

Tips and Technology

For Bosch partners

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Electrics / Electronics



BOSCH

Invented for life

The Bosch active gas pedal: gentle vibration can lighten pressure on the gas pedal and warn of wrong-way drivers

Sometimes during our search for tips for Tips&Technology we come across technological innovations that have not yet been installed in the vehicle and will appear in workshops only in a few years for sure. The following article deals with a development of Bosch, which will only go in series in future. But we want to give you an outlook how the future in the car will look like.

The driver's foot is responsible for one-quarter of fuel consumption. Up to now, the only thing that could be done about this rule of thumb was to drive gently and take eco-driving courses. Now, however, Bosch has developed a technical aid in the shape of the active gas pedal: its gentle vibration tells drivers when they have crossed the line from light touch to lead foot. "The Bosch active gas pedal helps drivers save fuel – and alerts them to potentially dangerous situations as well," says Stefan Seiberth, president of the Gasoline Systems division of Robert Bosch GmbH. And if the vehicle has an assistance system, the pedal becomes a warning indicator: coupled with the navigation system or a camera that recognizes road signs, the innovative Bosch gas pedal gives drivers a haptic warning signal if, for example, they are approaching a dangerous bend at too high a speed.

The active gas pedal helps drivers to be very light-footed on the accelerator. The feedback they get from the pedal allows them to reduce fuel consumption by as much as 7 percent. And CO₂ emissions are reduced accordingly. This is possible because the gas pedal can be networked with other automotive functions, such as the transmission. Up to now, the only indication drivers have had of the best time to shift gear has been in the form of small arrows on the instrument display. The active gas pedal comes with the option of a palpable indication of the best time to shift gear. "The pedal tells the driver when the economy and acceleration curves intersect," Seiberth says. If the driver still wants to accelerate some more before shifting gear, however, applying a little extra pressure is enough.

Hybrids: advance warning of when the combustion engine will restart

Additional fuel-saving potential is available in conjunction with start-stop coasting, i.e. when the engine is stopped while still moving at speed in order to save fuel. Bosch estimates that the engine can be stopped in this way on 30 percent of all journeys. The gas pedal can be set to give an alert as soon as coasting mode makes sense. And with advancing powertrain electrification, this innovative technology has further benefits to offer. The pedal also opens up a lot of fuel-saving potential in hybrids, since it lets drivers know when the combustion engine is about to take over from the electric motor, so they can lighten the amount of pressure on the gas pedal.

But it is not only in the area of fuel economy that the active gas pedal comes into play. It can make cars safer as well. This is because the innovative component can be connected with a whole series of assistance systems. In connection with collision warning systems, for example, the system can create a vibrating signal warning drivers not to accelerate any further. A simple change to the software settings is all that is needed to tailor the type and force of haptic feedback to automakers' specifications.

Drive clever with haptic feedback

Taking acceleration further Bosch's active gas pedal gives drivers an intuitive signal right at their feet, allowing them to stay even safer on the road.

up to

7%

reduction in fuel consumption

is possible thanks to signals that promote more efficient driving.



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The gas pedal goes online: signals warn of wrong-way drivers or traffic jams ahead

The innovative Bosch gas pedal can also be connected with the navigation system, enabling it to warn drivers if, for example, they are approaching a sharp bend at too high a speed. In addition, the gas pedal can be coupled with a camera that recognizes speed-limit signs. If drivers exceed the speed limit, the gas pedal will warn them by vibrating or exerting counter-pressure. Internet connectivity opens up even more possibilities. The Bosch innovation is already designed for cars that are connected with their surroundings. And via the vibrating pedal, the connected car will pass on warnings about dangerous situations – wrong-way

drivers, unexpected congestion, crossing traffic, and other hazards along the planned route – to the person at the wheel.

More information you find here: www.bosch-gaspedal.de