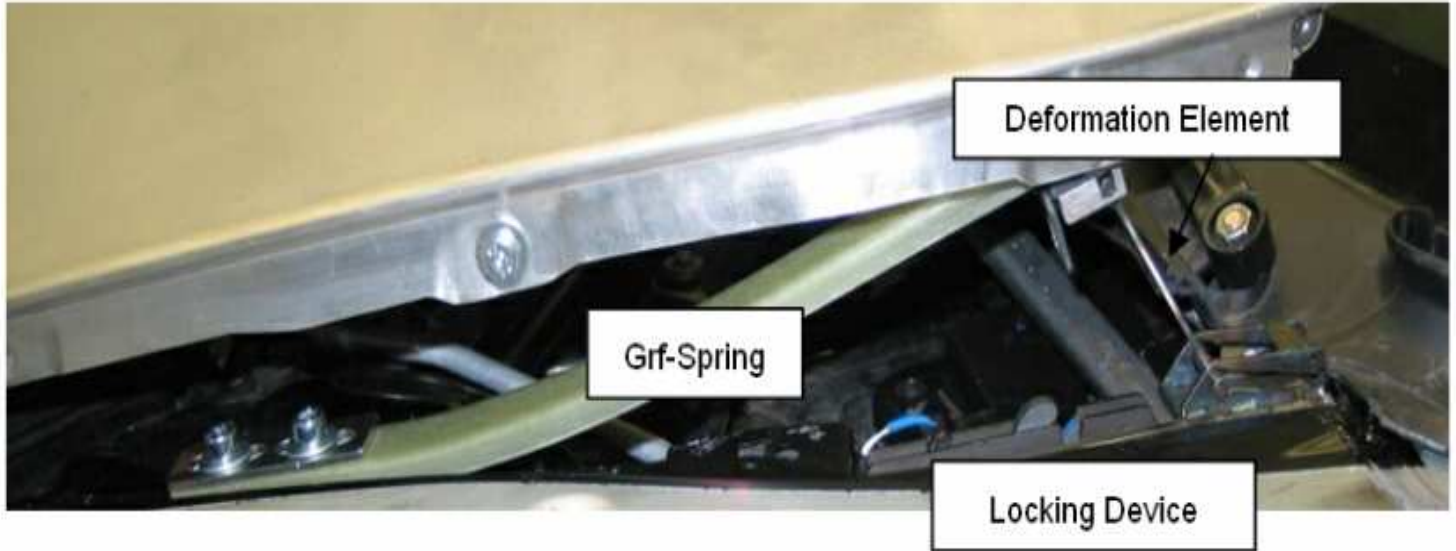


# Concept<sup>®</sup> - ACTIVE MOTOR HOOD



## Functional Description

Research and development in the area of pedestrian protection deals with various solution possibilities which reduce the risk of injury to a pedestrian in the event of a collision with a vehicle.

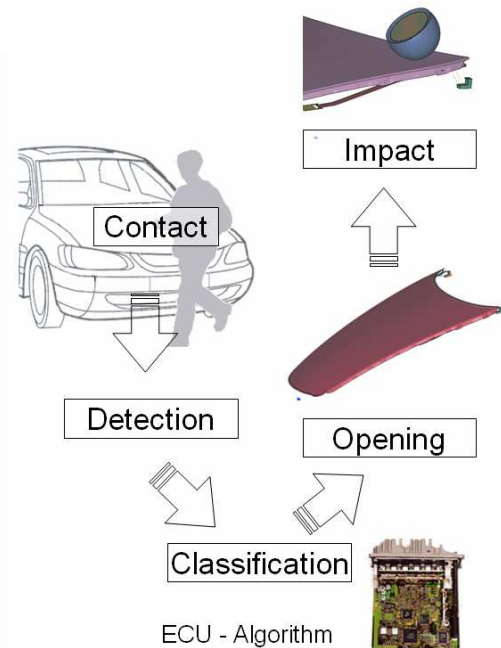
Concept Technologie's active hood presents a system for passive safety precautions in the vehicle front area. A patent for the system was applied for in 2002.

By lifting the hood, more free space is gained, and this can then be used for the deformation of the hood. The deformation of the head impact allows the effective energy to be absorbed, thus preventing the pedestrian's head from being exposed to a greater force.

Our active hood system consists of three elements:

- ➔ Leaf spring
- ➔ Locking mechanism
- ➔ Trigger mechanism

The leaf spring performs the task of connecting the vehicle body and the hood, bringing the hood into the opened position.



## Benefits at a Glance:

- ✓ Simple and compact design makes it ideal for mass production
- ✓ Minimum installation space
- ✓ Cost effective manufacturing
- ✓ Complete reversibility

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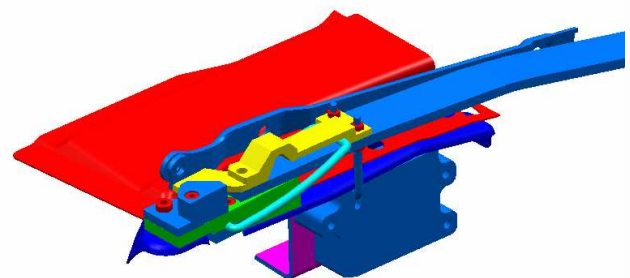
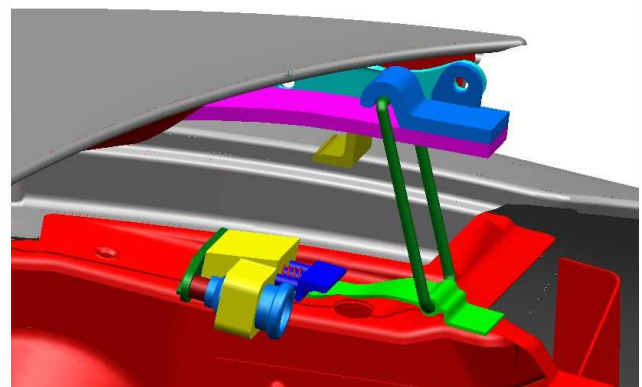
Via a locking mechanism the leaf spring is held in a pre-loaded position, so that as soon as the sensor detects an accident with a pedestrian, the necessary energy for the hood movement can then be provided.

In the event of an accident with a pedestrian, the system is activated, and the hood is transferred to the active position. The movement between the two positions is completed in 40 ms.

In order to prevent the hood from returning to its original position, the system is equipped with another locking mechanism.

The locking mechanism is designed in such a way that it is able to absorb deformation energy, which makes sense when the pedestrian impact takes place in the area where our system, for the lifting of the hood, has been integrated.

## Fire/no-fire scenarios for triggering



The opening and closing of the hood operates undisturbed.

## Time Sequence of a Pedestrian Impact\*:

0 ms	First contact
20 ms	Pelvis contact with hood front, pedestrian loses contact with ground
80 ms	Upper body contact with hood
140 ms	Head contact with hood/windscreen

\* Under certain conditions