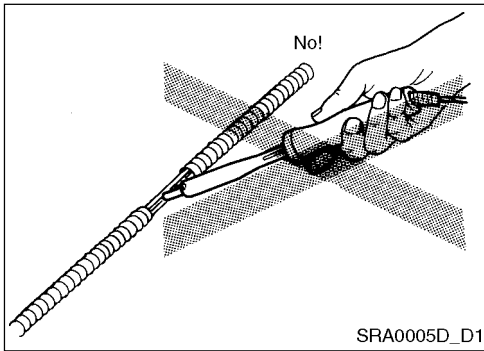
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PRECAUTIONS AND PREPARATION

Precautions



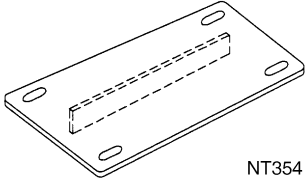
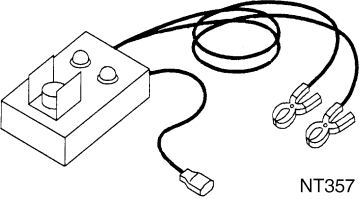
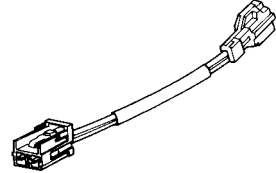
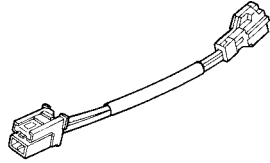
WARNING:

- To install/remove the SRS airbag, pretensioner seatbelt system related components and harness, turn the ignition switch "OFF", disconnect the battery terminals and wait over 3 minutes. (This is to discharge all the remaining electricity in the airbag sensor unit's auxiliary power circuit.)
- Do not use air impact or electrical tools when installing/removing the components.
- Do not use any hand-held tools for harness used in SRS airbag and pretensioner seatbelt systems. Be careful with the harness not to tangle with or interfere with other components.
- Do not use any electrical test equipments such as circuit tester when inspecting the SRS airbag and pretensioner seatbelt circuit while installed unless the Service Manual instructs to do so. (The weak current in the tester can cause the SRS airbag to operate.)
- Do not insert any foreign materials such as a screwdriver in the airbag module and pretensioner seatbelt connector in order to prevent unintended operation due to static electricity.
- The harnesses used in SRS airbag and pretensioner are covered with yellow insulation for easy identification.
- Refer to "RS Restraint System" in this Service Manual for safe airbag system service information.
- When storing the airbag module as a component, position the pad surface upwards for the driver's airbag, outer surface upwards for the passenger's airbag and stud bolts downwards by standing for the side airbags. (This is to be prepared for the unintended inflation.)
- Do not store the airbag module in the area where the temperature is over 90°C and pretensioner seatbelt in the area where over 80°C.
- Do not drop or shock the airbag module and pretensioner seatbelt. Replace if shocked.
- Be careful not to stain any oil, grease, solvents or water at airbag module and pretensioner seatbelt.
- Refer to "Airbag Module and Pretensioner Seatbelt Disposal" in "SRS Airbag" for safe disposal (RS-20, 23).
- After replacing or removing/installing the pretensioner seatbelt or after reconnecting the pretensioner seatbelt sensor connector, check for the normal operation of the system using the airbag warning light. Refer to "Trouble Diagnosis" (RS-31).
- Do not reuse the buckle and seatbelt assembly if the pretensioner seatbelt has operated.
- Replace the seatbelt assembly when the waving is cut, loose or damaged.
- When replacing the seatbelt assembly, use NISSAN genuine components.
- Do not use any electrical test equipments such as circuit tester when inspecting the airbag sensor unit, airbag module, pretensioner seatbelt, related harness or components while on-vehicle service. (The weak current in the tester can cause the SRS airbag to operate.)
- Do not insert any foreign materials such as a screwdriver in the airbag module and pretensioner seatbelt connector (to prevent unintended operation due to static electricity).
- Check the system by using airbag warning light or CONSULT-II. Do not use any electrical testers such as circuit tester.

PRECAUTIONS AND PREPARATION

Preparation

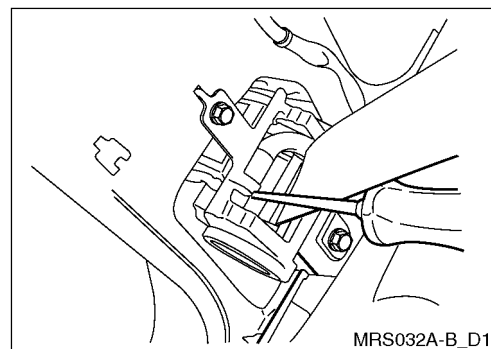
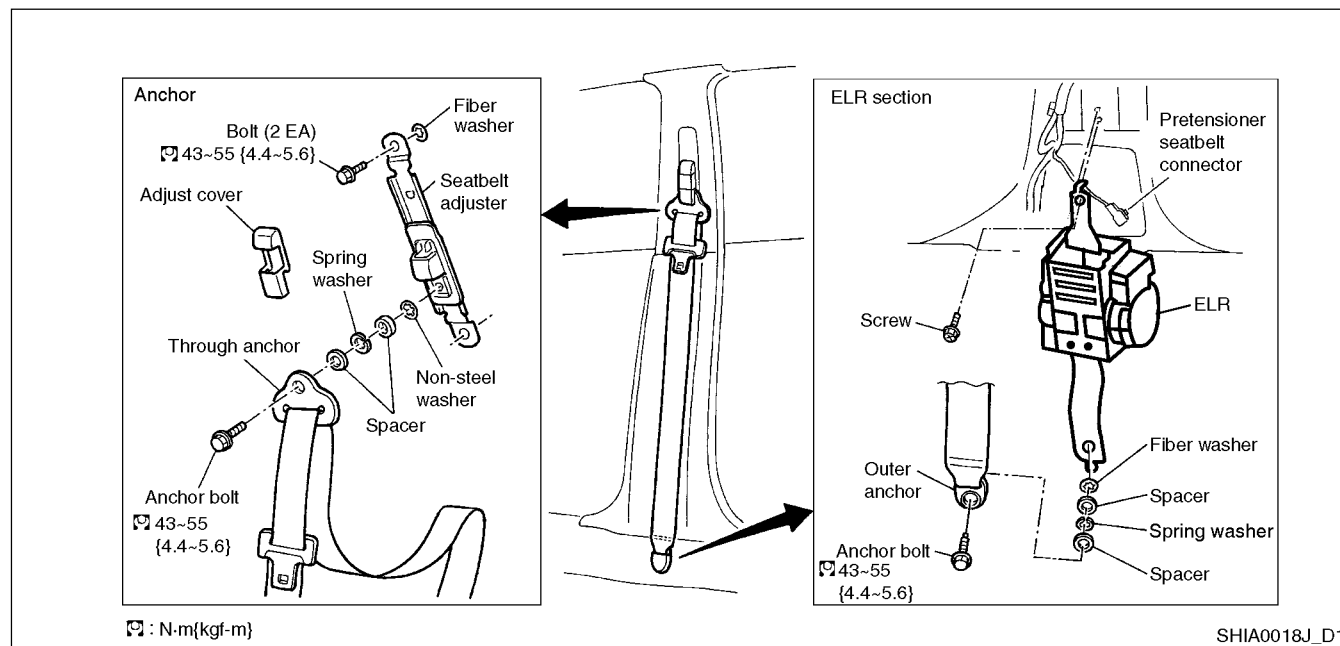
Special Service Tools

Item	Description	
KV99105300 Air bag module bracket	 NT354	Fixing the airbag module GI EM LC
KV99106400 Deployment tool	 NT357	Deploying the airbag module EC FE
KV99108300 Deployment tool adapter for passenger or built-in type side air bag module	 ZZA116D_D1	Connecting deployment tool with passenger airbag module RS AC
KV99109000 Deployment tool adapter for built-in type side air bag module	 ZZA1190D_D1	Connecting deployment tool with side airbag module AV EL WH
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SEATBELTS

Removal • Installation of Front Seatbelt

ANCHOR AND ELR SECTIONS

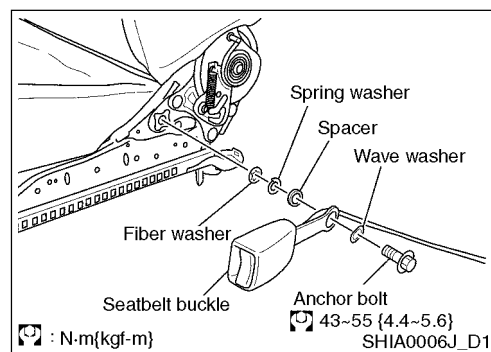


(Preceding work)

- Remove the upper and lower cover of the center pillar.

(Service Point) Pretensioner seatbelt connector

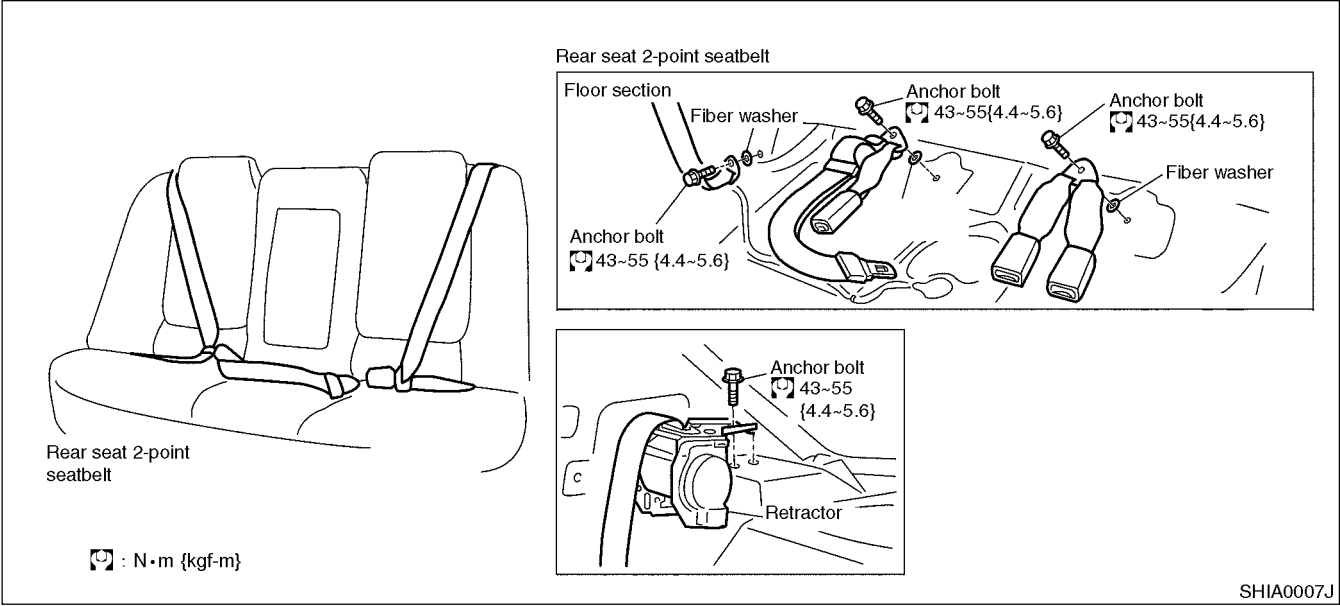
- Remove the pretensioner seatbelt connector by inserting a minus (-) screwdriver wrapped by insulation tape into the connection and lifting it up.
- Push in the connector to install the connector.



BUCKLE SECTION

SEATBELTS

Removal • Installation of Rear Seatbelt



(Preceding work)

- Removal of the rear seat.
- Removal/installation of the rear pillar finisher and self finisher.

Inspection

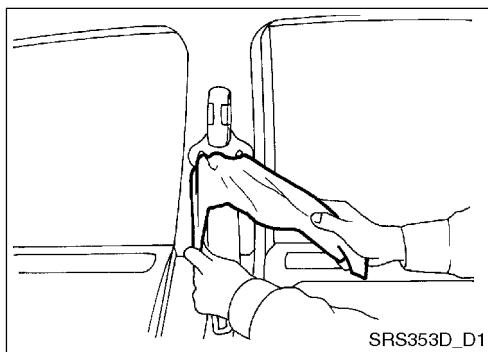
INSPECTION AFTER COLLISION

Inspect all seatbelt assembly components including the retractor after a collision. Also inspect for any damages or deformation in the seatbelt mounting sections. If the components are damaged or does not operate normally after the collision, they must be replaced. If not properly replaced, there could be severe injuries under accident.

SEATBELTS

For the following cases, replace the seatbelt.

- When the seatbelt is damaged.
- When the seatbelt mounting section is damaged. (Check for damages or deformation before installation of a new seatbelt.)
- When the airbag is inflated.
- If not operate normally.



