

## Efficient Drive Technology for Heavy Duty Commercial Vehicles. TurboCompound-System



In the TurboCompound system, the exhaust gas flow from the exhaust turbo charger is directed via a power turbine. Energy contained in the exhaust gas is directly converted into mechanical energy and no longer simply dissipated to the environment. The energy thus gained is transmitted to the crank shaft via a transmission and increases the efficiency of the engine.

In long-distance traffic, at an annual mileage of 160 000 km and an average fuel consumption of 35–40 liters per 100 km, more than 1000 liters of fuel can be saved, depending on the operating profile.

### Benefits

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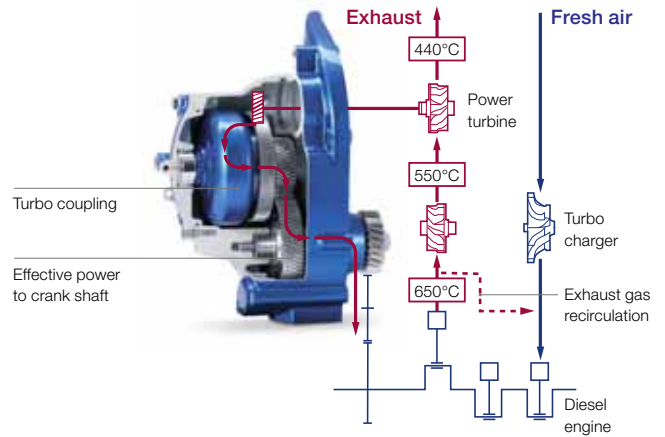
- Higher engine outputs while fuel consumption stays the same
- Very good driving behaviour and reaction of the engine
- Fuel savings of up to 2–4 % depending on operating profile
- Reduction of CO<sub>2</sub>-emissions
- Increased exhaust gas recycling rate to reduce NO<sub>x</sub>-emissions
- Downsizing to smaller, lighter and more fuel-efficient engines for heavy CV applications
- Compact, highly integrated design.



Off-road application in CNH 4x4 tractor with Iveco 13 TCD Cursor engine

The TurboCompound system allows reduced fuel consumption, reduces CO<sub>2</sub>-emissions and thus makes an important contribution to the environment.

## Function of the TurboCompound system



### Function and Operation

The exhaust flow from the exhaust gas turbo charger is directed via a power turbine. This turbine takes off thermal energy from the exhaust gas flow: rotation energy generated in this process is transmitted to the propshaft via a hydrodynamic coupling and a helical gear unit.

The Voith turbo coupling reduces torsional vibrations from the engine and thus protects the power turbine against damage. As a resistor in the exhaust gas flow, the exhaust gas power turbine allows increased exhaust gas recycling rates without any negative effect on the engine output.

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