

Technology Forecast

Electronic Suspension Systems

Automakers want their cars to provide a quiet, comfortable ride and stable handling. New electronic suspension systems should make that goal easier to reach. Ride-motion and steering wheel sensors will be able to tell if the pavement dips, curves, or has a bump. They will also sense how the driver is steering the car or truck.

Using information from the sensors, a control module will signal the suspension to be firmer or softer as needed. Electronically controlled dampers in the shock absorbers or struts will make these changes. The system can also be used to keep the vehicle's body flat while turning and cornering. This control is possible because of actuators connected to the stabilizer bars.

Also in the future, automakers will use hydroforming. This metal-shaping process uses water pressure to shape suspension and chassis components. Benefits include parts that can be used more precisely and that are very strong for their weight. Their strength will improve ride and handling. Squeaks and rattles will be reduced.

Action Activity

Hydroforming will change how some suspension systems are designed. Using the Internet and other sources, research the hydroforming process. Prepare a poster display that shows how the process works. Cite the advantages and limitations of hydroforming. Can hydroforming be used to shape aluminum parts? Present your research to the class.