



FIGURE 27-4 A small explosive charge in the pre-tensioner forces the end of the seat belt down the tube, which removes any slack in the seat belt.



FIGURE 27-5 A typical airbag system showing many of the components. The SDM is the "sensing and diagnostic module" and includes the arming sensor as well as the electronics that keep checking the circuits for continuity and the capacitors that are discharged to deploy the air bags.

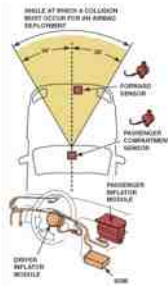


FIGURE 27-6 A simplified airbag deployment circuit. Note that both the arming sensor and at least one of the discriminating sensors must be activated at the same time. The arming sensor provides the power, and either one of the discriminating sensors can provide the ground for the circuit.

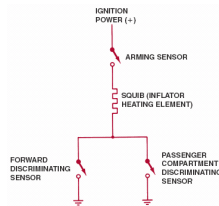


FIGURE 27-7 The inflator module is being removed from the airbag housing. The squib is the heating element that ignites the pyrotechnic gas generator that rapidly produces nitrogen gas to fill the airbag.



FIGURE 27-8 This shows a deployed side curtain airbag on a training vehicle.



FIGURE 27-9 An airbag magnetic sensor.

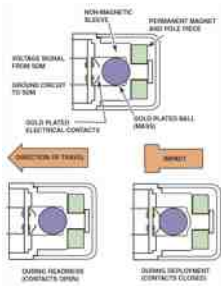


FIGURE 27-10 Some vehicles use a ribbon-type crash sensor.

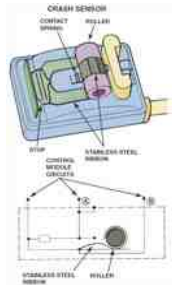
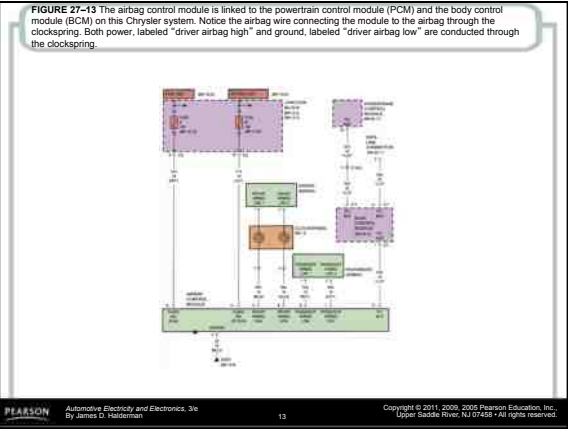


FIGURE 27-11 A sensing and diagnostic module that includes an accelerometer.



FIGURE 27-12 A driver's side airbag showing two inflator connectors. One is for the lower force inflator and the other is for the higher force inflator. Either can be ignited or both at the same time if the deceleration sensor detects a severe impact.







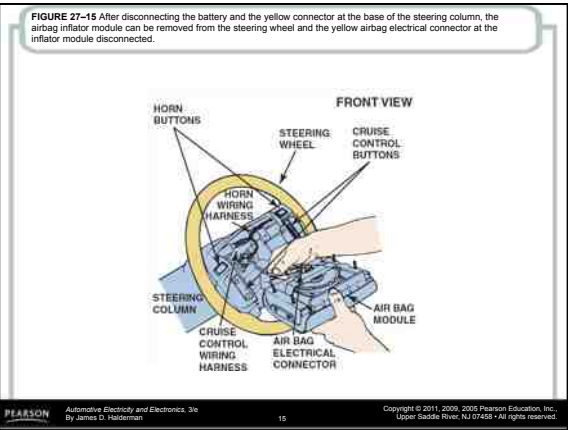


FIGURE 27-16 Shorting bars are used in most airbag connectors. These spring-loaded clips short across both terminals of an airbag connector when it is disconnected to help prevent accidental deployment of the airbag. If electrical power was applied to the terminals, the shorting bars would simply provide a low-resistance path to the other terminal and not allow current to flow past the connector. The mating part of the connector has a tapered piece that spreads apart the shorting bars when the connector is reconnected.



FIGURE 27-17 An airbag clockspring showing the flat conductor wire. It must be properly positioned to ensure proper operation.



FIGURE 27-18 An airbag being deployed as part of a demonstration in an automotive laboratory.



FIGURE 27-19 A dash warning lamp will light if the passenger side airbag is off because no passenger was detected by the seat sensor.



FIGURE 27-20 The passenger side airbag "on" lamp will light if a passenger is detected on the passenger seat.



FIGURE 27-21 A gel-filled (bladder-type) occupant detection sensor showing the pressure sensor and wiring.



FIGURE 27-22 A resistor-type occupant detection sensor. The weight of the passenger strains these resistors, which are attached to the seat, thereby signaling to the module the weight of the occupant.



FIGURE 27-23 A test weight is used to calibrate the occupant detection system on a Chrysler vehicle.



FIGURE 27-24 A typical seat (side) airbag that deploys from the side of the seat.