

# Subaru Supplemental Restraint Systems

The supplemental restraint system (SRS) consists of an airbag control module, left and right front sensors, a safety sensor built into the control module and airbag modules for the driver and passenger containing an airbag and inflator. Some recent Subaru models are also equipped with side airbag modules.

The left and right front sensors are connected in parallel. The front sensors and safety sensor are connected in series. The airbag will inflate if at least one front sensor and the safety sensor sense an impact at the same time.

## System Precautions

When servicing the airbag system, always follow the service procedures, precautions, and warnings indicated in the appropriate Subaru service manuals and related service bulletins. Failure to do so may result in personal injury and/or damage to the system.

Before servicing the airbag system, turn the ignition switch OFF, disconnect the battery and wait at least 10 minutes before proceeding. This gives the back-up capacitors in the airbag control unit time to discharge. This prevents accidental airbag deployment.

Always store the airbag module on a clean flat surface with the cover pad and horn buttons facing up. In addition, it should be stored with nothing else placed on top of it.

The airbag module must not be exposed to temperatures above 200 degrees F.

*Note: Exposure to temperatures of 300 degrees Fahrenheit or greater will cause airbag module deployment.*

Never discard an undeployed airbag module. When replacing an undeployed airbag module, save the packaging material (inner packaging and carton) from the new module. After installing the new module on the vehicle, repackage the old module in the same manner as the new module was packaged.

*Note: Do not ship modules unless they are packaged in an approved container. A deployed module may be enclosed in a plastic bag and scrapped in a normal manner.*

Wear protective clothing when handling a deployed airbag module. Always use gloves and eye protection. Even though the residue is NOT toxic, it may cause minor eye and skin irritation.

All of the SRS components are sealed. Do not disassemble or repair. If an SRS



Battery Disconnect



Proper Module Handling

component is damaged or inoperable, it must be replaced.

Do not drop any of the components. This could alter their sensitivity.

All SRS wiring is enclosed in a yellow housing for quick identification. Always use care whenever working near a yellow harness. If accidentally damaged, the SRS system harness must be replaced.

*Note: Never make wiring repairs to any circuit in the SRS system.*

Always use a digital multimeter when checking the SRS system components or circuits. Use of an analog multimeter may cause accidental airbag deployment.

Never attempt to measure the resistance of the airbag module.

Never place yourself or test equipment between the airbag module and the front seats when servicing the SRS system.

*Note: Review all precautions and service procedures outlined in the service manual.*

### On-Board Diagnostics

Subaru airbag systems are equipped with self-diagnostic capability. When the system is functioning normally, the airbag warning light will remain on for three seconds and go out when the ignition switch is set to ON.

If there is a malfunction, the airbag warning light will either stay ON or OFF continuously. In such cases, perform the on-board diagnostic in accordance with the specified service manual procedure to determine trouble codes. To retrieve stored diagnostic trouble codes:

1. Turn the ignition switch ON (with engine OFF).
2. Locate the diagnostic connector below the driver's side lower cover of the dashboard, above the accelerator pedal. Connect diagnostic terminal (1) to No. 1 terminal of diagnostic connector (2).
3. Check in accordance with the trouble code indicated by the AIRBAG warning light, and record the trouble codes.
4. Turn the ignition switch OFF and remove the diagnostic terminal from No.1 diagnostic connector terminal.

### Clear Memory

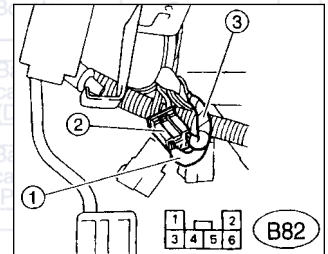
After eliminating the problem according to the trouble code procedures, clear

the memory as follows:

1. Make sure the ignition switch is ON (and engine OFF). Connect one diagnostic terminal (1) on diagnostic connector (2) terminal No.1.
2. While the warning light is flashing, connect the other diagnostic terminal (3) on terminal No. 2 for at least three seconds.
3. After the memory is cleared, the normal warning light flashing rate resumes (Warning light flashes every 0.6 seconds ON-OFF operation.). The memory can't be cleared if an SRS problem still exists.
4. After clearing the memory, remove the diagnostic terminals (1) and (3) from the diagnostic connector (2).

### Component Evaluation

If SRS self-diagnosis reveals a fault in the system, or if the vehicle has been involved in



Clearing Diagnostic Codes

an accident, it will be necessary to evaluate the condition of individual SRS components. Inspection and replacement standards for all Subaru SRS components are detailed in the paragraphs which follow.

### Front Sensor(s) (If Applicable)

#### Inspection Standard:

- Check the front section for damage, regardless of whether or not the airbag deployed; or
- The designated trouble code is outputted during self-diagnosis. Please refer to the diagnostics section in the appropriate service manual for further information.



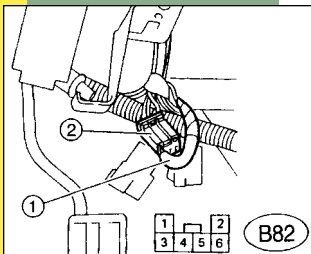
Front Sensor

**Replace the front sensor(s) if one or more of the following conditions exist:**

- Airbag is deployed.



