

consists of two or more current-carrying coils. The coils allow the rotation of the steering wheel while maintaining continuous electrical contact between the driver deployment loop and the steering wheel module. Two or four, if equipped with dual stage air bags, coil wires are used for the steering wheel module deployment loop. Additional coil wires are used for accessories attached to the steering wheel depending on the vehicle model. The steering wheel module coil connector is located near the base of the steering column. The connector contains a shorting bar that shorts the steering wheel module coil deployment loop circuitry to prevent unwanted deployment of the air bag when servicing the inflator module.

Steering Column and Wheel

The steering wheel and columns are designed to absorb energy when driver contact is made with the steering wheel or inflated air bag. In a frontal collision the driver may come in contact with the steering wheel directly or load the steering wheel and column through the inflated air bag. When the driver applies load to the air bag or the steering wheel the column will compress downward absorbing some of the impact, helping to reduce bodily injuries to the driver. The steering wheel and column must be inspected for damages after a collision.

Knee Bolster

The knee bolsters are designed to help restrain the lower torso of front seat occupants by absorbing the energy through the front seat occupants upper legs. In a frontal collision the front seat occupant legs may come in contact with the knee bolsters. The knee bolsters are designed to crush or deform, absorbing some of the impact, which helps to reduce bodily injuries. The driver and passenger knee bolsters are located in the lower part of the instrument panel and must be inspected for damages after a collision.

Side SIR System Description

The side supplemental inflatable restraint (SIR) system consists of the following components:

- AIR BAG indicators
- Inflatable restraint sensing and diagnostic module (SDM)
- Inflatable restraint side impact sensors
- Inflatable restraint roof rail air bag modules
- Inflatable restraint wiring harnesses

Inflatable Restraint Roof Rail Modules

The roof rail modules are located under the headliner extending from the front windshield pillar to the rear window pillar. The roof rail modules contain a housing, inflatable air bag, initiating device, and a canister of gas generating material. The initiator is part of the roof rail module deployment loop. When a side impact of sufficient force occurs the side impact sensor detects the impact and sends a signal to the inflatable restraint sensing and diagnostic module (SDM). The SDM compares the signal received from the side impact sensor to a value stored in memory. When the generated signal exceeds the stored value, the SDM will cause current to flow through the side deployment loop deploying the roof rail air bags. The SDM, roof rail modules, and the connecting wires make up the side deployment loops. The SDM continuously monitors the deployment loops for malfunctions and illuminates the AIR BAG indicator if a fault is present.

Each roof rail module is equipped with a shorting bar located on the connector of the module. The shorting bar shorts the roof rail module deployment loop circuitry to prevent unwanted deployment of the air bag when servicing the inflator module.

Inflatable Restraint Side Impact Modules

The side impact modules are located in the outside portion of the seat backs. The side impact modules contain a housing, inflatable air bag, initiating device, and a canister of gas generating material. The initiator is part of the side impact deployment loop. When a side impact of sufficient force occurs the side impact sensor detects the impact and sends a signal to the inflatable restraint sensing and diagnostic module (SDM). The SDM compares the signal received from the side impact sensor to a value stored in memory. When the generated signal exceeds the stored value, the SDM will cause current to flow through the side deployment loop deploying the side air bags. The SDM, side impact modules, and the connecting wires makeup the side deployment loops. The SDM continuously monitors the deployment loops for malfunctions and turns the AIR BAG indicator ON if a fault is present.

Each side impact is equipped with a shorting bar located on the connector of the module. The shorting bar shorts the side impact module deployment loop circuitry to prevent unwanted deployment of the air bag when servicing the inflator module.

Inflatable Restraint Side Impact Sensor

The side impact sensor contains a sensing device which monitors vehicle acceleration and velocity changes to detect side collisions that are severe enough to warrant air bag deployment. The side impact sensor is not part of the deployment loop, but instead provides an input to the inflatable restraint sensing and diagnostic module (SDM). The SDM contains a microprocessor that performs calculations using the measured accelerations and compares these calculations to a value stored in memory. When the generated calculations exceed the stored value, the SDM will cause current to flow through the deployment loops deploying the roof rail module air bags.

Inflatable Restraint Wiring Harness

The inflatable restraint wiring harnesses connect the inflators modules, inflatable restraint sensing and diagnostic module (SDM), deployment loops, and serial data together using weather pack connectors. SIR system connectors are yellow in color for easy identification. When repairing the SIR wiring harnesses follow the proper testing and wiring repair procedures listed in this manual.