

**THE GENERAL MOTORS SOLUTION  
TO MEETING THE 2007 DIESEL  
EMISSIONS STANDARDS**



## The 2007 Emissions Standards Challenge

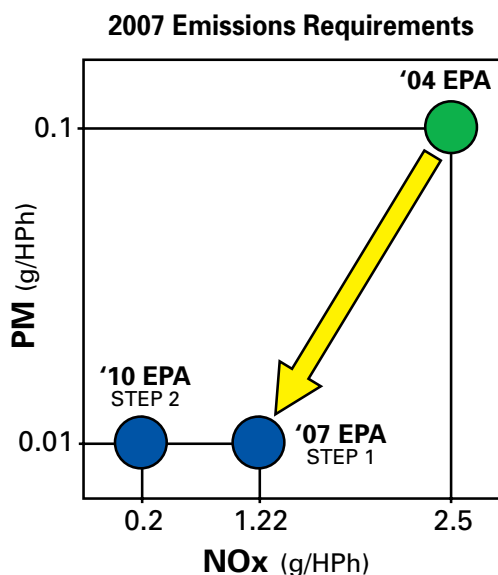
All diesel engines produced starting January 1, 2007 must comply with the new regulations that require the reduction of nitrogen oxide (NOx) and hydrocarbons (HC) by 50% and particulate matter (PM) by 90+% over the current 2004 emission standards. Further reductions of NOx, HC and PM will be required by 2010.

Emissions must be reduced in all types of operation, including stop-and-go situations. All diesel engine manufacturers will have to meet these stringent emissions standards, resulting in additional hardware, software and ultimately, higher costs.

## The GM Solution

Utilizing our worldwide resources and working with our diesel engine partners, Isuzu Motors Ltd. and Caterpillar, GM is proud to meet the upcoming 2007 Diesel Emissions Standards with technology solutions that fulfill our customers' needs as well as the EPA's new clean air requirements.

You can be confident that GM medium-duty trucks with 2007-compliant Duramax 6.6L and Isuzu 4H and 6H diesel engines will deliver optimum performance at the lowest possible cost of ownership. In fact, some of our 2007 emissions technology has already been proven in over 60,000 Isuzu trucks operating successfully in Japan for the last two years!

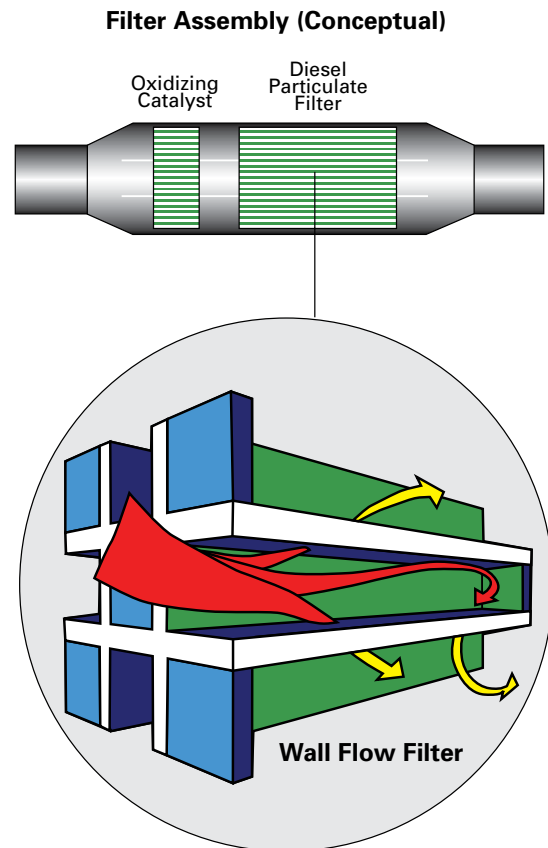


## Exhaust Gas Recirculation (EGR)

To provide and maintain the best engine performance and fuel economy while reducing the nitrogen oxide levels for the 2007 emissions requirements, our engines will use an advanced Exhaust Gas Recirculation (EGR) system and a variable geometry turbocharger. CAT C7 engines in C-Series trucks will use CAT's ACERT systems.

