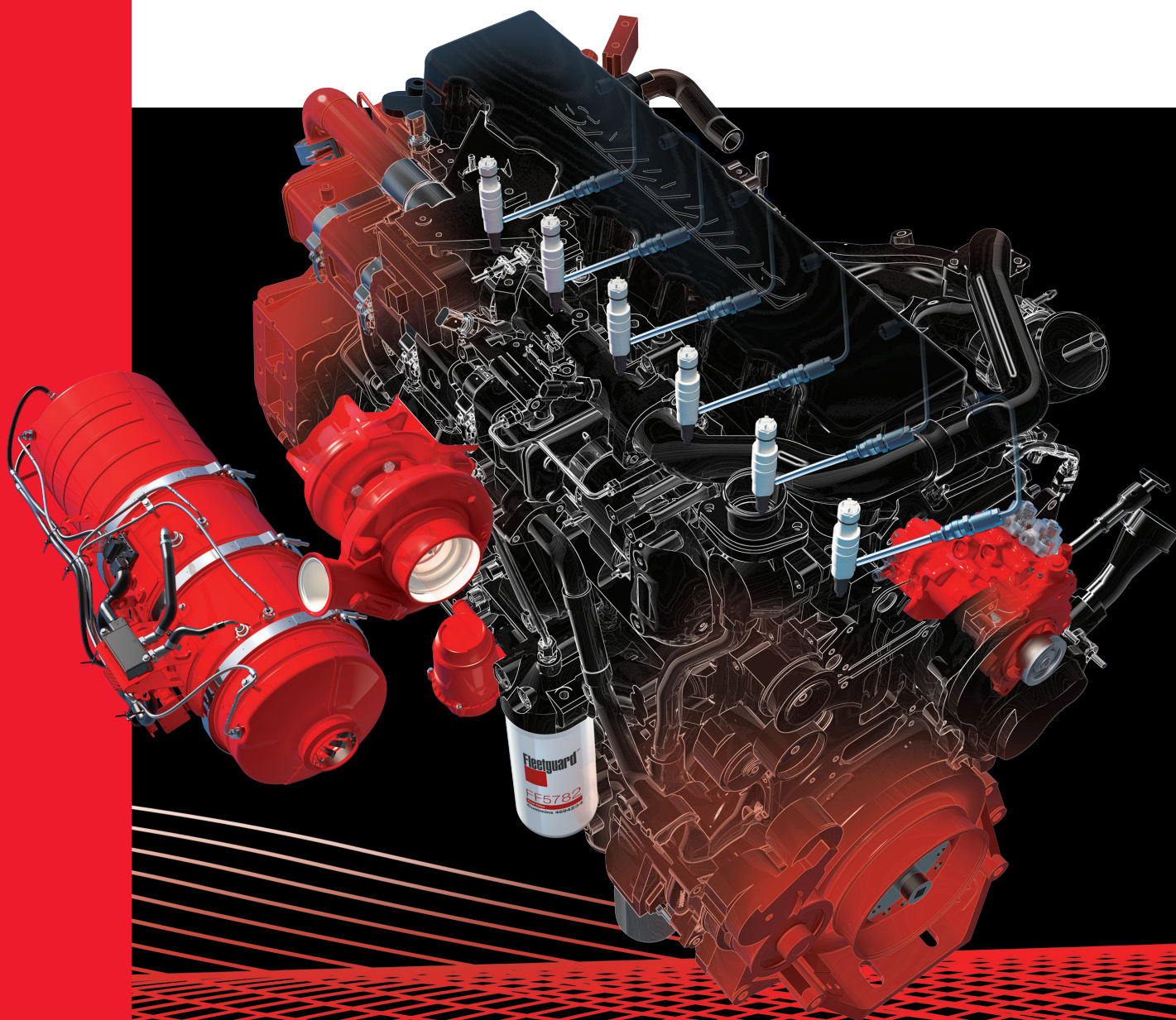




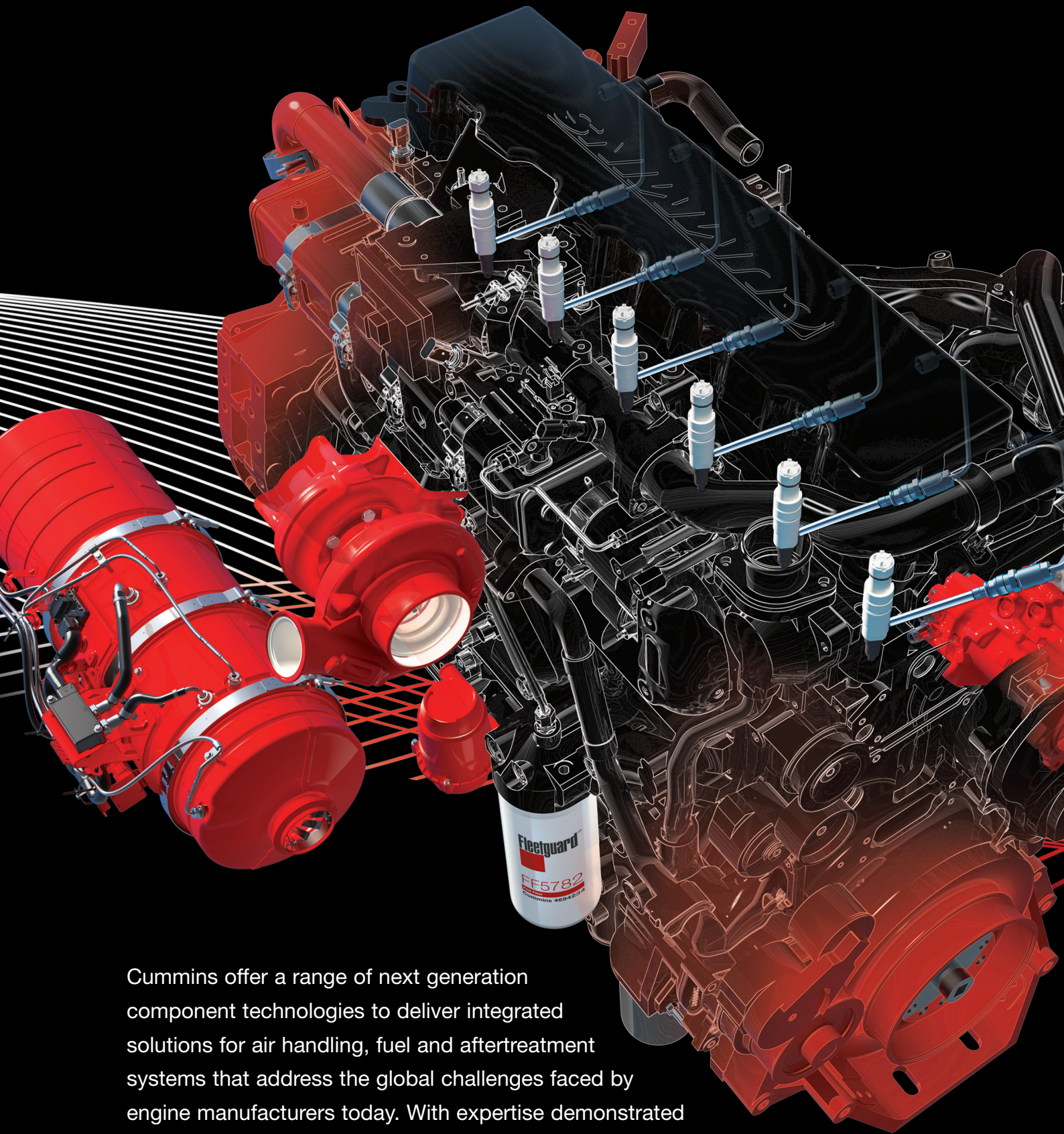
# Empowering Efficiency

System solutions driving higher efficiencies  
and lower operating costs





# Empowering Efficiency



Cummins offer a range of next generation component technologies to deliver integrated solutions for air handling, fuel and aftertreatment systems that address the global challenges faced by engine manufacturers today. With expertise demonstrated across the critical engine components including turbochargers, filters, fuel systems and aftertreatment systems, Cummins is in the unique position to provide industry leading component technologies and systems that meet ever higher demands for efficiency, durability and optimised performance.



