

FACT SHEET

## BRAKE SOFTWARE PACKAGE



**The electronic braking system (EBS) is an electronically controlled anti-lock brake system with several additional features. The system improves driving safety and driveability.**

The electronic signal transmission makes the EBS a very fast-acting system. The EBS acts with optimal characteristics by adjusting the braking force at the wheels and axles to suit the vehicle's weight distribution.

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

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

The EBS has a pneumatic backup system with two independent brake circuits, just like a conventional braking system. If the EBS for any reason stops functioning, the brakes are activated to provide a good braking performance.

### PRODUCTIVITY

- The fast-acting system reduces 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 Auto Hold and emergency brake assistance.

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### Fast-acting system that cuts the stopping distance

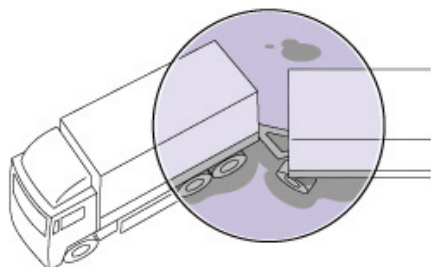
The EBS is integrated into the vehicle's own electronic architecture. The EBS control unit has several electrical signals to determine the brake pressure in each individual brake cylinder. The electronic control acts instantaneously for a balanced braking performance.

When the driver presses the brake pedal, signals specifying the required brake pressure are sent to the control unit. The control unit also handles parameters such as wheel speed, braking power and brake function from several sensors. Based on this information, brake pressure is regulated for each axle and wheel.

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

### Distribution of the brake force improves stability and counteracts jack-knifing tendencies

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 that every part of the vehicle rig should brake its own weight.



### Reduced and more uniform wear on brakes and tyres

The EBS has various subsystems such as brake blending and wear distribution, and they optimise how the brakes are used for retarding the vehicle and the distribution of the braking force.

### Greater comfort and safety with Auto Hold and brake assistance

If the driver brakes suddenly, the EBS increases the braking pressure to provide the most effective braking and the shortest stopping distance. Auto Hold makes the start on an uphill gradient easier and provides smoother starts, which reduce the driveline wear.

### Several functions for an enhanced traffic safety and productivity

**ABS** – Anti-lock Braking System

**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 synchronisation** – 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** 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 the full braking force to be reached quickly in emergency situations.

**Auto Hold** – keeps the brakes applied when the driver moves their foot from the brake pedal to the accelerator pedal. The brakes are released when a set level of engine torque is reached.

**Lining wear sensing** – indicates when about 20% of brake lining thickness remains.

**Lining wear control** – evens out wear between the various axles' brake linings.

**For tractors, there are also the following functions:**

**Automatic brake compensation (coupling force control)** between the tractor and trailer.

**Trailer brake** – makes it possible to carry out a safety check (by a push button) when switching trailers.

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Features	EBS-STD	EBS-MED
ABS	•	•
Traction control	•	•
Lining wear sensing	-	•
Lining wear control	-	•
Brake blending	•	•
Drag torque control	•	•
Differential lock synchronisation	•	•
Auto Hold	-	•
Brake temperature warning	•	•
Poor brake performance warning	•	•
External brake demand (refuse)	•	•
Brake assistant	•	•
Wheel brake monitoring	•	•
Trailer brake, push button	•	•
Coupling force control	•	•
EBS status recorder	•	•

• Standard. - Not available.