PRELIMINARY INSPECTION

1. Check the normal operation with the seatbelt reminder light.
 - When the key switch is turned to ON without wearing the seatbelt, seatbelt reminder light comes on and then goes out if fastened.
2. Inspect that the anchor bolt of the seatbelt retractor and buckle are securely tightened.
3. Inspect that the seatbelt shoulder anchor pivots smoothly or the seatbelt height adjuster moves and fits in properly.
4. Retractor operation
 - a. Fully pull out the belt and inspect for any twists, cuts or any other damages.
 - b. Release the belt while checking smooth rewinding into the retractor. If not, clean the upper section of the anchor with cloth because dust may have caused the trouble.
 - c. Fasten the seatbelt. Check if the seatbelt clicks into the buckle.
 - d. Unfasten the seatbelt. Check if the belt and tongue return to their original positions.
5. Perform the above steps for other seatbelt(s) if necessary.

On-Vehicle Inspection of the Retractor

ELR AND ALR

- ELR is a device that prevents the belt release under emergency cases such as hard braking by locking the retractor.

ELR STATIC INSPECTION

1. Pull out the belt quickly and check if the belt retractor locks.
2. When belt is fully rewound, ALR mode should be cancelled.

SEATBELTS

ELR DYNAMIC INSPECTION

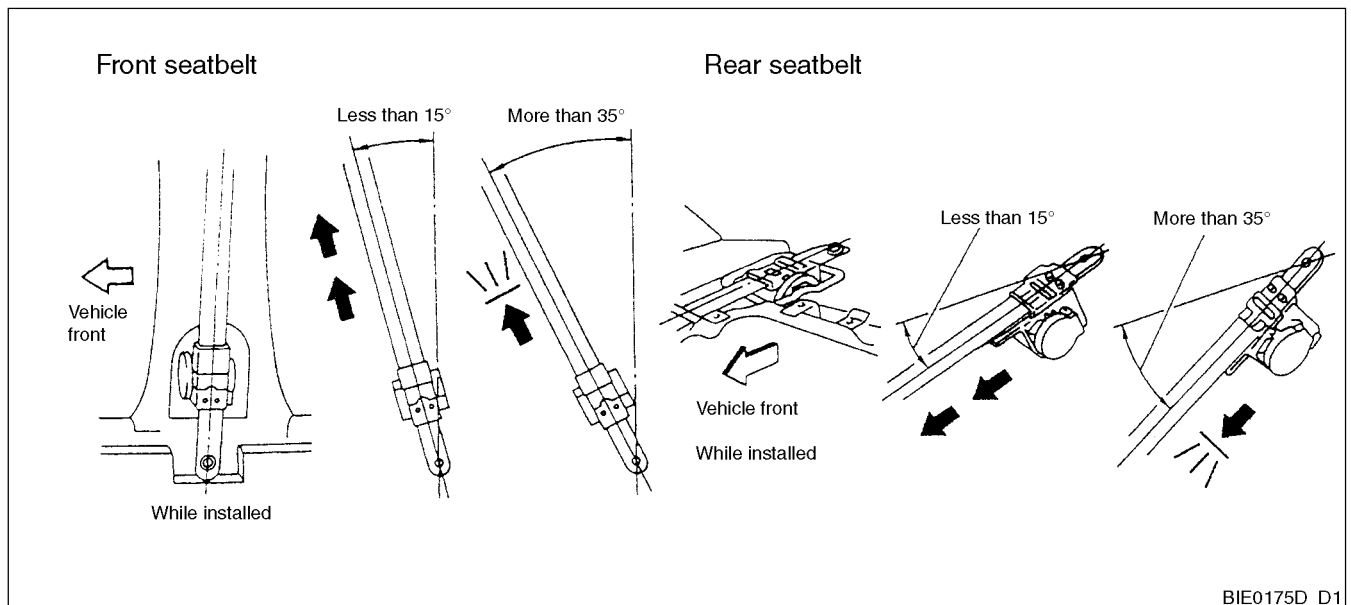
WARNING:

- Perform the tests in a safe place where no obstacles and other vehicles.
- Perform the tests in a dry and paved road. Never do it on a wet, unpaved, driveways or high-ways. (Danger of traffic accident and body injury!)
- The driver and passenger must be prepared for the case that retractor doesn't lock.

1. Fasten the driver's and passenger's seatbelts.
2. Drive at 16 km/h.
3. Let the passenger be warned of sudden stops and then fully depress the brake pedal while prepared for the case that retractors do not work.
4. The belt should not be released any more by locking the retractor when stopped. If unlocked, inspect the retractor.

Seatbelt Retractor Inspection

1. Remove the seatbelt retractor.
2. Pull out the seatbelt slowly by tilting the seatbelt retractor as shown in the illustration.
When tilted less than 15°: Can pull out the belt
When tilted more than 35°: Cannot pull out belt

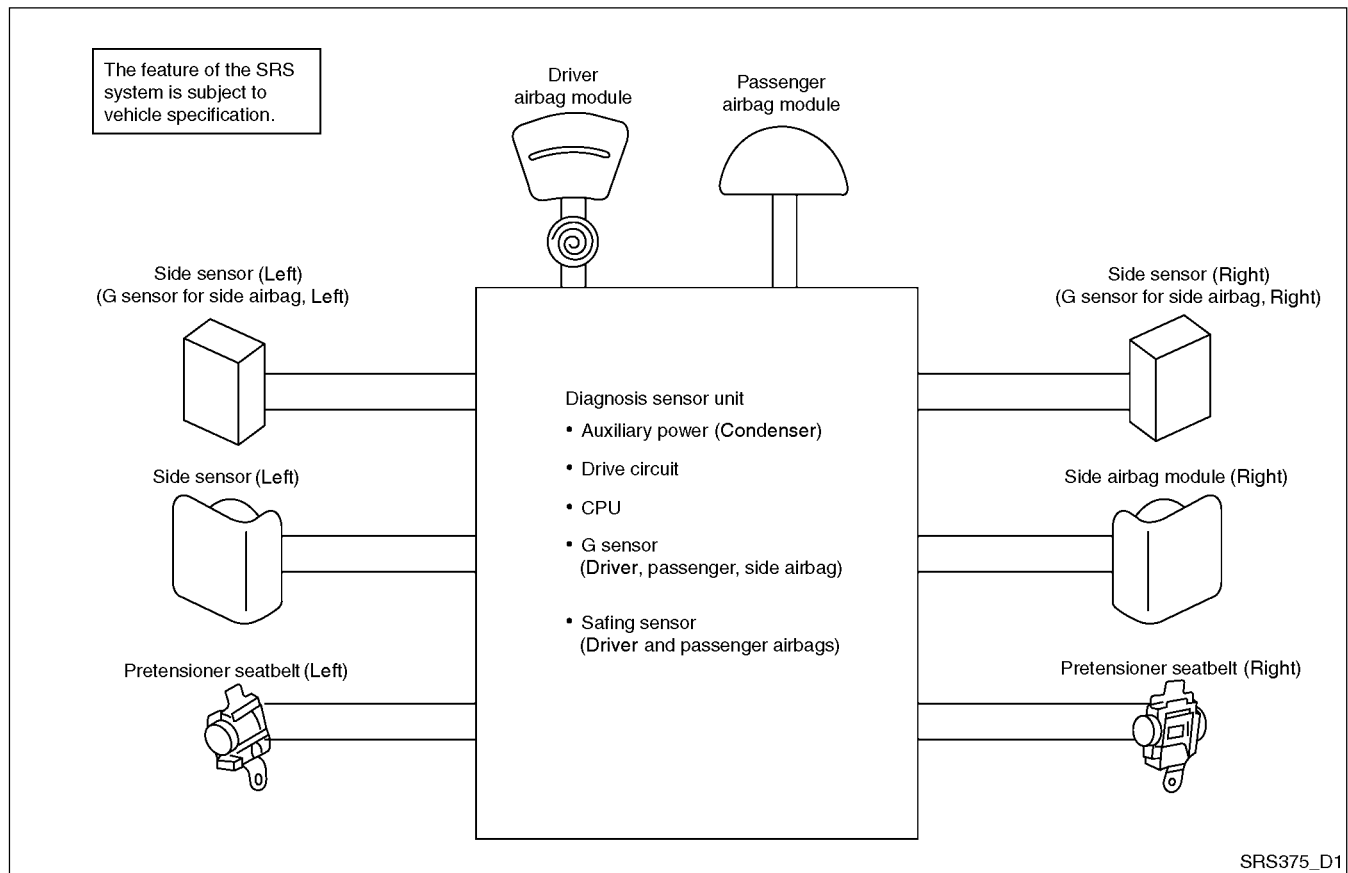


If not work properly, replace the seatbelt assembly.

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

General

The airbag deploys when the diagnosis sensor unit determines as collision when the ignition switch is in ON or START.



The collision mode for SRS activation varies slightly depending on SRS systems.

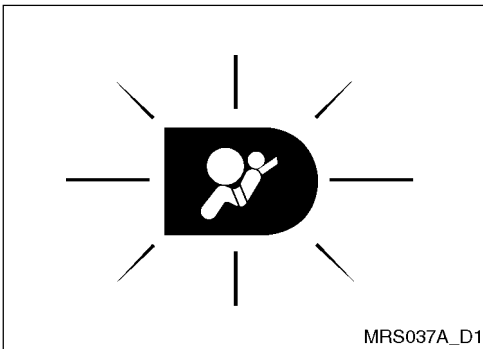
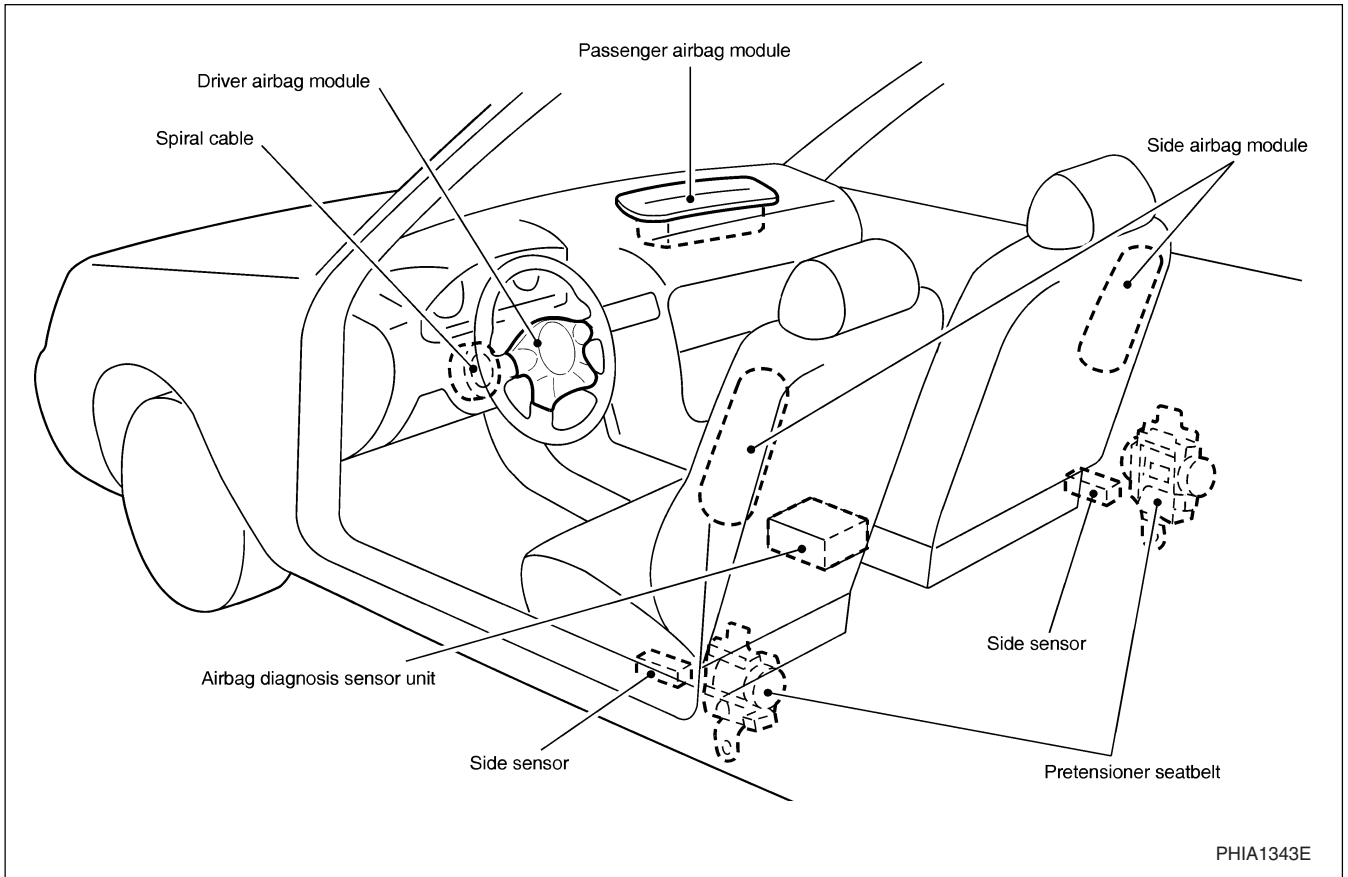
For example, the driver and passenger airbags deploy only under head-on collision and do not work for side impacts.