# Fuel Systems

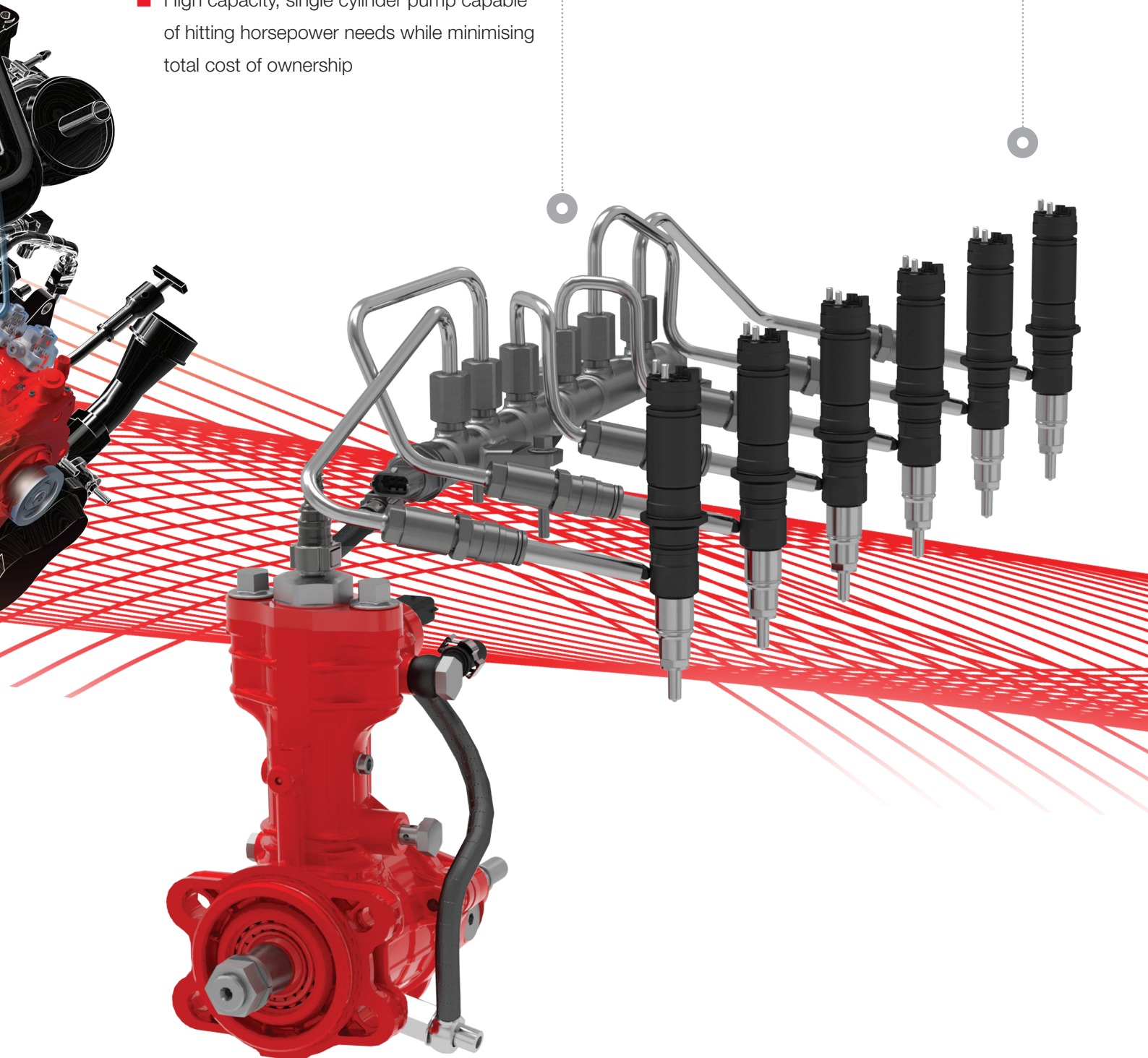
## New Mid-Range Fuel System

### Product Features

- Tailored injectors to the duty cycle provide industry leading fuel economy
- Leakless injectors contribute less parasitic loss than typical mid-range injectors
- High capacity, single cylinder pump capable of hitting horsepower needs while minimising total cost of ownership

