



Airbags

Fact sheet for consumers

What is an airbag?

Many new cars have been released onto the Australian market fitted with the added safety feature of airbags. Most have the airbag in front of the driver. An increasing number of vehicle manufacturers now offer an additional airbag for the front passenger.

The main component of the system is a large nylon bag which is inflated and deflated rapidly during certain types of collision. The driver's airbag is usually located in the steering wheel whilst passenger airbags are installed in the head impact area of the dashboard. Airbag systems are not visible until activated.

The airbag is part of a 'Supplementary Restraint System' that is designed to work in conjunction with a seat belt.

Importance of wearing seat belts

In a collision the airbag inflates very quickly, generating considerable force in the process. If you are not seated correctly and not wearing your seatbelt, the bag may not protect you. In some circumstances, if you happen to be too close to the airbag when it deploys, serious injury could result, even in relatively low speed crashes.

It is therefore particularly important that you and your passengers are seated correctly with all seat belts fastened.

Since the airbag is not designed to be deployed in rollovers, rear end collisions or side impacts, seat belts offer the only restraint protection in these situations.

What powers the inflation?

An electric igniter initiates a chemical reaction to produce an inert gas which inflates the airbag in about three hundredths of a second (30 milliseconds). The chemicals used do not deteriorate with age or by the temperatures experienced in a hot vehicle.

What sets it off?

A typical airbag system has multiple sensors located at different positions in the vehicle and relies upon at least two of these activating simultaneously before inflation can occur. The direction and severity of impact must be within certain predefined limits before the sensors will allow the airbag to be detonated. Note that some systems may have one sensor only but rely upon rapid response signals to a microprocessor to achieve the same end.

What happens when it goes off? – deployment

Electrical current flows to the igniter when the sensors detect a collision of a specified type and severity. Inflation usually takes about 30 milliseconds. The deployment is very carefully timed so that the occupant meets the fully inflated airbag as he or she is thrown forward by the collision. The airbag then deflates rapidly as the occupant returns to the seated position. The entire process which takes place in a fraction of a second is represented in the diagram on the right.

Concerns expressed by some people about loss of visibility after deployment are unwarranted since the bag will deflate rapidly through vent holes, ensuring forward vision remains unhindered.

Transporting children in the front seat of vehicles with passenger airbags

In vehicles fitted with passenger airbags special care needs to be taken if a child seat is to be used in the front seat. In these instances use only forward facing child safety seats with the front passenger seat moved back as far as possible.

Children carried in rear facing child restraining devices are particularly vulnerable to injury if the back of the device is located close to the vehicle's dashboard. The force of the deploying airbag against the restraining device could cause injury to the child.

The illegal and very unsafe practice of nursing an unrestrained child in the front passenger seat is far more dangerous if the vehicle has a passenger airbag. In addition to the forces generated by the collision the child may also strike the deploying airbag at its source which could increase the likelihood of serious injury.

Glasses

At a normal distance from the steering wheel or dashboard, it is very unlikely that an occupant wearing glasses would experience any injury if hit by a deployed airbag. The airbag is designed to yield on contact with a controlled outflow of gas.

Hands on the wheel!

There is evidence that serious injury can be inflicted on the driver if his or her hands are resting on the steering wheel airbag cover at the time of deployment. The hands and limbs can become projectiles inflicting injuries to the facial areas -another good reason why the safe practice of holding the steering wheel by its outermost circumference should be followed.

Tampering with the dashboard or steering wheel covers

Generally the system is safe for all occupants providing that dashboard airbag covers, dashboard undercovers or the steering wheel airbag covers have not been tampered with. None of these covers should be left off for any reason.

Attaching objects to the airbag covers must be avoided

Avoid attaching items such as note holders, small magnets, bottle openers and travellers' clocks to the airbag covers. These objects could become dangerous projectiles after deployment.

Noise

Many people express concern as to how they might react to a deploying airbag - would they get a fright and lose control of the vehicle or would the noise burst their eardrums? Whilst it may not be a comfortable experience, generally the noise generated by an inflating airbag is no worse than that of a paper bag bursting at close range.

Fitment of electrical accessories

Cases of injury to inexperienced tradespersons have been reported after the accidental deployment of an airbag during the installation of accessories such as cassette recorders and radios. Work of this type should only be carried out by qualified tradespeople with the airbag system deactivated.

Repairs and modifications

Do not attempt to service, repair or modify the airbag system. Tampering with the system could cause accidental deployment and increase the risk of personal injury. Have the system serviced by people authorised by your vehicle's manufacturer.

Similarly, do not attempt to modify any part of the vehicle's front structure as this may affect the correct operation of the airbag system.

Warning: It is important to note that the electrical system will usually allow the airbag to deploy regardless of the ignition switch position.

Bull bars and roo bars

Bull bars or roo bars may only be fitted to a vehicle with airbags if the bar has been certified by the vehicle's manufacturer as being safe for that vehicle. Aftermarket bars can only be fitted to these vehicles if the bar manufacturer can demonstrate that the bar will not detrimentally affect the performance of the airbag system.