



**Turbo
Technologies**

It's Time for the
New Generation



It's time for 6% Fuel Efficiency Improvement It's time for Reduction in Total Operating Costs It's time for Engine Downsizing...

With fuel prices rising steeply Cummins Turbo Technologies foresee the trend in engine downsizing gathering pace. In parallel both engine and vehicle manufacturers are striving to maintain or increase the power outputs from their products. Cummins Turbo Technologies have therefore developed a suite of next generation technologies and enhancements to meet this significant engineering challenge.

The next generation of products will have far reaching implications for the commercial vehicle industry. Only in time will their influence become clear but that goes with the territory when pushing technological boundaries.

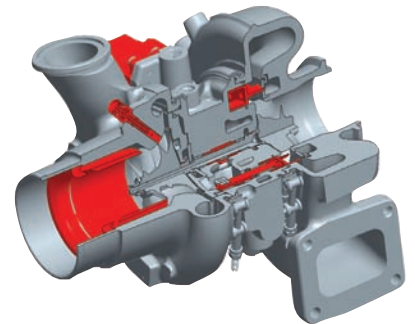
Next Generation Holset VGT™

Product Information and Features

- New actuator for reduced package space and plumbing
- Optimised VG mechanism for robustness and performance
- Improved sealing and cooling
- High efficiency compressor stage
- 2kg lighter than current HE400VG
- Reduced cost materials

Benefits

- Improved efficiency
- Enabling reduced CO₂
- Delivering significant reduction in operating cost



Waste Heat Recovery Turbine Expander

Product Information and Features

- Utilising waste heat from the engine can increase thermal efficiency
- Delivers energy to the drive-train (Mechanical) or a grid, network, battery (Electrical)
- Requires precision engineering and the latest manufacturing techniques
- The Efficiency is dependent on:
 - Working fluid
 - Available heat sources
 - Power output type (Electrical, Mechanical)

Benefits

- Reduces fuel consumption
- Reduces CO₂
- Heavy Duty trucks in Europe could see 5% benefit in fuel savings
- Savings of €4,000 per year



Next Generation Two-Stage System

Product Information and Features

- Holset RTC Technology – Channels exhaust gas to select gas 'ports' for limited exhaust control capability
- Flow channeling technology
- Integrated into Turbine Housing
- Wastegate port capability
- Patented Technology
- Suited to Light Commercial Vehicle application

Benefits

- Extended air flow range flexibility
- Enables high torque against wide engine speed range
- Engine downsizing
- Improved driveability and transient response
- Reduced fuel consumption
- Alternative to Variable Geometry



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