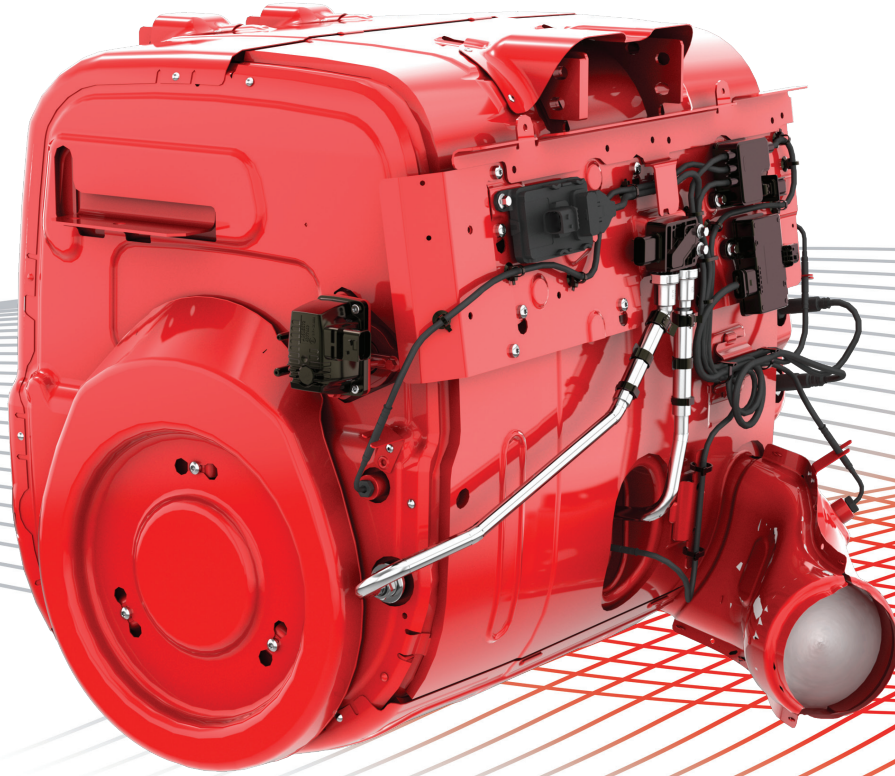
### Customer Benefits

- Delivers up to 5% efficiency improvements over competitor product
- Improved fuel economy
- Reduced total cost of ownership



# Aftertreatment

## New High Performance Compact Box™



### Product Features

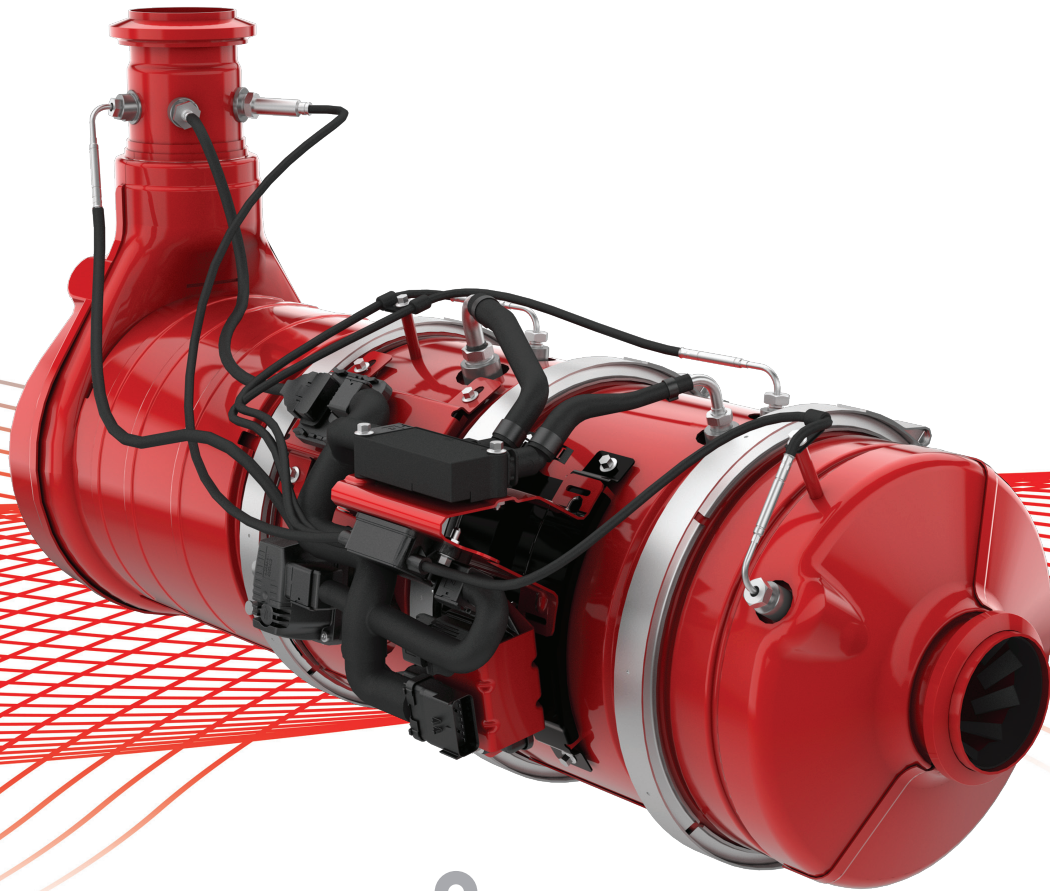
- 20% smaller than competitor heavy duty box system for easier vehicle integration
- 40% smaller and 20% lighter than current design for improved fuel efficiency
- Optimised urea mixing for higher NOx conversion and robust design to prevent urea deposit formation
- Catalysts optimised for passive operation to improve fuel economy and CO<sub>2</sub>, and minimise tail pipe temperature and catalyst aging

