UNIVERSITY OF WATERLOO

TECHNOLOGY SUMMARY

High-Performance Air Suspension System

Potential applications

- On/off-road vehicles
- Passenger cars, trucks, buses
- Military vehicles
- Stationary equipment
- Stationary equipment

Background

Suspension systems are used to reduce vibrations/shocks transmitted to the vehicle body from the road/terrain being travelled in order to enhance driver/passenger comfort and protect cargo and chassis. Typical designs are a compromise between performance measures such as vehicle ride, handling, load capacity, size constraints, and energy consumption. The University of Waterloo is actively seeking automotive suppliers and manufacturers interested in commercializing an innovative, highly tunable air suspension system.

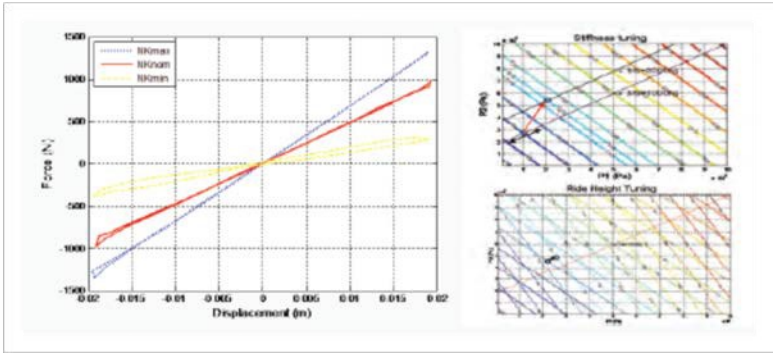
Description of the invention

The new technology developed by Waterloo researchers provides for a new class of road-adaptive suspension systems capable of independently tuning suspension stiffness and vehicle ride height corresponding to road conditions. Utilizing two pressurized chambers and a unique pneumatic control design, easy modification of suspension stiffness and ride height is made possible.

Advantages

Highly flexible system allowing for:

- Independent tuning of stiffness and ride height.
- Large static load variations.
- Large dynamic loads.
- Ride handling and comfort.
- High durability, low weight, complexity, and maintenance costs.
- Stiffness and damping control.
- Enables real time tuning to suit road surface.



Reference

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Patent status

Issued US and Canadian patents

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