The SRS reaction for collision is as chart below.

SRS type	Front collision	Left side collision	Right side collision
Driver airbag module	O	-	-
Passenger airbag module	O	-	-
Side airbag module (Left)	-	O	-
Side airbag module (Right)	-	-	O
Pretensioner seatbelt	O		

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

SRS Components Locations



Inspection Items

1. Check the airbag warning light operation. The airbag warning light comes on when the ignition switch is turned to ON. The warning light goes out after 3 seconds if the airbag system is normal. However, if the airbag warning light works as below, inspect the airbag system immediately (Refer to RS-33 for details).
 - The warning light does not come on when the ignition switch is turned to ON.
 - The warning light does not go out after 3 seconds after coming on.
 - The warning light goes out after 3 seconds after coming on but comes on again.
 - The warning light comes on while driving.
2. Visually inspect the SRS components.
 - (1)Diagnosis Sensor Unit
 - Check the diagnosis sensor unit and bracket for damage, cracks or deformations.
 - Check the connector for damage and terminal for deformation.

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

(2) Airbag Module and Steering Wheel

- Remove the airbag module from the instrument panel and inspect for any damages in harness cover and connector and any deformation or hardenings in the terminals.
- Install the driver airbag module in the steering wheel and inspect for firm seating and alignment with the steering wheel.
- Inspect for whether there are excessive gap with steering wheel.
- Install the passenger airbag module in the instrument panel and inspect for firm seating and alignment with the instrument panel.
- Install the side airbags in the seatbacks and inspect for firm seating and alignment with the seats.

(3) Spiral Cable

- Inspect for any damage, cracks or deformation at the spiral cable.
- Inspect for any damages in the connector and insulation tape.
- Inspect the steering wheel for noise, hardening and hard steering.

(4) Main Harness and Airbag Harness

- Inspect the connector for firm connection and damage and terminals for deformation.
- Inspect for any hardening, peel or open circuit in the harness.

CAUTION:

- **Be sure to replace the special bolt and ground bolt with new.**

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

Removal • Installation - Diagnosis Sensor Unit and Side Sensor

CAUTION:

- Before performing any SRS service, turn the ignition OFF, disconnect both battery terminals and then wait for more than 3 minutes.
- The special nut is coated with the bonding agent and the ground nut is also specially treated. Always replace them with new if removed.
- Inspect if the diagnosis sensor unit and the side sensor are correctly installed.
- Inspect the diagnosis sensor unit and the side sensor for any deformation, cracks, holes, or rust. If the damage can be identified visually, replace the damaged component with new.
- Inspect the diagnosis sensor unit and side sensor brackets for any deformation or rust.
- After replacing the diagnosis sensor unit and side sensor, perform "SELF-DIAG RESULTS" with CONSULT-II.
- Never disassemble the diagnosis sensor unit and the side sensor.
- When the diagnosis sensor unit is dropped or shocked, replace the unit.

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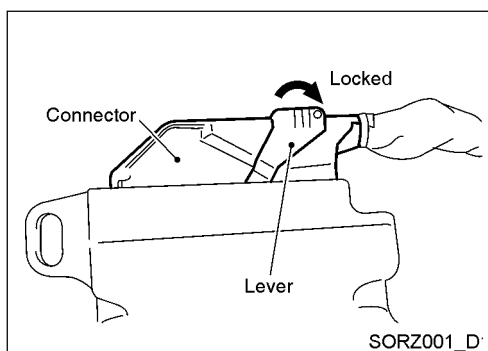
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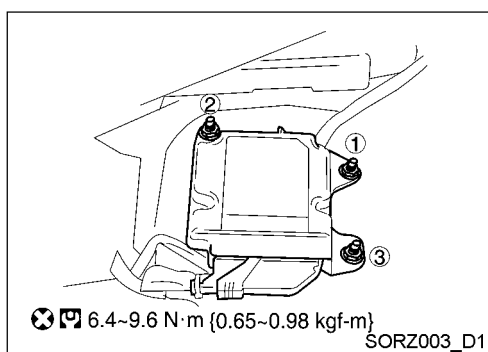
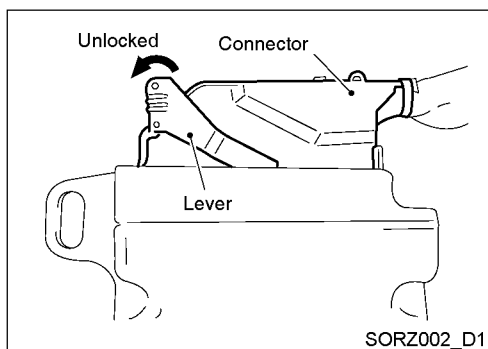
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Removal of Diagnosis Sensor Unit

1. Disconnect the driver, passenger and side airbag module connectors.
2. Remove the console box. Refer to "INSTRUMENT ASSEMBLY" (BT-40).
3. Disconnect the diagnosis sensor unit connector. Flip the lock lever towards arrow direction.
4. Remove the diagnosis sensor unit after removing the special nut.



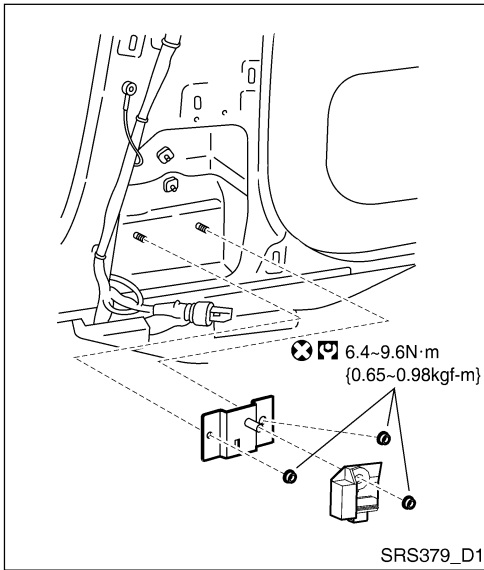
CAUTION:

- Installation is in the reverse order of removal. However, tighten the diagnosis sensor unit as below.

- ① → ② → ③ → ①
- Temporary tightening Complete tightening Complete tightening Complete tightening

⊗ 6.4~9.6 N·m {0.65~0.98 kgf·m}

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG



Removal of Side Sensor

1. Remove the seatbelt retractor. Refer to “Front Seatbelt” (RS-4).
2. Disconnect the side sensor connector.
3. Remove the bolts and nuts from the side sensor unit and then remove the side sensor.

Installation of Side Sensor

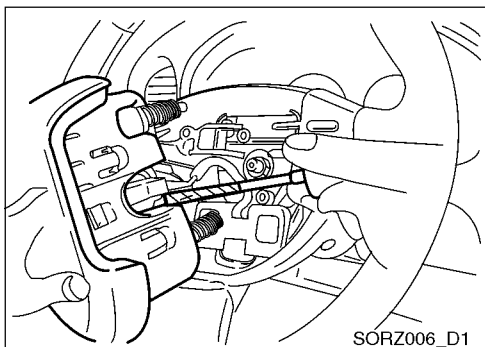
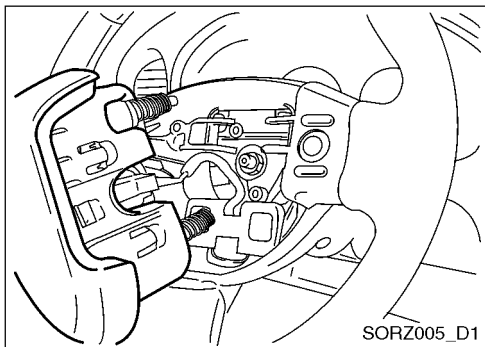
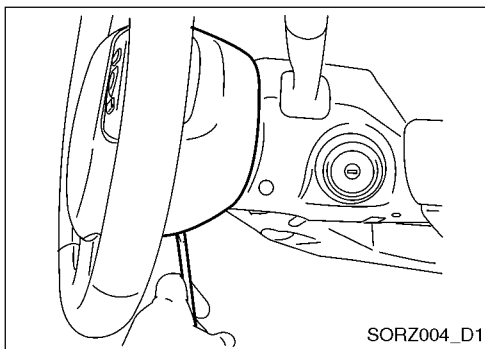
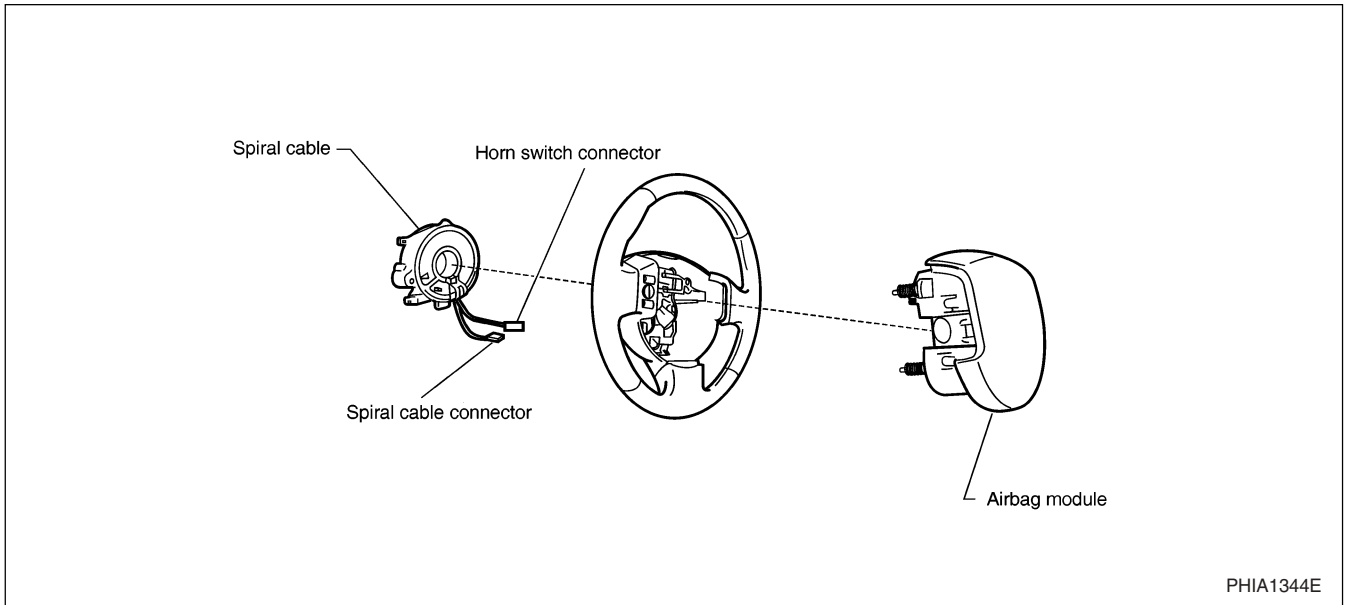
1. Position the side sensor bracket onto the vehicle.
2. Tighten the bracket mounting nuts.
3. Insert the side sensor protrusion into the bracket guide hole.
4. Tighten the side sensor mounting nuts.

CAUTION:

- Specially designed nuts are used for bracket and side sensor to prevent from loosening. Always replace them with new if removed.

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

Removal • Installation - Airbag Module and Spiral Cable



Removal - Airbag Module and Spiral Cable

CAUTION:

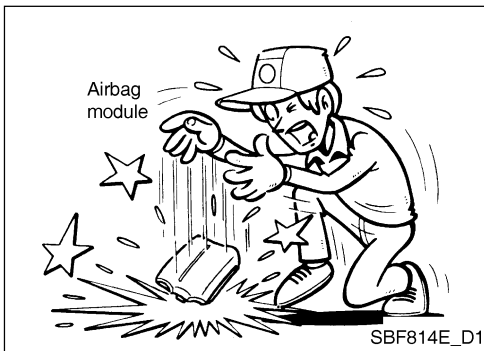
- Before performing any SRS service, turn the ignition OFF, disconnect both battery terminals and then wait for more than 3 minutes.
- Always work sideways from the airbag module.

1. Remove the airbag module by inserting a flat-bladed (-) screwdriver inside the steering wheel lower hole and pushing the airbag module fixing spring up.
2. Remove the airbag module connector as shown in the illustration by wrapping the screwdriver with insulation tape.

