



Volvo Trucks. Driving Progress



**Specify your truck
for maximum
fuel efficiency**



There are several decisions to make when ordering a truck. Your specifications will have a big impact on your fuel consumption. Specifications on the powertrain and on factors that affect rolling resistance and aerodynamics are the most significant. Read on for some tips on specifying your trucks.

Specification options for your truck

Engine

For most long-haul assignments, a 460–500 hp rating is the most suitable power range to deliver efficient performance and fuel consumption. However, for demanding cycles such as hilly topography, high GCW's and frequent accelerations, there could be a need for higher average power. In order to maintain a high average speed, there are two ways to go. One way is to specify a lower rear axle ratio. This will help improve speed uphill but at the expense of non-optimised engine rpm and higher fuel consumption at normal cruising speed. The other way is to specify a more powerful, efficient engine. The higher power and torque will help maintain speed, without too many fuel-consuming down shifts, while keeping the right engine rpm at cruise speed. A highly efficient engine lowers the temperature of exhaust gases, in turn lowering fuel consumption.

Gearbox

A standard automated gearbox configured for long haul with predictive cruise functions is suitable for most long-haul assignments. Gearbox functions to consider are an overdrive gearbox when running the powertrain with heavier loads or on hillier terrain. Alternatively, crawler gears for startability and low speed manoeuvring are available. An automatic gearbox twinned with an average driver can save up to 3 per cent fuel.

Rear axle ratio and type

To find the right rear axle, you need to look at your typical assignment. What type of application will the vehicle run in? How much load do you normally carry? On what type of surface? This then needs to be combined with a suitable gearbox, engine and tyre dimension. The lowering of the engine optimum rev range requires a faster rear axle ratio to correctly match the engine for best fuel consumption. Lowering the axle gear ratio may help when carrying or towing heavy goods, particularly uphill.

Rolling resistance and wheel alignment

Use fuel-optimised long-haul tyres, which are designed with a thread pattern for low rolling resistance, combined with a rubber compound for low friction and long service life. Simply checking your vehicle's tyres and wheel alignment can have a major effect on your fuel economy. A misaligned combination leads to instability in steering and higher air resistance, since the wheels do not travel in the same tracks, meaning the vehicle will take up more space on the road. All of this has a negative impact on fuel consumption as well as tyre wear.

Axle configuration

As soon as we add an extra axle to a truck we are adding more weight, increasing rolling resistance, and also therefore fuel consumption and wear. When a truck is empty or part-loaded then it doesn't need all three axles, and can be specified with a 'lift axle'. This simply means that, using hydraulics, the whole extra axle can be lifted off the ground and kept that way whilst driving.

Aerodynamics

A combination of subtle aerodynamic improvements can save you fuel for the long-haul. Cab height, roof angle and design all minimize the impact of air resistance, while a roof spoiler can easily save up to 5 per cent fuel if your vehicles are travelling at consistently high average speeds. Side fairings and side skirts also make a positive difference. Many trucks are equipped with these, but they can also be specified if necessary.

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