



COMPREHENSIVE ROOF AIRBAGS

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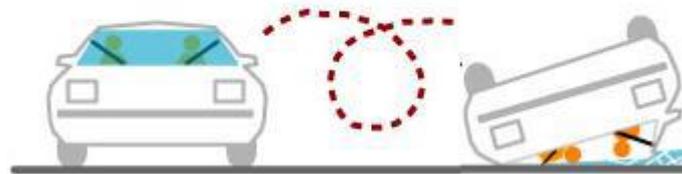


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Problem Statement

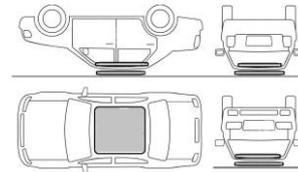
- ❑ During a rollover situation there are possibilities of passenger's head hitting the roof of the vehicle causing injury depending upon the passenger's height, head room, vertical and angular momentum where in only side and curtain airbags cannot provide a complete head and neck protection.
- ❑ In case of open top and convertibles beyond rollover bars and seat belts there are some situations where head can get in direct contact with road surface and things like debris in a rollover scenario.

Vehicle Rollover

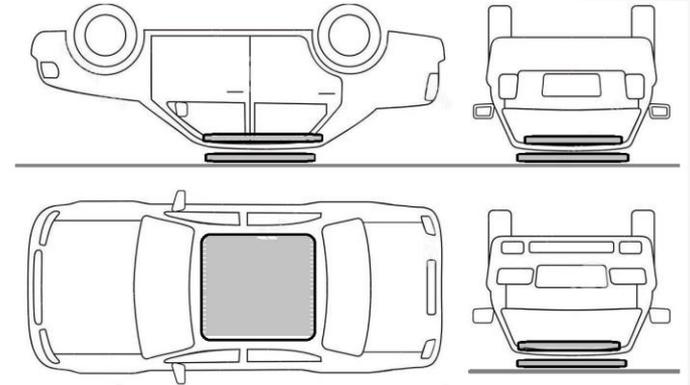
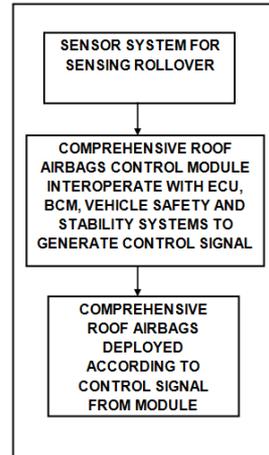
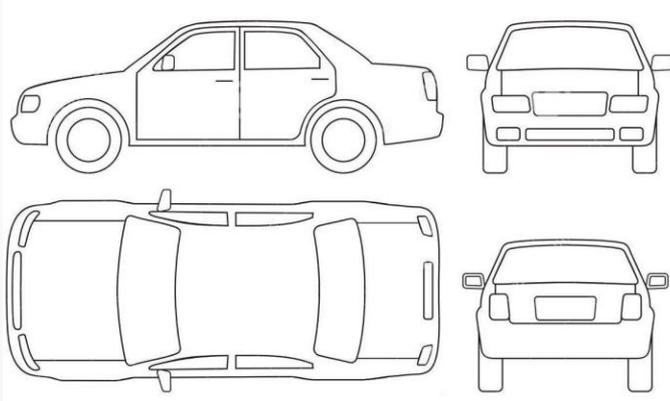


Concept

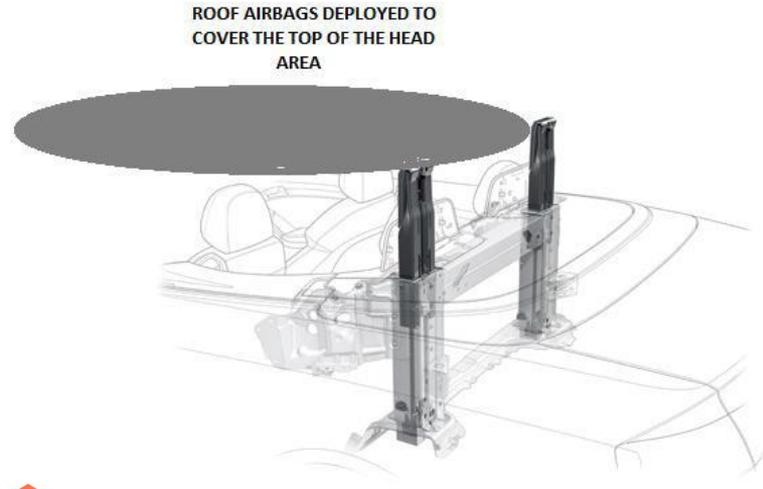
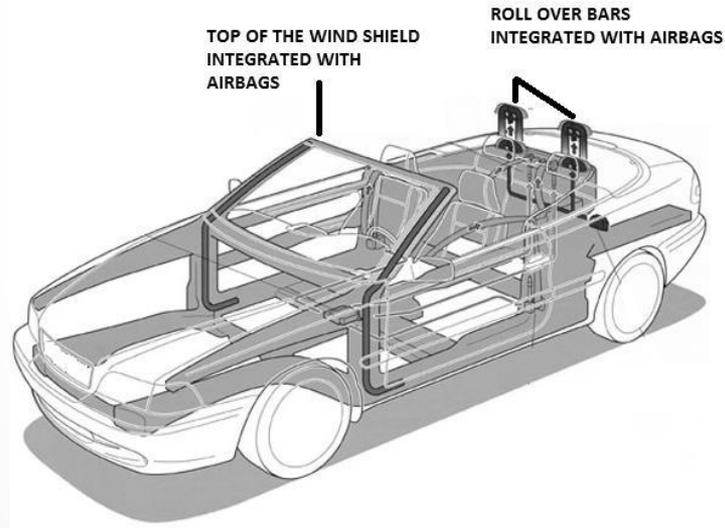
- ❑ Comprehensive Roof Airbags (CRA) are integrated or installed internally and externally between, through and across the top of windshield, top of the roll over protection bars, head liner, roof rails, top of A, B and C pillars.
- ❑ These CRA's works particularly in a roll over situation and deployed to cover the area with airbags on either one or more or combinations of inside headliner, outside rooftop and over the top of occupants head.
- ❑ CRA integration and deployment are all based on the configurations and type of the vehicles thereby forming a protective layer to prevent or reduce the severity of head hitting the roof top in closed top vehicles and head hitting the road surface and debris in case open top vehicle ultimately to protect the passengers all to avoid or mitigate the head, neck and spine injury.
- ❑ During a roll over situations the CRA deploys the airbags externally on the roof top to provide a protective layer to mitigate the roof top deformation and shockwave propagations thereby reducing the severity of the impact.



Feasibility and Functionality CRA



Integration of Airbags in open top and Convertibles



Thank You

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