

Electronically Controlled Air Suspension



Vehicles with air suspension are equipped with an electronically controlled air suspension (ECAS). ECAS has the following main functions.

Chassis height control

ECAS controls the chassis height of the vehicle, e.g. for drivability. The chassis height can also be set to the most suitable height for coupling or uncoupling a trailer and loading or unloading of the vehicle. To allow the use of different semi-trailer types with different king pin heights by the same tractor, FT models (excluding Low Deck) can be specified with two chassis driving height positions. FT Low Deck models are equipped with a dashboard switch to increase the chassis height in order to maintain clearance between the semi-trailer front edge and the tractor chassis on steep ramps.

Pressure ratio control (for 6x2 vehicles)

ECAS controls the pressure of all air bellows to ensure correct axle load ratios at all times. Sensors measure the actual pressure per axle and these data are compared to the axle load ratio parameters set in the system's electronics. If necessary, pressure is adjusted.

Lift axle control

For vehicles with a leading or trailing rear axle an electro-pneumatically operated lifting device with an extra air bellow inside the chassis frame is available to lift the leading or trailing rear axle. The lifting device is operated by a switch on the dashboard wing or by the ECAS remote control.

Traction control

All vehicles with a leading or trailing rear axle are equipped with traction control, which is operated by a switch on the dashboard wing at vehicle speeds up to 25 km/h.

If traction control is switched on, the air bellows of the non-driven rear axle are deflated to increase the load on the driven axle for more traction. The lift axle will automatically be raised during traction help as far as the driving axle load limit is not exceeded.

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Axle load monitoring

The optional axle load monitoring system calculates the axle loads of the motor vehicle and also the (semi-)trailer when the (semi-)trailer is equipped with electronic brake system (EBS) and axle load monitoring (ALM). The central display in the instrument panel can display:

- the load per axle of the motor vehicle,
- the total axle load of the (semi-)trailer and
- the actual payload of the vehicle combination.

The ALM functionality includes overload detection and warning.

ECAS in bump position / ECAS freeze

This function is used to secure a stable vehicle situation during, for instance, PTO operation by a crane. If applied, the rear air suspension will be lowered to ultimately the vehicle's bump position. For vehicles with an air pressure sensor the air bellows are deflated to a pre-set residual pressure, which prevents uncontrolled deformation during the ECAS on bump situation.

The ECAS system will either regulate the residual pressure to remain on the set value or freeze the status of the ECAS system. ECAS freeze can also function separately from the residual pressure value. There will be no height, pressure or lift axle control as long as ECAS freeze is active.

