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Pop Up Bonnet

What is a pop up bonnet?

The pop up bonnet, also known as a deployable bonnet, is a new innovation in vehicle design intended to protect pedestrians who are hit by the front of the vehicle. The pop up bonnet compliments other changes in vehicle design that will offer better protection to pedestrians in the future.

Several manufacturers are developing pop up bonnet systems. Over the coming years they will be introduced in some models of new vehicles.

How does it work?

In an accident in which a car hits a pedestrian, the part of the vehicle most likely to cause a serious or fatal injury is the bonnet, as this is where the head is likely to hit.

In vehicle designs where the bonnet is close to the engine underneath then there is a risk that the head will hit stiff components within the engine compartment, as the bonnet deforms in the impact. In order to offer some protection to pedestrians, the crush depth under the bonnet can be increased. On some types of vehicles the packaging in the engine compartment can be altered to create this clearance, other vehicles will use technology, such as a pop up bonnet, to achieve the space.

A pop up bonnet is designed to rise in an accident involving a pedestrian to soften the blow, absorb the head impact energy, and reduce the severity of the injury.

A sensor array along the front of the car detects if the object struck is a pedestrian to prevent the system from deploying by mistake. If the sensors calculate that protection can be offered, then the bonnet will deploy.

Springs or a small pyrotechnic charge will raise the bonnet, depending on which manufacturer has designed the system, the raising mechanism is at the rear of the bonnet close to the windscreen.

The raised bonnet will create a larger clearance between the bonnet and the engine underneath, and will cushion the blow, reducing the speed of the head gently. The front and rear of the bonnet both rise to create the necessary space underneath and offer some protection for adults and children.



Road Safety..... **Information**

Advice about pop up bonnets

At the moment no production car is fitted with a pop up bonnet. However they will emerge onto market as several manufacturers have announced plans for production models soon.

The system will not be active all of the time that the vehicle is in motion, and many vehicles will have upper and lower speeds, between which the system is active. This is to prevent the system from deploying in situations where it would not offer additional protection.

If a pop up bonnet has deployed, it will return to its original position. However, the raising mechanism can only be activated once and the bonnet will not be able to be reattached. It is likely that the system will activate the vehicle's hazard warning lights and you should read about the specific details of your system in your vehicle's manual.

There will be a warning message on the dashboard when the system has deployed, and you should take your vehicle to the nearest repairer that is authorised by the manufacturer. The deployable bonnet will contain many parts not found on typical road vehicles and so it is important to get the repairs conducted by someone who is trained to do them.