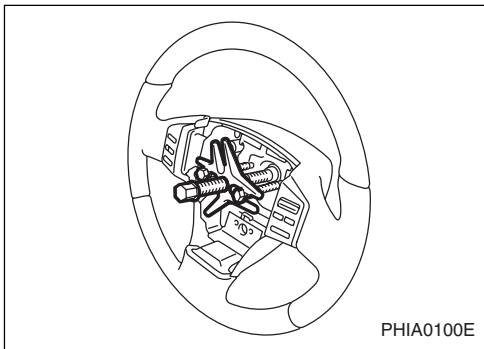
CAUTION:

- Always store the airbag module so that its pad faces upwards.
- Never disassembly the airbag module.

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG



- Do not drop or shock the airbag module. Replace the module if deformed or cracked.
- Do not store the airbag module to where the temperature is over 90°C.
- Be careful not to stain the airbag module with oil, grease or water.



3. While the steering wheel is in neutral, disconnect the horn connector and remove the nuts.
4. Remove the steering wheel using a steering wheel puller. Do not over-tighten the puller bolt in the steering wheel.

CAUTION:

- Do not tap the steering wheel or hit against other objects.

5. Remove the steering column cover.
6. Disconnect the connector and remove 4 screws to remove the spiral cable.

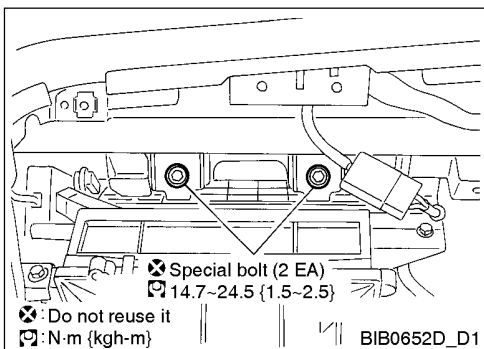
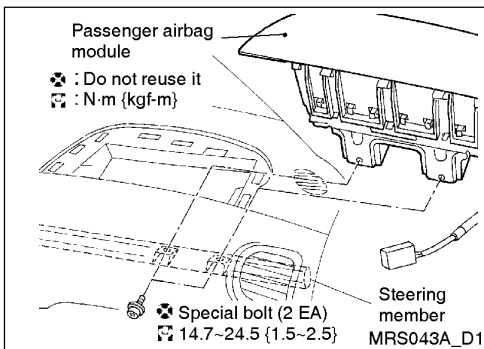
CAUTION:

- Do not disassembly the spiral cable or stain it with any lubricants.

Removal - Passenger Airbag Module

CAUTION:

- Before performing any SRS service, turn the ignition OFF, disconnect both battery terminals and then wait for more than 3 minutes.

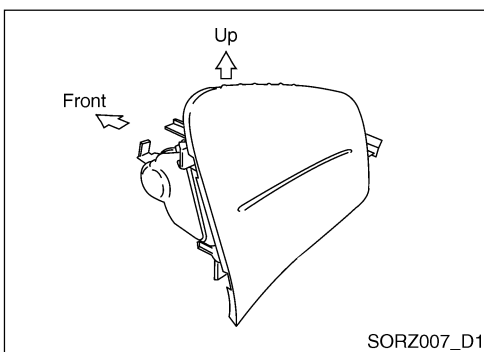


1. Open the glove box lid.
2. Disconnect the inflator connector from the airbag connector in the body side.
3. Remove the glove box assembly. Refer to "INSTRUMENT ASSEMBLY" (BT-40).
4. Remove the bolts and special bolts from passenger airbag module using a temper resistant torx (size 50) and take out the airbag module from the instrument panel.

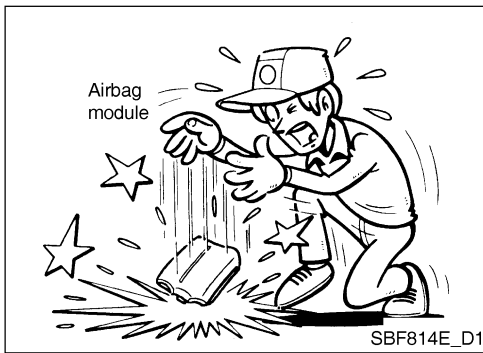
- Use both hands when removing the airbag module. It is heavy.

CAUTION:

- Always keep the airbag module so that its pad surface faces upwards.
- Never disassemble the airbag module.
- The special bolt is coated with the bonding agent. Always replace it with new if removed.
- Be careful not to insert any foreign materials such as a screwdriver into the airbag module connector.
- Do not use a circuit tester to inspect the airbag module harness connector.



SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG



- Do not drop or shock the airbag module. Replace the module if deformed or cracked.
- Do not store the airbag module to where the temperature is over 90°C.
- Be careful not to stain the airbag module with oil, grease or water.

GI

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Removal - Side Airbag Module

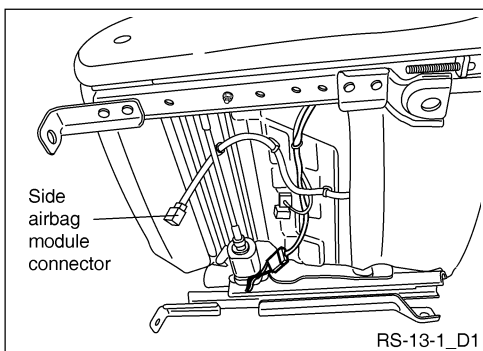
EC

CAUTION:

- Before performing any SRS service, turn the ignition OFF, disconnect both battery terminals and then wait for more than 3 minutes.
- Always work behind the airbag module.

FE

RS



1. Remove the seat mounting bolts. Refer to "FRONT SEAT" (BT-48).
2. Remove the side airbag module connector.
3. Remove the seatback assembly.

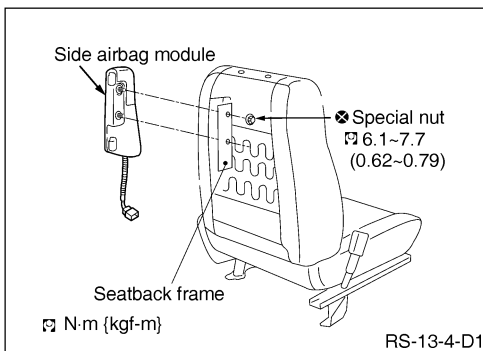
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CAUTION:

- The side airbag module is built in the seatback. Replace the seatback when replacing the airbag module after deployment.
- Keep the airbag module so that its pad surface faces upwards.
- Never disassemble the airbag module.
- Always replace the special nuts with new if removal.
- Be careful not to insert any foreign materials such as a screwdriver into the airbag module connector.
- Do not drop or shock the airbag module. Replace the module if deformed or cracked.
- Do not store the airbag module to where the temperature is over 90°C.
- Be careful not to stain the airbag module with oil, grease or water.

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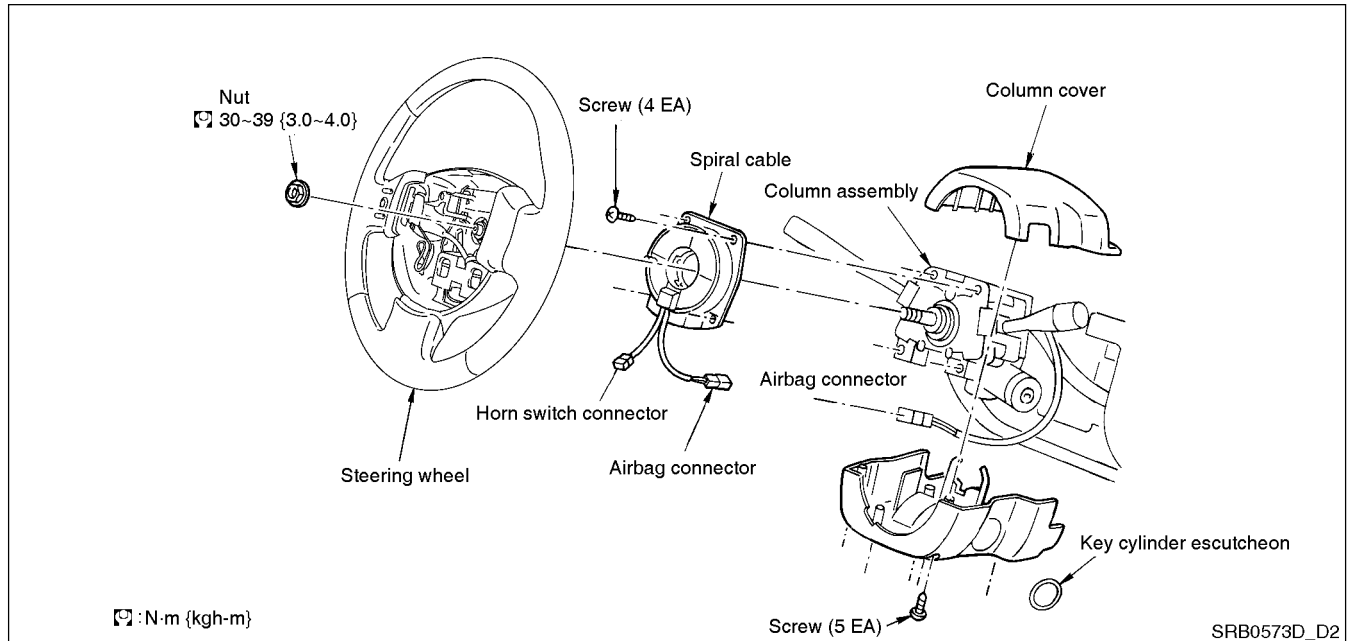
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SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

Spiral Cable

Removal • Installation



REMOVAL

1. Set the steering wheel to neutral position.
2. Remove the horn switch connector.
3. Pull out the steering wheel.

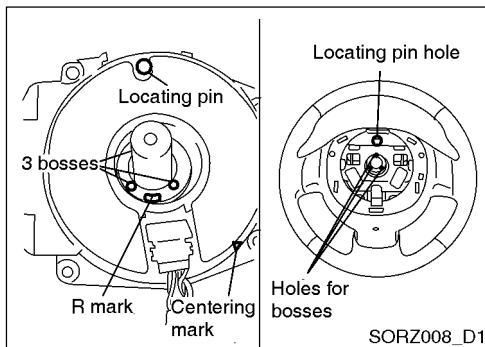
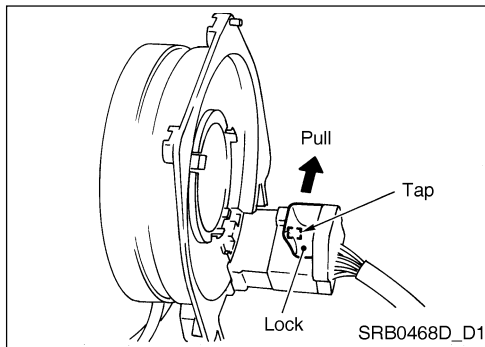
CAUTION:

- Do not tap the steering wheel or hit against other objects.

4. Remove the steering column cover.
5. Remove the spiral cable by disconnecting the spiral cable connector and removing the 4 screws. Disconnect the spiral cable connector by pulling its lock and depressing the end.

CAUTION:

- Do not disassemble the spiral cable.
- Do not apply oil to the spiral cable.



INSTALLATION

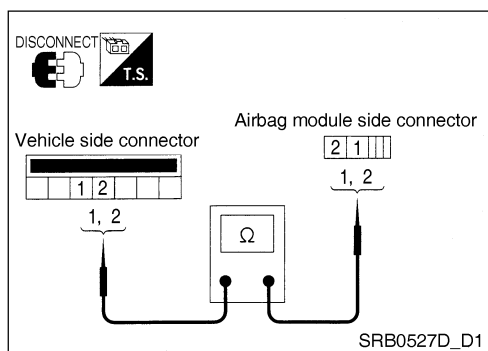
1. Set the front wheels straight-ahead position. Let the R mark on the spiral cable downwards and then install the steering wheel by aligning the 3 boss holes on the rear with 3 bosses on the spiral cable.
2. Check that the spiral cable is in neutral position.

CAUTION:

- The spiral cable can be snapped while steering if it is not in correct positions.

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

- To set the neutral position, rotate the spiral cable clockwise until it stops. Then rotate counterclockwise (about 3.5 turns) until the adjust mark aligns with centering mark. (The spare parts are set to the neutral position with stopper. Install as it is by removing the stopper.)
 - Do not rotate the spiral cable unnecessarily. And do not try to excessively rotate the spiral cable if it stopped (The cable can be snapped).
3. Connect the spiral cable connector and position the spiral cable and then install the column cover.
 4. Make sure that the locating pin on the left of the spiral cable aligns with the locating pin on the rear of the steering wheel assembly.
 5. Connect the horn connector and airbag module connector.
 6. After installation, check if system is working normally by using airbag warning light.
 7. If the airbag warning light comes on, reset the system with self-diagnosis function and erase all stored defectives using CONSULT-II.
 8. If airbag warning light still stays on after above step, diagnose the system (Refer to RS-30) and repair the defective location.



