

# emissions controls

## A History of Clean Air Solutions



In today's ever-evolving automotive industry, car manufacturers (OEMs) and Tier One suppliers depend on the most advanced technology, design and engineering to provide safe, profitable and reliable products that grow market share and build consumer confidence.

Government mandates dramatically influence the industry each year. One such focus is on improving air quality through a reduction of engine emissions.

With a first-class product line built on a foundation of nearly a century of automotive leadership, ArvinMeritor has the technical, design, manufacturing and logistics expertise to provide OEMs with cutting-edge technologies that help meet government regulations and surpass end-user expectations.

### Exceeding the changing needs of the OEM

ArvinMeritor's Emissions Technologies business is the leading global supplier of exhaust systems and emissions controls for light vehicles. It began more than 40 years ago, when Arvin Industries—an ArvinMeritor precursor—received the first-ever approval for new-car applications of the catalytic converter control "device." That was the beginning of a product lineage that has dramatically impacted the automotive industry worldwide.

This pioneering work has led to the fact that virtually every gasoline-powered car or truck in the United States, Canada, Europe, Japan, Australia and much of Asia has an exhaust system equipped with a catalytic converter.

ArvinMeritor's proven competencies in thermal management, exhaust system design, packaging

and durability are a common thread connecting all of ArvinMeritor's Clean Air Solutions. Aimed at light truck and passenger car applications in North America, Europe and Asia, ArvinMeritor's suite of light vehicle emissions technologies includes proven solutions already in production, as well as other innovative products under development to meet the increasingly stringent regulations of the future.

### Improving air quality

We're making a difference by reducing engine noise, eliminating harmful emissions into the atmosphere, and by developing filters for onboard regeneration of particulate matter. ArvinMeritor's complete line of emissions technologies meet or exceed OEM needs – from engine to tailpipe.

**ArvinMeritor™**



Maniferverter



Diesel Particulate Filter



Diesel Fuel Vaporizer



Catalytic Converter

### Catalytic Converters

ArvinMeritor is the clear front runner in the development and ongoing improvements of catalytic converter technology, a mainstay of emission reduction.

#### Key product features:

- ArvinMeritor catalytic converters are designed to come up to working temperature "fast light off" in a minimum time, dramatically reducing emissions in the all-important cold-start phase.
- Emission reduction performance meets or exceeds current governmental regulations.
- Unique can formations, especially irregular shapes, like tri-ovals, can be provided.

#### ArvinMeritor benefits over similar products:

ArvinMeritor catalytic converters combine the latest technology with the strongest emissions control heritage in the automotive industry. We offer customized solutions with an unprecedented development and manufacturing tradition that takes the need for durability, cost and weight limitations seriously.

### Diesel Particulate Filters

The ArvinMeritor diesel particulate filter (DPF) is the industry standard for filtering out particulate matter produced by diesel combustion.

ArvinMeritor manufactures these filters for six OEMs. Due to growing consumer interest in diesel-powered cars and trucks, one million orders have been confirmed for the year 2008.

#### Key product features:

- Filter size is reduced, due to better utilization of available volume.
- More uniform soot distribution reduces the number of regenerations by extending the soot loading limit.
- Improved durability of substrate avoids soot overloading areas, reducing the thermal stress during regeneration.

### Diesel Fuel Vaporizer

ArvinMeritor's first-of-its-kind diesel fuel vaporizer is a highly technical, but relatively simple operational device for controlling the regeneration of a diesel particulate filter. Vaporized diesel fuel is injected into the exhaust system upstream of an oxidation catalyst. This causes an exothermic reaction. The exhaust gas is thereby raised to the required temperature to oxidize the soot trapped within a vehicle's DPF.

#### Key product features:

- Operation is low cost and simple.
- Control of DPF regeneration is improved.
- Better control reduces regeneration temperature.
- Product provides improved alternative to engine internal post-injection (no oil dilution).

#### ArvinMeritor benefits over similar products:

The diesel fuel vaporizer offers an alternative means of regenerating the diesel particulate filter, without the penalties normally associated

with engine-induced regenerations (such as oil dilution, complicated engine tuning, fuel consumption). It also offers the possibility of reducing the size of the DPF, or using low-cost filter materials, because of the ability to conduct regenerations more frequently. These features result in improved fuel mileage and better driveability for the end user.

### Manifolds and Manifverters

ArvinMeritor's fabricated manifolds started an industry. We were the first company to offer hydroformed and fabricated diesel engine manifolds that can be all-encompassing of the exhaust and after-treatment system. The manifolds are individually designed to optimize engine performance and torque for each OEM model – from small engines to large luxury product lines.

#### Key product features:

- Low thermal inertia speeds the time required for light off of the catalyst.
- Optimal gas flow design provides best power and torque.
- Design is overall lightweight and durable.

ArvinMeritor customers receive the benefit of partnering with a globally integrated company whose core competencies include the design, manufacture and integration of emission systems. Together, we can create a new legacy of emissions solutions, while improving the global environment and your fiscal bottom line.

ArvinMeritor's Light Vehicle Systems (LVS) business group – a market leader in the product categories it serves – supplies integrated systems and modules to the world's leading passenger car and light truck OEMs. With advanced technology and systems design expertise in apertures, undercarriage, wheels and emissions control, LVS combines high-quality components into cost-effective, performance-based solutions for virtually every car and light truck on the road today.