### Customer Benefits

- Achieves higher NOx conversion rates compared to the current modular aftertreatment system
- Simplified vehicle integration for OEM customers reduces total installation costs
- Improved fuel economy



# Single Module™



## Product Features

- Up to 60% smaller in diameter and up to 40% lighter than competitor modular aftertreatment systems
- Improved NOx conversion efficiency from advanced catalyst technologies
- Robust UL2 Urea Dosing System
- Optimised urea mixing, reducing risk of deposits
- Smaller, more compact package offers improved thermal management capabilities
- Simplified OBD strategy
- Passive regen minimises need for preventative maintenance

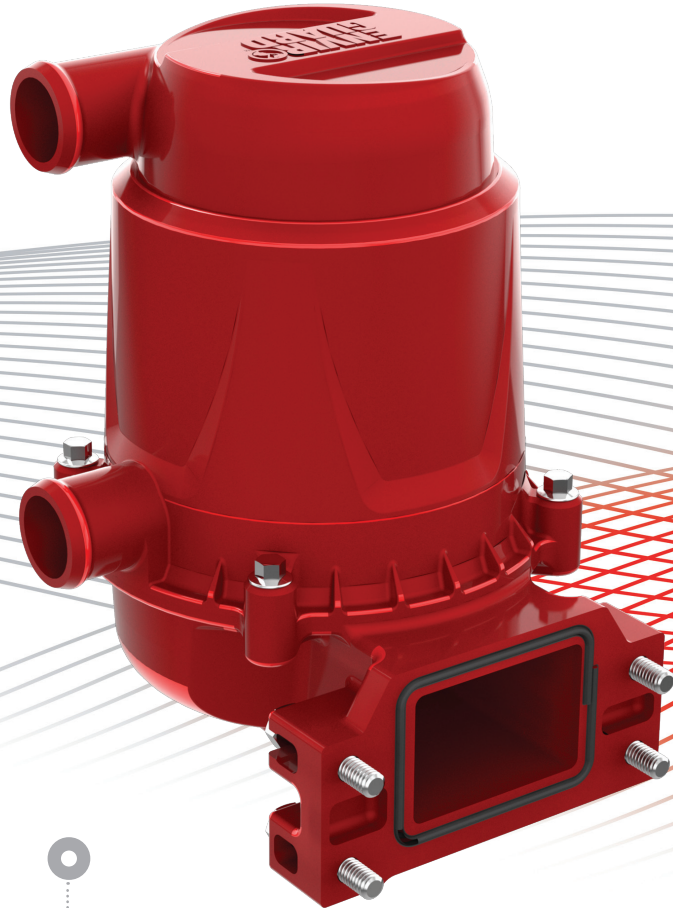
## Customer Benefits

- Various length options give the customer the opportunity to select the right aftertreatment system sized appropriately for their engine output needs
- Reduced downtime for maintenance
- More compact size and weight contributes to improved fuel economy and easier system integration



## Filtration

# Next Generation EnviroGuard™ – Rotating Crankcase Ventilation Solution



### Product Features

- More horsepower and better fuel economy through improved turbocharger protection
- Less energy required than competitive rotating products for better separation efficiency
- Less overall crankcase pressure than existing products
- Active oil drain system, essentially eliminating oil carryover to the turbocharger
- Lower total cost of ownership because new product can last between 4 - 8 times longer than conventional designs\*
- Requires minimal redesign for OEMs to make an easy transition to adopt this technology