Spiral Cable Inspection

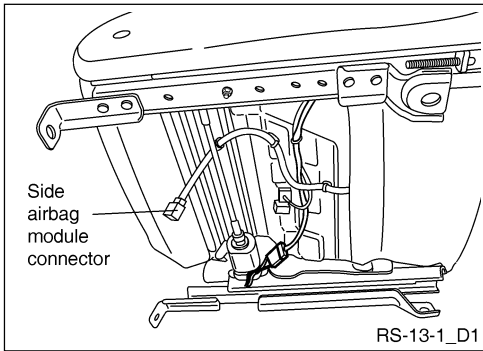
- Disconnect the connectors towards airbag module and airbag sensor from the spiral cable.
- Check continuity from each terminal.

Between spiral cable and airbag sensor unit

Terminal No. 1 - Terminal No. 1: Continuity

Terminal No. 2 - Terminal No. 2: Continuity

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

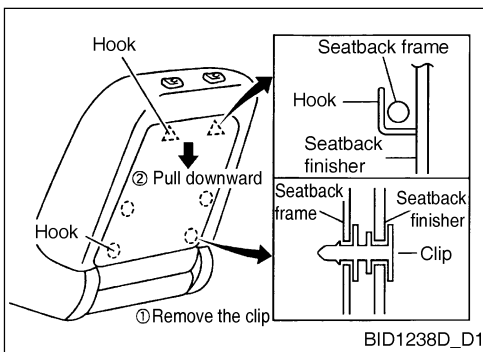


Removal - Seatback Assembly

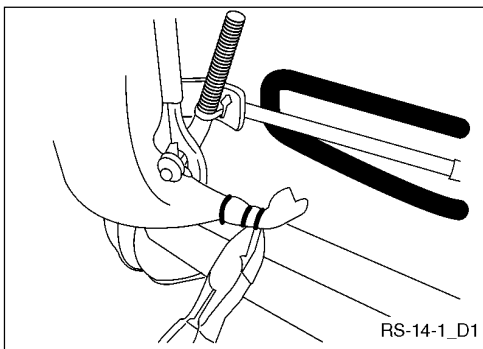
CAUTION:

- For side airbag module service, turn the ignition OFF, disconnect both battery terminals and then wait for more than 3 minutes.
- Be careful not to damage the airbag harness.

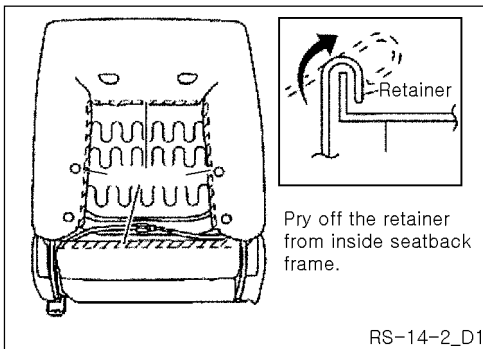
1. Disconnect the side airbag harness and seat warmer connector, and remove the fixing clip.



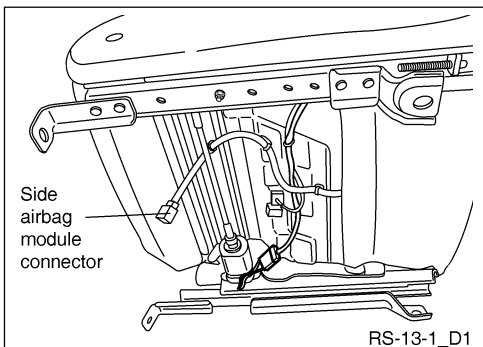
2. Remove the seatback board assembly.



3. Remove the seat fixing clip.



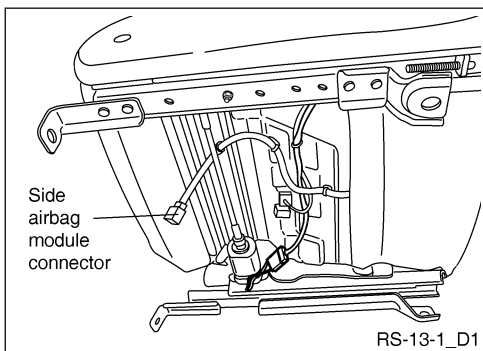
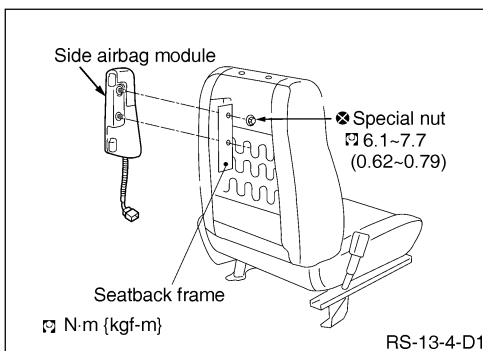
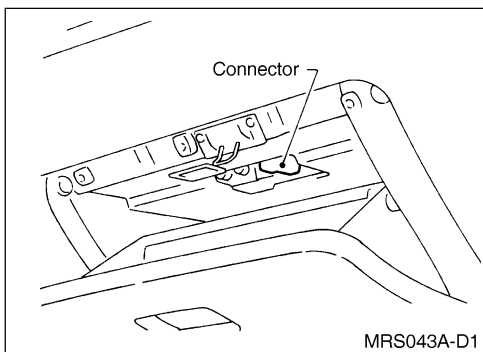
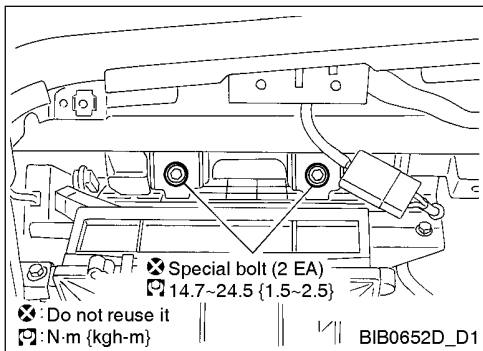
4. Pry off the retainer.



5. While the seatback pad is flipped over sideways, remove the bolts (both right and left) from the seatback frame and slide/reclining device.

- Installation is in the reverse order of removal.

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG



Installation - Passenger Airbag Module

- Always work sideways or below from the airbag module.

1. Install the passenger airbag module to the steering member.

- The harness should not be stuck between the rear of airbag module and steering member.

2. Install the glove box assembly (Glove box lid is open).

3. Connect the airbag module connector to the body harness connector.

4. Close the glove box lid.

5. Connect the battery cables.

6. Perform "SELF-DIAG RESULTS" using CONSULT-II to check that the airbag system is normal.

Installation - Side Airbag Module

1. Install the seatback assembly to the seat.

Refer to "FRONT SEAT" (BT-48).

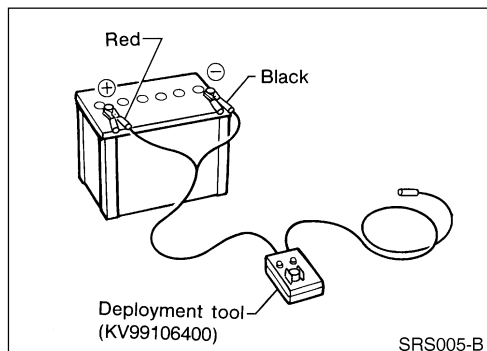
2. Connect the side airbag module connector.

3. Connect the both battery terminals.

4. Perform "SELF-DIAG RESULTS" using CONSULT-II to check that the airbag system is normal.

Airbag Module Disposal

- Be sure to deploy the airbag module before scrapping the airbag module or the vehicle equipped with airbag system. If the airbag has already deployed under accident, scrap it as instructed in “Airbag Module Disposal (RS-24)”.
- Always use the deployment tool (SST: KV99106400) when deploying the airbag module.
- Be sure to away from airbag module deploying location at least 5 meters.
- When the airbag module is deployed, there are loud sound and smoke. They are not poisonous, but can stir nose and throat. Avoid inhaling the gas.
- The airbag module is very hot when deployed. Let the module cool down at least 30 minutes.
- Always wear gloves when handling the deployed airbag module.
- Do not wet the airbag module.
- Always wash hands after finishing deployment.
- Always deploy one airbag module at a time.
- When deploying the airbag module on the vehicle, park the vehicle in an open area where at least 5 meters clear from all directions.
- Use the voltage meter to check if vehicle’s battery is fully charged.
- Never scrap the airbag module if not deployed.



Deployment Tool

CONNECTING TO BATTERY

- Park the vehicle in an open area where at least 5 meters clear from all directions.
- Use a voltage meter to check if vehicle’s battery is fully charged.

CAUTION:

Battery must be fully charged.

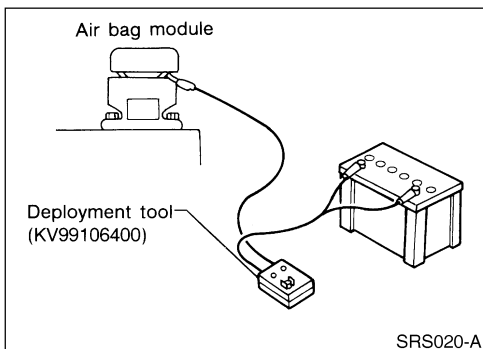
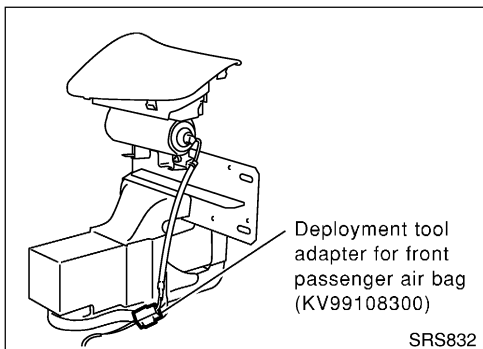
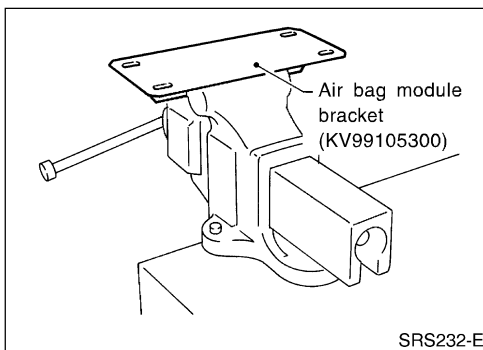
Remove the battery from the vehicle and place the battery at least 5 meters away from the vehicle.

- Wait for at least 3 minutes after removing the battery before proceeding next job.
- Connect the deployment tool (SST: KV99106400) red clip to the positive (+) terminal and black clip to the negative (-) terminal of the battery.

Check if terminals are correctly connected.

Airbag Module Deployment Procedure (Off-Vehicle Deployment)

When the airbag module is deployed on the vehicle, it may damage the vehicle. Always remove the airbag module from the vehicle if not scrapping the vehicle.



Front (Driver and Passenger) Airbag Module Deployment (Off-Vehicle Deployment)

1. Securely tighten the airbag module bracket (SST: KV99105300) to the vise.

2. Place the driver and passenger airbag module on the bracket and tighten them with 2 bolts.
3. Connect the deployment tool (SST: KV99106400) to the airbag module connector (SST: KV99108300).

4. Connect the deployment tool's red clip to the positive (+) terminal and black clip to the negative (-) terminal of the battery.

CAUTION:

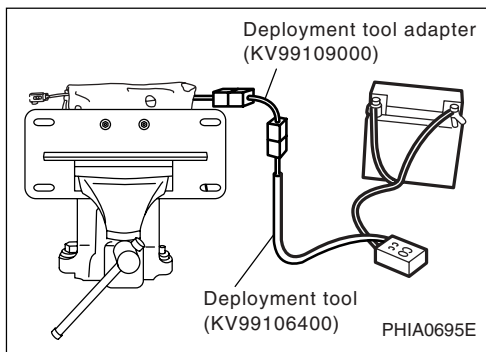
Before deploying the airbag module, be sure to away from it at least 5 meters.

5. Press the button on the airbag deployment kit to deploy the airbag.

SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

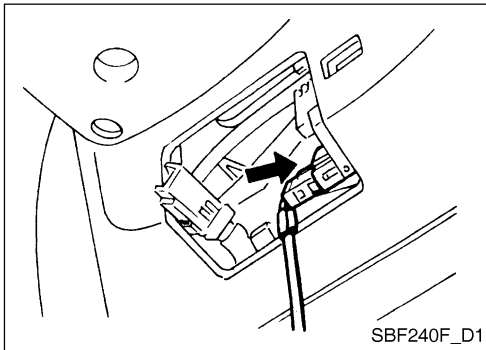
Side Airbag Module Deployment (Off-Vehicle Deployment)

1. Securely tighten the side airbag module to the vise.



2. Connect the deployment tool (SST: KV99106400) to the side airbag module connector (KV99109000).

3. Connect the deployment tool's red clip to the positive (+) terminal and black clip to the negative (-) terminal of the battery.
4. Press the button on the airbag deployment kit to deploy the airbag.



