

# ESP – coming to the rescue in sharp bends

The intelligent life-saving electronic stability programme, ESP, is the truck driver's saviour in many situations. It not only makes the truck more stable on the road, it also increases the safety margin when the unexpected happens.



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## 1 THE DRIVER

The driver is only human – someone who can make mistakes. He may, for instance, enter a bend too quickly or discover too late that the curve gets increasingly tight, or see after he's already in the curve that the tarmac is covered in ice or loose gravel. Steering the wheel over to one side to escape or standing on the brakes to bring the rig to a halt does not help, but with ESP the situation can be solved.

## 2 STEERING

ESP features sensors that register the driver's steering wheel and pedal usage as well as the entire vehicle's movements. The system performs instantaneous calculations based on steering wheel movement and the vehicle's rotation around the vertical axis (is the trailer rig about to jackknife?). Another sensor measures lateral acceleration (is the rig about to skid off the road, or does it risk rolling over?).



## 3 ADJUSTABLE

ESP is part of the truck's electronic system and is closely linked with the engine's electronics, the braking system's various components and the trailer's own electronic network. As the vehicle approaches a critical situation, ESP determines if simply reducing engine power and braking very gently will be sufficient, or whether it is necessary to slam on the brakes and use every available retardation system interactively, and safely – for the sake of the driver.

## 4 ADVANCED SYSTEM

The truck has Volvo's advanced Electronic brake system, EBS, which includes Anti-lock brakes, ABS, and the Traction control system, TCS. These systems have many sensors that monitor all the forces and movements in the truck and the wheels, for example if a tyre loses its grip on a slippery surface. ESP is available for semitrailers.

## 5 ENGINE BRAKE

As the truck enters a critical situation, ESP regulates the engine brake by reducing engine torque and starting to brake one or more wheels on the rig as necessary. The system knows exactly which wheel or wheels must be retarded in any situation – perhaps an outer front wheel combined with all the trailer wheels (when oversteering in a bend) or just the inner rear wheels (in the event of understeering).

ESP: Electronic stability programme  
ABS: Anti-lock braking system  
TCS: Traction control system  
EBS: Electronic brake system