### Customer Benefits

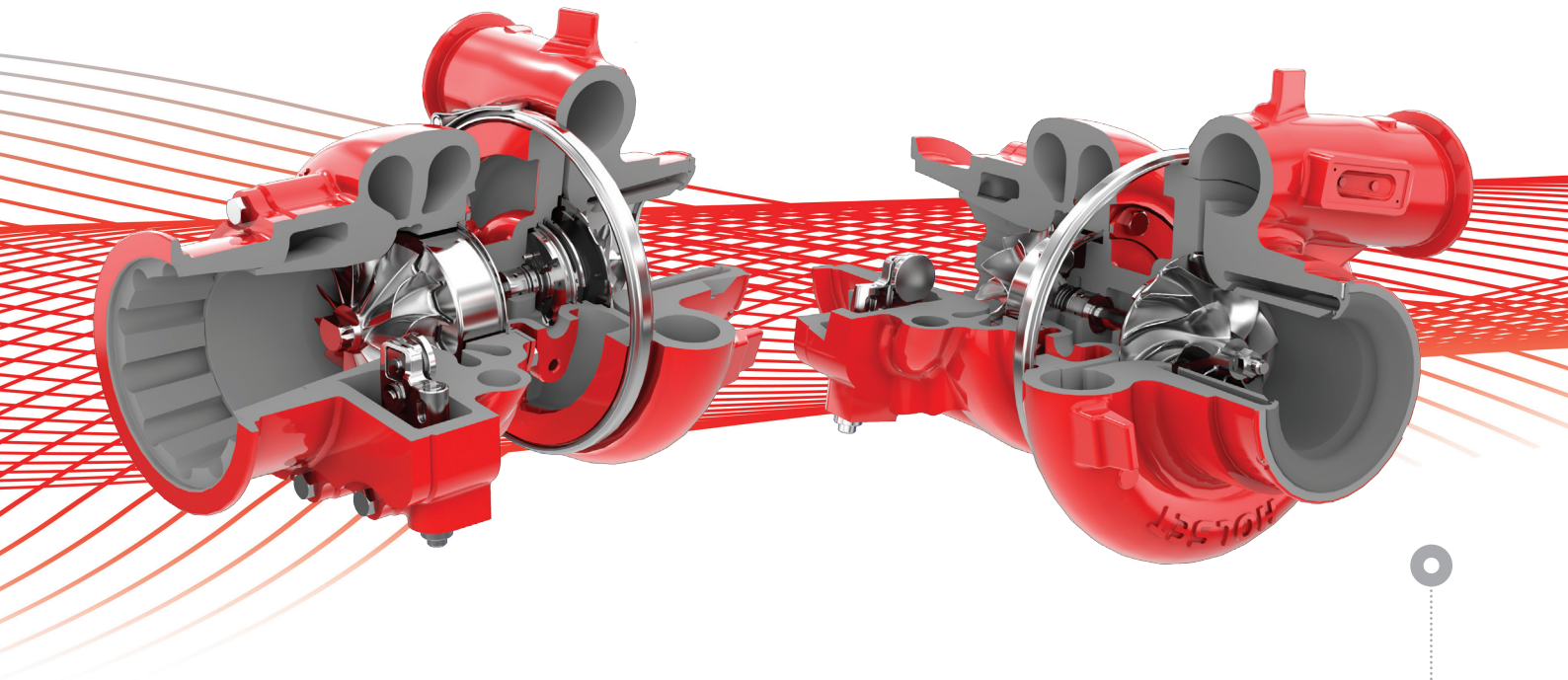
- Ultra-high efficiency crankcase ventilation (CV) product
- Helps customers meet strict emission regulations
- Protects the engine and extends CV filtration service life

\* Depending on application



# Turbocharging

## High Efficiency Turbocharger Components



### Product Features

Optimising the design of turbocharger components helps achieve overall turbocharger efficiency gains and ensures turbocharger durability while improving fuel economy:

- **Mixed Flow Turbine Wheel** enables turbine efficiency improvement of 2-3% and lower inertia resulting in improved transient response and fuel economy at key engine operating points
- **Compressor Oil Seal Technology** improves resistance to oil leakage by 200%; providing robust turbocharger design, even at low engine speeds to meet downspeeding requirements
- **Wastegate Blown Diffuser** improves turbine stage efficiency by up to 5% resulting in improved fuel economy and reduced CO<sub>2</sub>

### Customer Benefits

- Up to 8% improved turbocharger efficiency which delivers a 2.5% engine efficiency improvement





Cummins Ltd  
St Andrew's Road  
Huddersfield  
HD1 6RA

Tel: +44 (0) 1484 832000

**[www.cummins.com](http://www.cummins.com)**

Bulletin 5410604 Printed in UK 11-16  
©2016 Cummins Ltd.