On-Vehicle Airbag Module Deployment

When scrapping the vehicle, deploy the airbag module on the vehicle.

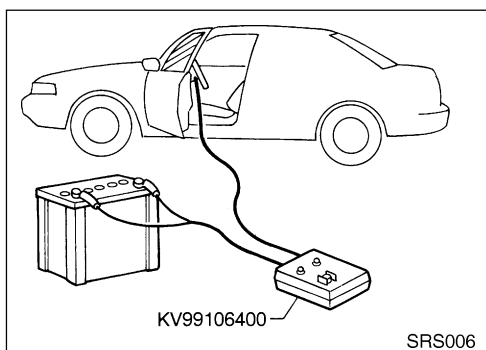
CAUTION:

Be sure to check that vehicle is empty when deploying the airbag module.

1. Wait about 10 minutes after removing the battery terminals.
2. Disconnect the airbag module connector.
3. Connect the airbag deployment tool (SST: KV99106400) to the airbag module connector.
4. Connect the deployment tool's red clip to the positive (+) terminal and black clip to the negative (-) terminal of the battery.
5. Press the button on the airbag deployment kit to deploy the airbag.

CAUTION:

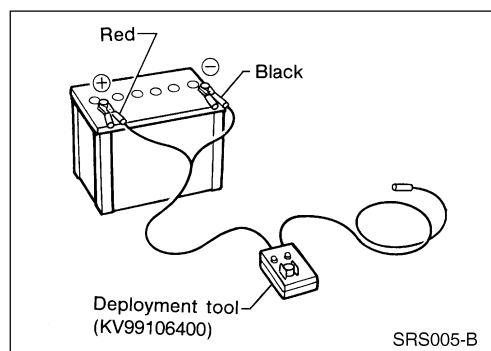
Always deploy one airbag module at a time.



SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

Airbag Module and Pretensioner Seatbelt Disposal

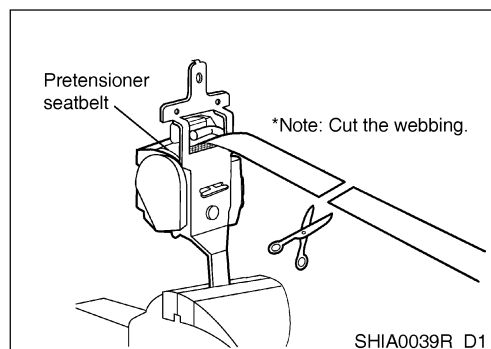
- Be sure to deploy the airbag module and pretensioner seatbelt before scrapping the airbag module, pretensioner seatbelt and vehicle. The deployed airbag module and pretensioner seatbelt should be scrapped as instructed in "Airbag Module Disposal (RS-20)".
- Be sure to stay away from airbag module and pretensioner seatbelt deployment location at least 5 meters.
- The airbag module deploys with a big sound and non-poisonous smoke. Warn the nearby people on your deployment. Be sure to deploy in good ventilation and do not work where a fire and smoke alarm system is near.
- The airbag module is very hot when deployed. Let the driver and passenger airbag modules cool down at least 30 minutes, and pretensioner seatbelt and side airbag modules for 10 minutes.
- Always wear gloves when handling the deployed airbag module and pretensioner seatbelt.
- Do not spray water on the deployed airbag module and pretensioner seatbelt.
- Always wash hands after finishing deployment.
- When deploying the airbag module and pretensioner seatbelt on the vehicle, park the vehicle in an open area where at least 5 meters clear from all directions.
- Never scrap the airbag module and pretensioner seatbelt if not deployed.



Deployment Tool

Prepare a fully charged battery.

- Check if the battery is fully charged using a battery tester and multimeter.
- Connect the deployment tool (SST: KV99106400) red clip to the positive (+) terminal and black clip to the negative (-) terminal of the battery.
- Check if terminals are correctly connected.

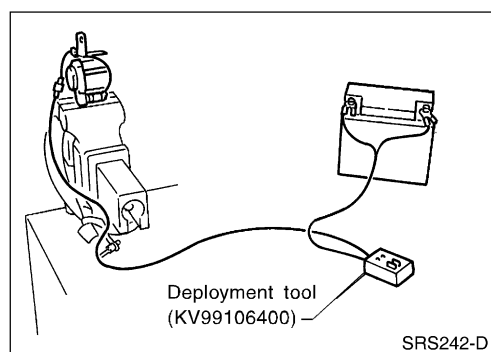


Pretensioner Seatbelt Deployment

1. Prepare a fully charged battery.
2. Tighten the pretensioner seatbelt to the vise.
3. Cut the webbing and remove the shoulder anchor and bracket.
4. Connect the deployment tool as shown in the illustration using a deployment tool adaptor proper for the pretensioner seatbelt.
5. Press the button on the airbag deployment kit to deploy the pretensioner seatbelt.

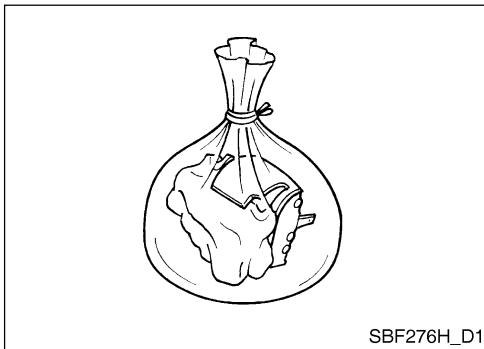
CAUTION:

- Be sure to stay at least 5 meters from pretensioner seatbelt when deploying it.
- The deployed pretensioner seatbelt is hot. Wait at least 10 minutes and then put in a vinyl bag and dispose.



SRS (SUPPLEMENTAL RESTRAINT SYSTEM) AIRBAG

- Always wear gloves when handling the deployed pretensioner seatbelt and wash hands afterwards.
- Do not spray water on the deployed pretensioner seatbelt or disassemble it.



Airbag Module Disposal

The deployed airbag module is very hot. Wait at least 30 minutes and then put in a plastic bag and dispose.

CAUTION:

- Do not spray water on the deployed airbag module.
- Always wear gloves when handling the deployed airbag module.
- When the airbag module is deployed, there will be smoke. It is not poisonous, but can stir nose and throat. Avoid inhaling the gas.
- Do not disassemble the airbag module.
- The airbag module cannot be reused.
- Always wash hands after service.

TROUBLE DIAGNOSIS - SRS AIRBAG

General

PRELIMINARY INSPECTION

Check the following components for normal.

- Battery [Refer to "BATTERY" (EL-24)]
- Fuse [Refer to "POWER SUPPLY ROUTING" (EL-5)]
- Unit components and harness connection

GI

EM

LC

DIAGNOSIS FUNCTION

The results of self-diagnosis can be read by airbag warning light or CONSULT-II.

EC

	User Mode	Diagnosis Mode (CONSULT-II)
Airbag	○	○

FE

The user mode let the driver to know the system troubles through airbag warning light. In diagnosis mode, CONSULT-II performs SELF-DIAG RESULTS.

RS

AC

DIAGNOSIS MODE FOR CONSULT-II

● WORK SUPPORT

The initial lock/unlock state of diagnosis sensor unit will be displayed on CONSULT-II and can command to unlock.

The ECU will be supplied as locked (no operation of airbag) so unlock it after service.

AV

EL

● SELF-DIAG RESULTS

The results of self-diagnosis will be displayed on CONSULT-II in real-time.

So can easily isolate the trouble causing component.

WH

● DATA MONITOR

Displays the input data airbag control unit in real-time.

CL

● ECU PART NUMBER

The installed ECU's part number will be displayed.

MT

AT

FA

RA

BR

ST

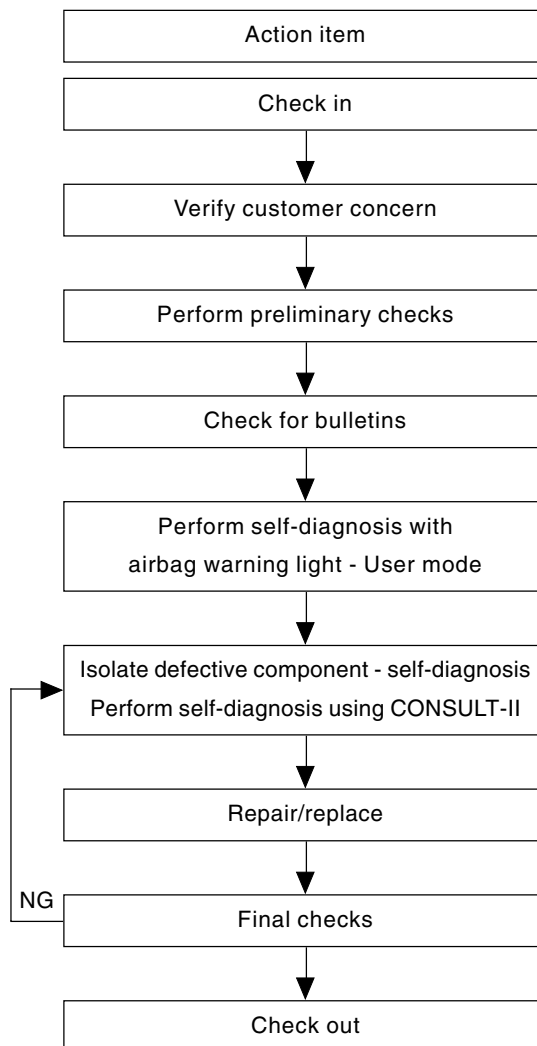
BT

TROUBLE DIAGNOSIS - SRS AIRBAG

CAUTION:

- The circuit tester should not be used for the SRS harness connector unless it is instructed in this Manual. The SRS wiring harness is covered with yellow protector or insulator in order to be easily identified on the front of the connector and harness assembly.
- Do not attempt to repair, splice or modify the SRS wiring harness. If the harness is damaged, replace it with new.
- Keep ground section clean.

