

FACT SHEET

BRAKE SOFTWARE PACKAGE



EBS is an electronically controlled anti-lock disc-brake system with a number of additional features. The system considerably increases driving safety and driveability.

EBS is an extremely fast-acting system thanks to its electronic signal transmission. By adjusting braking force at the wheels and axles to suit the vehicle's weight distribution, EBS achieves braking with optimal characteristics.

The system precisely adjusts its responses by analysing the vehicle's current operating situation. This is done with a number of sensors that register parameters such as wheel speed, braking force and brake function.

The braking system is designed to suit both single- and combination vehicles.

EBS has a pneumatic backup system consisting of two independent braking circuits similar to a conventional braking system. They step in to provide good braking performance if the EBS system stops functioning for any reason.



PRODUCTIVITY

- Fast-acting system, decreasing braking distance.
- Brake-force distribution enhances stability and counteracts jack-knifing tendencies.
- Reduced and more uniform wear on brakes and tyres.



SAFETY

- Increased comfort and safety with hill starting aid and emergency brake assistance.

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Fast-acting system that cuts the stopping distance

EBS is integrated into the vehicle's own electronic architecture. The EBS control unit uses a number of electrical signals to determine brake pressure in each individual brake cylinder. This electronic control is instantaneous and gives a balanced braking performance.

When the driver presses the brake pedal, signals specifying the required brake pressure are sent to the control unit. From a number of sensors, the control unit also receives information about parameters such as wheel speed, braking power and brake function. Based on this information, brake pressure is then regulated individually for each axle and wheel.

Brake force distribution enhances stability and counteracts jack-knifing tendencies

In order to avoid instability and jack-knifing tendencies braking force is distributed according to the principle that each axle should brake its own axle weight, and every part of the vehicle rig should brake its own weight.

Reduced but more uniform wear on brakes and tyres

The brakes used for retarding the vehicle and the way in which braking force is distributed are both optimised by the various subsystems included in EBS, such as brake blending and wear distribution.

Greater comfort and safety with hill starting assistance and brake assistance

If the driver brakes suddenly, EBS notes this and increases braking pressure to provide the most effective braking and the shortest stopping distance possible. Hill starting assistance makes it easier to start on an uphill gradient and provides smoother starts that are gentler on the driveline.

Broad function program for enhanced traffic safety and productivity

There are two EBS packages available – EBS-STD and EBS-MED (please see table on page 3 for further information).

Anti-lock Braking System (ABS)

Brake blending – the auxiliary brakes are activated and support the wheel brakes.

Poor brake performance warning – alerts the driver if retardation is too low in relation to pedal pressure.

Brake temperature warning – monitors brakes temperature.

Differential Lock Synchro (DLS) – the driven wheels are synchronised prior to engagement of the differential lock.

EBS status recorder via the TEA Truck Electronic Architecture and VCADS Pro (Volvo Computer Aided Diagnostics System).

External Brake Demand (EBD) via other systems.

Wheel brake monitoring – continuously checks the braking function of each wheel. A fault code is stored in the diagnostic system.

Drag torque control – prevents the driven wheels from locking up on slippery road surfaces when the accelerator is released.

Traction Control – anti-spin and synchronisation, distributes tractive force between the driven wheels.

Brake assistance – allows full braking force to be reached more quickly in emergency situations.

Hill starting aid – the brakes release once a given level of engine torque is reached, or when the clutch is released, or about one second after the brake pedal has been released in a truck with automatic gearbox.

Lining Wear Sensing (LWS) – indicates when about 20% of brake lining thickness remains.

Lining Wear Control (LWC) – evens out wear between the various axles' brake linings.

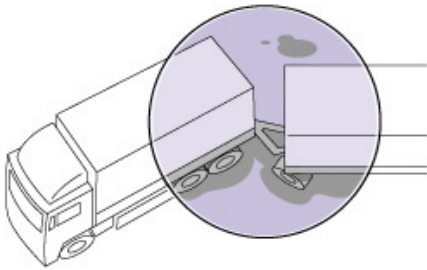
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For tractors there is also:

Automatic brake compensation (Coupling Force Control, CFC) between the tractor and trailer.

Trailer brake – makes it possible to carry out a safety check (by a push button) when switching trailers. Only for the Volvo FE.



In order to avoid instability and jack-knifing tendencies braking force is distributed according to the principle that each axle should retard its own axle weight, and every part of the vehicle rig should retard its own weight.

Features	EBS-STD	EBS-MED
ABS	X	X
Traction control	X	X
Lining wear sensing	-	X
Lining wear control	-	X
Brake blending	X	X
Drag torque control	X	X
Differential lock synchro	X	X
Hill start aid	-	X
Brake temperature warning	X	X
Poor brake performance warning	X	X
External brake demand (refuse)	X	X
Brake assistant	X	X
Wheel brake monitoring	X	X
Trailer brake, push button (FE)	X	X
Coupling force control	X	X
EBS status recorder	X	X