Airbag Warning Light



Reading Diagnostic Codes

- Bracket is cracked, deformed, or damaged in any manner.
- The housing is cracked, deformed, or damaged in any manner.
- The label that identifies the manufacturing number is peeling off or deteriorated.
- Harness circuit is broken, wire core is exposed, corrugated tubing is cracked, etc.
- Front sensor is dropped to the floor or ground.
- Front sensor had been determined to be faulty during self-diagnosis.

### Airbag Module (Driver's and/or Passenger's)

#### Inspection Standard:

- The vehicle is damaged in a collision, regardless of whether or not the airbag deployed; or
- The designated trouble code is outputted during self diagnosis. Please refer to the diagnostics section in the appropriate service manual for further information.

#### Replace the airbag module if one or more of the following conditions exist:

- The Airbag is deployed.
- The pad surface is scratched, cracked, deformed, or damaged in any manner.
- The harness and/or connector is cracked or deformed, their circuits are broken, wire core is exposed, etc.
- The mounting bracket is cracked, deformed, or damaged in any manner.
- The mounting surface has been fouled with a foreign matter such as oil, grease, water, cleaning solvent, etc.
- The airbag module has been dropped to the floor or ground.
- The airbag module had been determined to be faulty during self-diagnosis.

### Airbag Control Module

#### Inspection Standard:

- The vehicle is damaged in a collision, regardless of whether or not the airbag deployed; or
- The designated trouble code is outputted during self-diagnosis. Please refer to the diagnostics section in the

appropriate service manual for further information.

### Replace The Airbag Control Module If One Or More Of The Following Conditions Exist:

- The Airbag is deployed.
- The control module is cracked, deformed or damaged in any manner.
- The mounting bracket is cracked, deformed, or damaged in any manner.
- The connector is scratched, cracked, deformed, or damaged in any manner.
- The control module is dropped to the floor or ground.
- The control module had been determined to be faulty during self-diagnosis.

#### Inspection Standard:

- The vehicle is damaged in a collision, regardless of whether or not the airbag deployed; or the designated trouble code is outputted during self-diagnosis. Please refer to the diagnostics section in the appropriate service manual for further information.

### Replace The Main Harness If One Or More Of The Following Conditions Exist:

- Harness circuit is broken, wire core is exposed, corrugated tubing is cracked, etc.
- Connector is scratched, cracked, deformed, or damaged.
- The designated trouble code is output during self-diagnosis. Please refer to the diagnostics section in the appropriate service manual for further information.



Driver Airbag Module



Passenger Airbag Module



Airbag Control Module



SRS Wiring Harness

### **Replace The Combination Switch & Roll Connector If The Following Condition Exists:**

- The combination switch or steering roll connector is cracked, deformed, or damaged in any manner.

### **Steering Wheel**

#### **Inspection Standard:**

- The vehicle is damaged in a collision, regardless of whether or not the airbag deployed.

### **Replace The Steering Wheel If One Or More Of The Following Conditions Exist:**

- The steering wheel is cracked, deformed, or damaged in any manner.
- Ensure that the new airbag module fits properly in the steering wheel when installed.
- After installing the airbag module, ensure that it is free of interference with the steering wheel. Clearance between all points should be equal.

### **Steering Column Assembly**

#### **Inspection Standard:**

- The vehicle is damaged in a collision, regardless of whether or not the airbag deployed.

### **Replace the steering column assembly if one or more of the following conditions exist:**

- Ensure that the steering wheel free play, in axial and radial directions and is within specifications. Please refer to the diagnostics section in the appropriate service manual for further information.
- Ensure that the clearance between the steering column bracket and capsule is within specifications. Please refer to the diagnostics section in the appropriate service manual or Subaru Service Bulletin number 17-01-92, Item 4, for further information.

### **Side Airbag Module (Driver's and/or Passenger's, If Applicable)**

#### **Inspection Procedure:**

- The vehicle is damaged in a collision, regardless of whether or not the airbag deployed; or
- The designated trouble code is out-

puted during self diagnosis. Please refer to the diagnostics section in the appropriate service manual for further information.

### **Replace the side airbag module if one or more of the following conditions exist:**

- The Airbag is deployed.
- The pad surface is scratched, cracked, deformed, or damaged in any manner.
- The harness and/or connector is cracked or deformed, their circuits are broken, wire core is exposed, etc.
- The mounting bracket is cracked, deformed, or damaged in any manner.
- The mounting surface is fouled with a foreign matter such as oil, grease, water, cleaning solvent, etc.
- The airbag module has been dropped.
- The airbag module had been determined faulty during self-diagnosis.

### **Side Airbag Sensor (Driver's and/or Passenger's, If Applicable)**

#### **Inspection Standards:**

- Check the side section of the vehicle for damage, regardless of whether or not the airbag deployed; or
- The designated trouble code is outputted during self- diagnosis. Please refer to the diagnostics section in the appropriate service manual for further information.

### **Replace the side airbag sensor(s) if one or more of the following conditions exist:**

- Airbag is deployed.
- Bracket is cracked, deformed, or damaged in any manner.
- The housing is cracked, deformed, or damaged in any manner.
- The label that identifies the manufacturing number is peeling off or deteriorated.
- Harness circuit is broken, wire core is exposed, etc.
- Sensor has been dropped.
- Sensor determined faulty during self-diagnosis.



Roll Connector



Steering Column