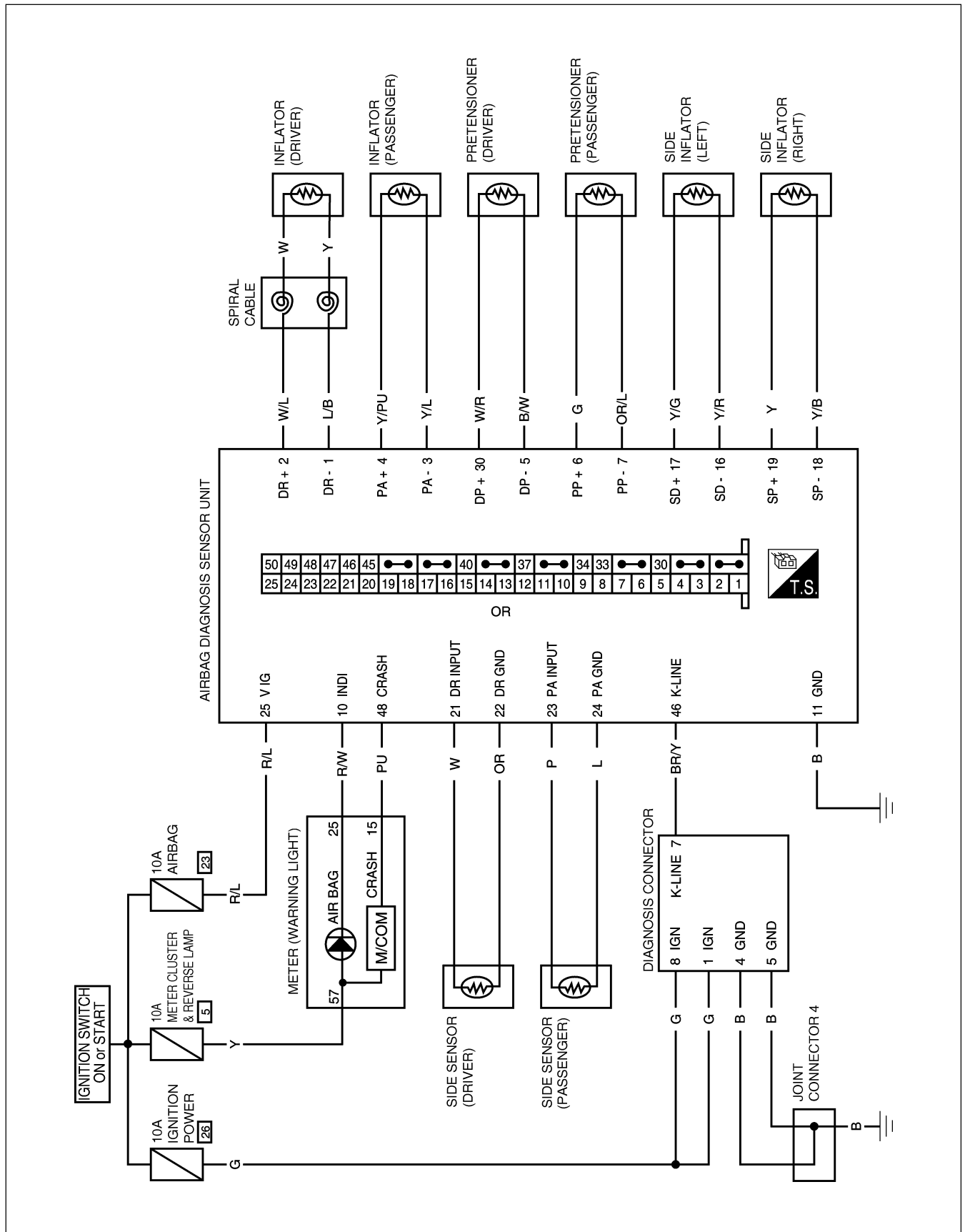
WORK FLOW



SORZ010_D1

TROUBLE DIAGNOSIS - SRS AIRBAG

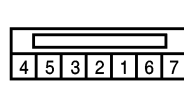
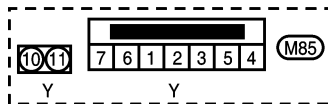
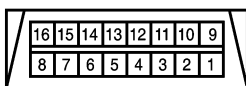
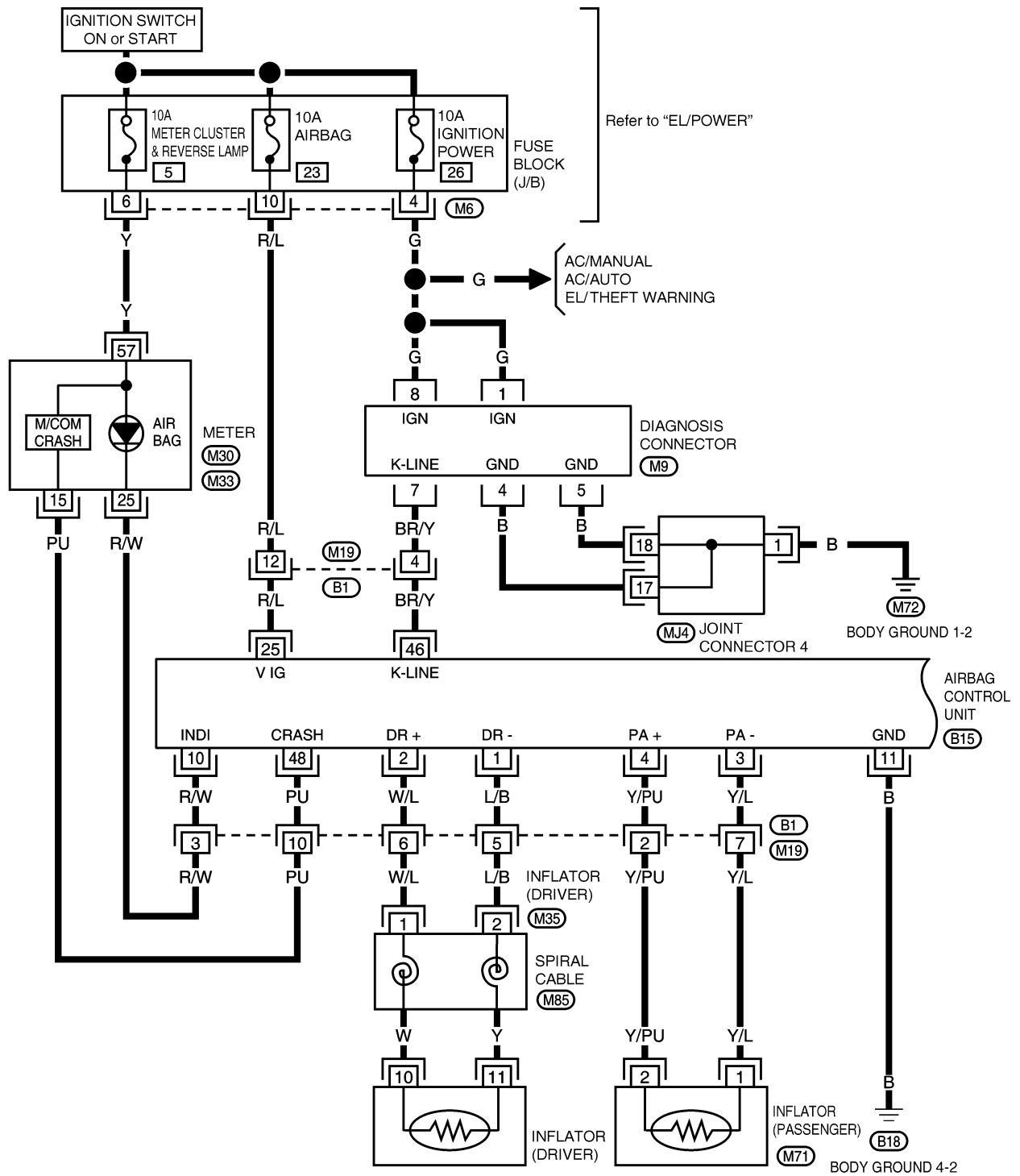
Circuit Diagram



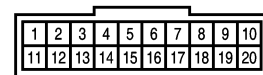
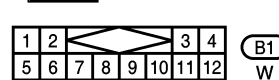
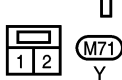
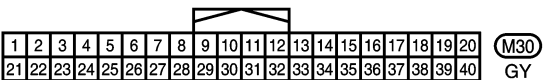
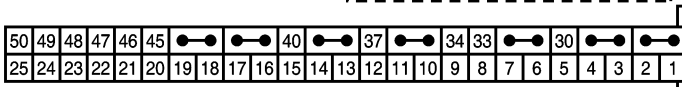
TROUBLE DIAGNOSIS - SRS AIRBAG

Wiring Diagram

RS/SRS-D01



Refer to "FUSE BLOCK (J/B)"
(M6)

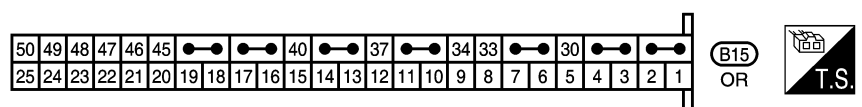
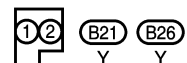
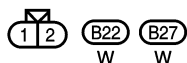
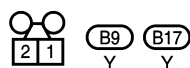
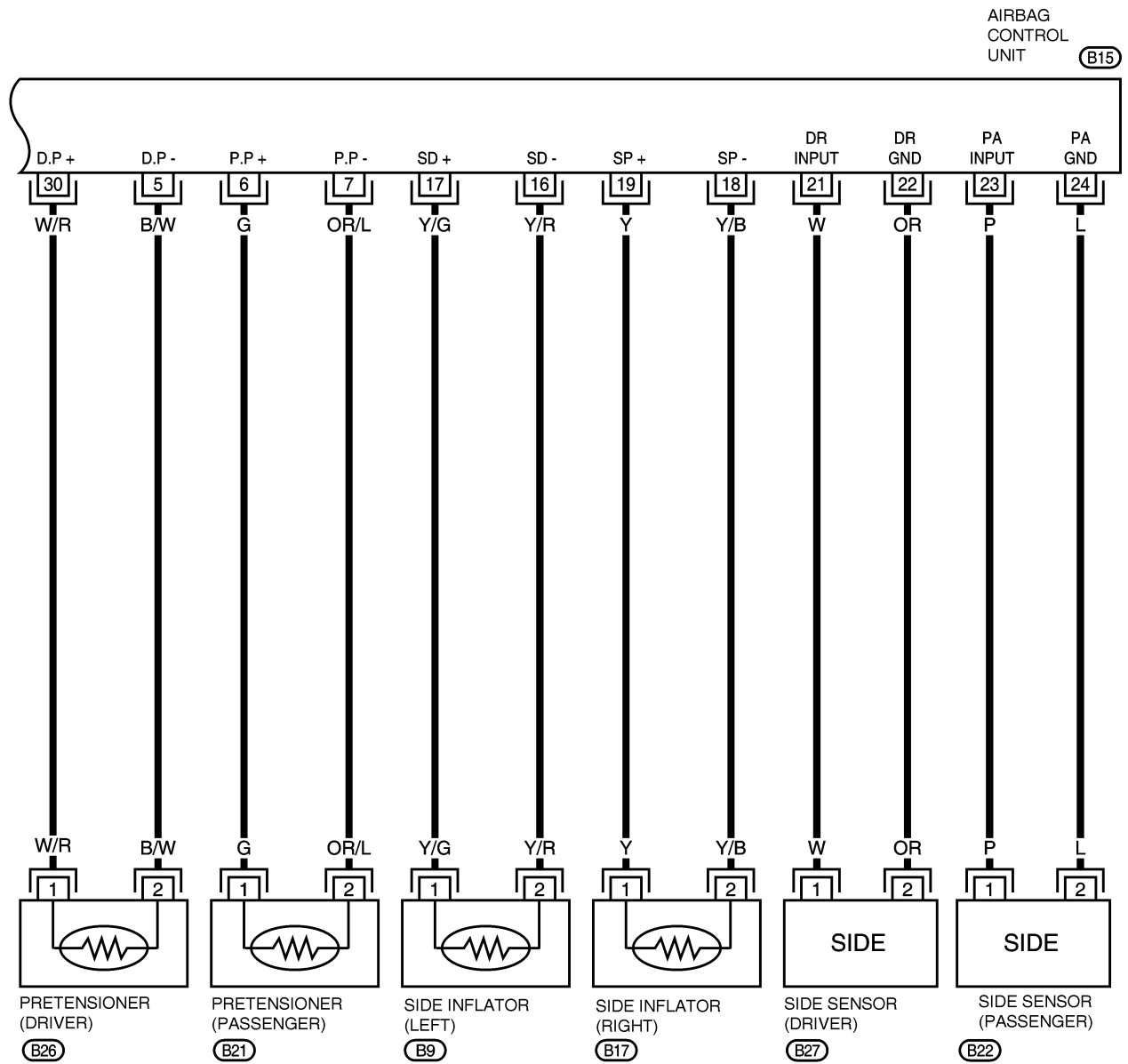


SOWZ001_O1

TROUBLE DIAGNOSIS - SRS AIRBAG

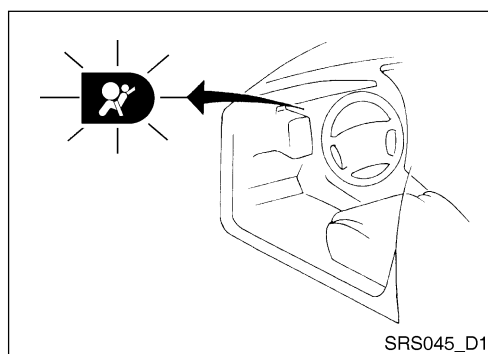
Wiring Diagram

RS/SRS-D02



SOWZ002_01

TROUBLE DIAGNOSIS - SRS AIRBAG



Self-Diagnosis

DIAGNOSIS USING AIRBAG WARNING LIGHT

1. The airbag warning light comes on when the ignition switch is turned from OFF to ON.
2. Compare airbag warning light operations with chart below.

SRS condition	Warning Lamp Operation	Time
When the system is normal		$T_a = 3 \text{ sec}$
When turning the ignition switch to ON position while the system is defective		$T_b = 0 \text{ sec}$
When a malfunction occurs while the system is normal		$T_c = 2 \text{ sec}$
When the system is restored from a malfunction		$T_d = 15 \text{ sec}$
When the airbag unit is defective When the airbag unit connector is disconnected When the warning lamp circuit is open		

★ : Malfunctioning point

☆ : Repaired point

TROUBLE DIAGNOSIS - SRS AIRBAG

Diagnosis Using CONSULT-II

Isolate defective section of the SRS airbag pretensioner seatbelt by using CONSULT-II.

1. Turn the ignition switch OFF. GI
2. Connect the CONSULT-II to the data link connector. EM
3. Turn the ignition switch ON. LC
4. Press "START (X-BADGE VHCL)".
5. Select "AIRBAG/PRT(R)". EC
6. Select "SELF-DIAG RESULTS". FE
7. Self-diagnosis result will be displayed.
8. Repair or replace the defective component according to self-diagnosis results.
9. Select "SELF-DIAG RESULTS" after repair and check the self-diagnosis results.

SELF-DIAG RESULTS

CAUTION:

Before removing the computer or before any operation on the airbag and pretensioner systems, it is vital that you lock the computer using the CONSULT-II.

Diagnostic item		Description	Repair order If replaced, recheck the SRS with CONSULT-II
NO DTC IS DETECTED.	-	-	-
IGN MODULE CONFIG (Diagnosis sensor unit)	-	-	1. Confirm the part number of diagnosis sensor unit 2. Replace diagnosis sensor unit
DR A/BAG CIRCUIT (Driver's front airbag circuit)	CC	Short circuit	1. Visually check the wiring harness connections
	CO	Open circuit	2. Replace the harness if it has visible damage
	CC.1	Short circuit to power	3. Replace driver airbag module (Deploy and then scrap it)
	CC.0	Short circuit to ground	4. Replace diagnosis sensor unit
PAS FNT AIRBAG CIR (Passenger's front airbag circuit)	CC	Short circuit	1. Visually check the wiring harness connections
	CO	Open circuit	2. Replace the harness if it has visible damage
	CC.1	Short circuit to power	3. Replace passenger airbag module (Deploy and then scrap it)
	CC.0	Short circuit to ground	4. Replace diagnosis sensor unit
DR SIDE A/BAG CIRC (Driver's side airbag circuit)	CC	Short circuit	1. Visually check the wiring harness connections
	CO	Open circuit	2. Replace the harness if it has visible damage
	CC.1	Short circuit to power	3. Replace side airbag module (left) (Deploy and then scrap it)
	CC.0	Short circuit to ground	4. Replace diagnosis sensor unit
AS SIDE A/BAG CIRC (Passenger's side airbag circuit)	CC	Short circuit	1. Visually check the wiring harness connections
	CO	Open circuit	2. Replace the harness if it has visible damage
	CC.1	Short circuit to power	3. Replace side airbag module (right) (Deploy and then scrap it)
	CC.0	Short circuit to ground	4. Replace diagnosis sensor unit
SIDE SENSOR CONFIG (Side sensor configuration)	-	-	1. Confirm the part number of side sensor unit 2. Replace side sensor unit
DR LATRAL SEN CIR (Driver's side sensor circuit)	CC.0	Short to ground	1. Visually check the wiring harness connections
	1. DEF	No communication	2. Replace the harness if it has visible damage
	2. DEF	Communication shutdown	3. Replace side sensor (left)
	3. DEF	Malfunctioning sensor	4. Replace diagnosis sensor unit

TROUBLE DIAGNOSIS - SRS AIRBAG

Diagnostic item		Description	Repair order If replaced, recheck the SRS with CONSULT-II
PA LATERAL SEN CIR (Passenger's side sensor circuit)	CC.0	Short to ground	1. Visually check the wiring harness connections
	1. DEF	No communication	2. Replace the harness if it has visible damage
	2. DEF	Communication shutdown	3. Replace side sensor (right)
	3. DEF	Malfunctioning sensor	4. Replace diagnosis sensor unit
CONTROL UNIT (Diagnosis sensor unit)	-	Internal circuit fault	1. Visually check the wiring harness connections 2. Replace diagnosis sensor unit
PRE-TEN CIRCUIT (Pretensioner circuit)	CC	Short circuit	1. Visually check the wiring harness connections 2. Replace pretensioner
	CO	Open circuit	
	CC.1	Short circuit to power	
	CC.0	Short circuit to ground	
WARN LITE CIR FALT (Airbag warning lamp circuit)	CC.1	Short circuit to power	1. Check airbag warning light circuit
	CC.0	Short circuit to ground	2. Check wiring
COMP SUPPLY VOLTS (System power supply)	1. DEF	Voltage outside permitted tolerance values	1. Visually check the wiring harness connections 2. Check battery voltage
	2. DEF	Too many micro-cutoffs	

Be sure to follow the above procedure when repairing the malfunctioning components and check if the malfunction has disappeared after the repair using the airbag warning light and CONSULT-II. If malfunction still appears, go to the next step and stop the service if malfunction has disappeared.

WORK SUPPORT

LOCK COMPUTER

This command should be used whenever servicing the system. It shuts down all trigger lines.

UNLOCK COMPUTER

This command is for unlocking the computer (either a new computer or following locking).

TROUBLE DIAGNOSIS - SRS AIRBAG

DATA MONITOR

Memo of Parameter

Display item	Index name	Reference value and notes
LINE 1 IMP	Wiring 1 impedance	It outputs the impedance of the pretensioner circuit. Approx. 4 ~ 5 Ω
LINE 3 IMP	Wiring 3 impedance	It outputs the impedance of the driver's front airbag module circuit. Approx. 2.7 ~ 3.2 Ω
LINE 4 IMP	Wiring 4 impedance	It outputs the impedance of the passenger's front airbag module circuit. Approx. 2.5 ~ 3.2 Ω
LINE 9 IMP	Wiring 9 impedance	It outputs the impedance of the passenger's side airbag module circuit. Approx. 2.0 ~ 3.0 Ω
LINE 12 IMP	Wiring 12 impedance	It outputs the impedance of the driver's side airbag module circuit. Approx. 2.0 ~ 3.0 Ω
NUMBER/IMP	Impact No.	The number of the valid impacts that the airbag diagnosis sensor determines

List of Status

Display item	Index name	Reference value and notes
TRG/IGN MO-DUL	Ignition module trigger	YES if the ignition module is operated when the airbag detects the impact
W/L CTRL IMP	Malfunction warning lamp control after collision	ON if the warning lamp is ON after the airbag diagnosis sensor unit detects the collision
F-W/L CTRL	Airbag warning light control	ON if the airbag warning light is ON
COM LK/TOOL	ECU Lock-Tool	LOCK if the airbag diagnosis sensor unit is locked by the diagnostic tool

COLLISION DIAGNOSIS

Front Collision

To repair the SRS after front collision, perform the following steps.

CAUTION:

Before removing the computer or before any operation on the airbag and pretensioner systems, it is vital that you lock the computer using the CONSULT-II.

WHEN SRS IS ACTIVATED IN A COLLISION (EXCEPT FOR SIDE AIRBAG)

1. Replace the diagnosis sensor unit.
2. Replace the pretensioner seat belt.
3. Remove the airbag module (except for side airbag).
4. Check the SRS components using the table shown below.
 - Replace any SRS components showing visible signs of damage (dents, cracks, deformation) with new one.
5. Install new airbag modules (except for side airbag).
6. By performing the "Self-diagnosis" (RS-30), check the system function by using CONSULT-II or airbag warning light. Ensure entire SRS operates properly.

WHEN SRS IS NOT ACTIVATED IN A COLLISION

1. Check the SRS components using the table shown below.
 - Replace any SRS components showing visible signs of damage (dents, cracks, deformation) with new.
2. By performing the "Self-diagnosis" (RS-30), check the system function by using CONSULT-II or airbag warning light. Ensure entire SRS operates properly.

SRS INSPECTION

Item	When SRS is activated	When SRS is not activated
Airbag module (Driver and passenger)	Replace - Install with new bolts.	<ol style="list-style-type: none">1. Remove airbag module. Check harness cover and connectors for damage, terminals for deformities, and harness for binding.2-1. Install driver airbag module into the steering wheel to check fit and alignment with the wheel.2-2. Install passenger airbag module into the instrument panel to check fit with the instrument panel.3. No damage found, reinstall with new bolts.4. If damaged, replace. Airbag module must be deployed before scrap.
Diagnosis sensor unit	Replace - Install with new bolts.	<ol style="list-style-type: none">1. Check case for dents, cracks or deformation.2. Check connectors for damage and terminals for deformation.3. If no damage is found, reinstall with new bolts.4. If damaged, replace with new bolts.
Steering wheel	<ol style="list-style-type: none">1. Visually check steering wheel for deformation.2. Check harness and connectors on the steering wheel for damage, and terminals for deformation.3. Install airbag module to check fit or alignment with steering wheel.4. Check steering wheel for excessive free play.5. If no damage is found, reinstall with new bolts.6. If damaged, replace.	
Instrument panel	See RS-36.	
Spiral cable	<ol style="list-style-type: none">1. Visually check spiral cable and combination switch for damage.2. Check connectors and insulation tape for damage.3. Check steering wheel for noise, binding or hard steering.4. If no damage is found, reinstall with new bolts.5. If damaged, replace.	
Harness and connectors	<ol style="list-style-type: none">1. Check connectors for poor connection, damage, and terminals for deformation.2. Check harness for binding, cuts, deformation or chafing.3. If no damage is found, reinstall harness and connectors.4. If damaged, replace the damaged section. Do not attempt to repair or modify the SRS harness.	

COLLISION DIAGNOSIS

Side Collision

To repair the SRS after side collision, perform the following steps.

CAUTION:

Before removing the computer or before any operation on the airbag and pretensioner systems, it is vital that you lock the computer using the CONSULT-II.

WHEN SIDE AIRBAG IS ACTIVATED IN A COLLISION

1. Replace the following components.
 - Diagnosis sensor unit
 - Side sensor (for the activated side airbag)
2. Remove the deployed side airbag.
3. Check the SRS components using the table shown below.
 - Replace any SRS components showing visible signs of damage (dents, cracks, deformation) with new.
4. Install new side airbag module with new bolts.
5. By performing the "Self-diagnosis" (RS-30), check the system function by using CONSULT-II or airbag warning light. Ensure entire SRS operates properly.

WHEN SIDE AIRBAG IS NOT ACTIVATED IN A COLLISION

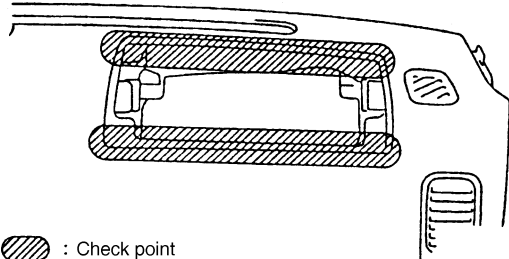
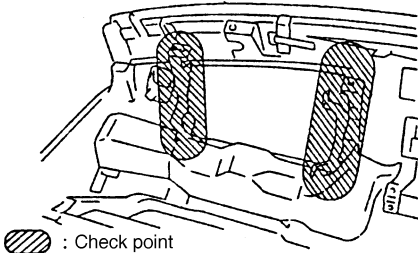
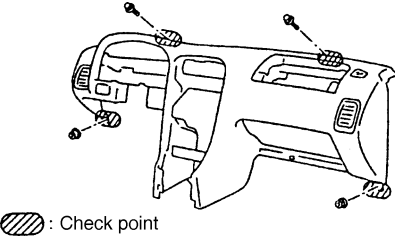
1. Check the SRS components using the table shown below.
 - Replace any SRS components showing visible signs of damage (dents, cracks, deformation) with new.
2. By performing the "Self-diagnosis" (RS-30), check the system function by using CONSULT-II or airbag warning light. Ensure entire SRS operates properly.

SRS INSPECTION AFTER SIDE COLLISION

Item	When SRS is activated	When SRS is not activated
Side airbag module (Left or right)	Replace the seatback assembly.	1. Visually check collided side airbag module for damage (dents, cracks, deformation). 2. Remove the collided side airbag module. 3. Check harness and connectors for damage, terminals for deformation. 4. Install side airbag module into the seatback to check fit and alignment with the seat. 5. No damage found, reinstall with new bolts. 6. If damaged, replace with new special bolts. Airbag module must be deployed before scrap.
Side sensor (Left or right)	Replace the collided side sensor with new bolts.	1. Remove the collided side sensor. Check harness and connectors for damage, terminals for deformation. 2. Visually check collided side sensor for damage (dents, cracks, deformation). 3. Install side sensor to check fit and alignment. 4. No damage found, reinstall with new bolts. 5. If damaged, replace with new special bolts.
Diagnosis sensor unit	Replace the diagnosis sensor unit with new bolts.	1. Check case and bracket for crack and deformation. 2. Check connectors for damage and terminals for deformation. 3. If no damage is found, reinstall with new special bolts and ground bolt. 4. If damaged, replace with special bolts and ground bolt.
Seat	1. Visually check the collided seat. 2. Remove the collided seat and check following components for damage and deformation. <ul style="list-style-type: none"> - Harness, connector, terminals - Frame, recliner, adjuster, slide 3. Install side airbag module into the seatback to check fit and alignment with the seat. 4. If no damage is found, reinstall the seat. 5. If damaged, replace with new bolts.	
Center pillar inner	1. Check collided sections for damage (cracks, deformation). 2. If damaged, repair the center pillar inner.	

COLLISION DIAGNOSIS

Instrument Panel Inspection

Item	SRS airbag
Instrument panel	<p>1. When passenger airbag is inflated, check the following points for bending, deformation or cracks.</p> <ul style="list-style-type: none"> ● Opening portion of passenger airbag <div data-bbox="778 409 1289 667">  <p style="text-align: center;">: Check point</p> </div> <div data-bbox="1348 651 1453 674">SRS388_D1</div> ● Passenger airbag module brackets <div data-bbox="778 763 1198 1014">  <p style="text-align: center;">: Check point</p> </div> <div data-bbox="1348 994 1453 1016">SRS389_D1</div> ● The portions mounting the instrument panel <div data-bbox="778 1099 1174 1335">  <p style="text-align: center;">: Check point</p> </div> <div data-bbox="1348 1312 1453 1335">SRS390_D1</div> <p>2. If no damage is found, reinstall the instrument panel.</p> <p>3. If damaged, replace the instrument panel and bolts.</p>