## Diesel Particulate Filter (DPF)

To reduce particulate matter, a Diesel Particulate Filter (DPF) captures soot and larger sulfate particles in a series of ceramic honeycomb channels. Exhaust gases are directed into a cordierite or silicon carbide molded substrate with closed ends. Gas passes through the porous material, and the particulates are trapped and accumulate on the channel walls. As is used currently, an Oxidizing Catalyst will control the hydrocarbons.



## DPF Regeneration

To prevent the DPF from clogging, the trapped particulates are burned off and the filter is cleaned using a high temperature (around 1000°F in the Particulate Filter) regeneration process that leaves a harmless ash as a residue. There are two types of regeneration: Self-regeneration, which is automatic when the exhaust gases are high enough and Forced regeneration, which is either automatic or manual. In most instances, the regeneration will be done automatically as the truck is driven throughout the day and requires no involvement by the driver. However, if vehicle operation does not produce exhaust gases that are hot enough for automatic regeneration, a control light will indicate the need for regeneration and the driver may initiate the process by activating a switch on the dashboard.

Regeneration requires managing and controlling much hotter exhaust gases than those experienced on current diesel-powered vehicles. By utilizing dual-wall air gap pipes, insulated catalysts and DPF filters, we are able to retain the heat within the exhaust system. Consequently, pipe and component exterior skin temperatures are comparable during regeneration with existing gas engine exhaust systems.

Even though the DPF filter is designed for long life, eventually the accumulated ash must be removed by special cleaning equipment at truck dealerships.

To precisely control engine combustion and DPF regeneration, we have developed system sensing and control software. Extensive calibration changes have also been made.

### Closed Crankcase System

The 2007 regulations require that all diesel engine emissions be reduced, including crankcase gas. As a result, we'll be adding a closed crankcase system that reroutes ventilation gases back into the engine for combustion. Some systems will have serviceable filters to collect residual crankcase oil.

### Special Fuels And Lubricants

The EPA has also lowered the limit for diesel fuel sulfur from 500 ppm (parts per million) to 15 ppm for diesel engines that meet the 2007 emissions standard. This new ultra-low-sulfur fuel will be available beginning October 2006 and will add 5¢ to 10¢ per gallon to fuel costs. New low-ash oil will have to be utilized in order to extend the maintenance life of the DPF filter. We have designed our emissions systems to work efficiently with these new fuels and lubricants.

### GM Is Ready To Meet Your Needs

Working together, GM and its engine suppliers have thoroughly tested our emissions technology in the lab and in the field under a wide variety of driving conditions and applications. Trucks utilizing our proven 2007 emissions technology are operating now.

Our commitment to providing industry-leading technology is your assurance we will continue to deliver products that meet your trucking needs today — and well into the future.

### What You Can Do Now

GM offers alternatives that are available today for those businesses wanting to avoid the extra costs and driver training that will be required when buying or leasing trucks manufactured in 2007. Our current model line-up includes:

- W-Series trucks with 4H diesel and Vortec 6.0L gas engines
- T-Series trucks with 6H diesel engines
- C-Series trucks with Duramax 6.6L, Isuzu 6H, CAT C7 diesel and Vortec 8.1L gas engines

### Gas Engines: A Viable Alternative

Our gas engine alternative is part of a complete line-up that is unmatched in the industry. Gas engines provide a realistic solution to lower mileage users who appreciate the availability of fuel at every gas station. GM gas engines are also compatible with alternative fuels using after-market installations.

No matter which solution you choose, you can be confident that your GMC or Chevy truck will offer the highest level of performance now and in the years to come.



W-Series



Isuzu 4H Diesel



Vortec 6.0L Gas



Isuzu 6H Diesel



T-Series



C-Series



Vortec 8.1L Gas



Duramax 6.6L Diesel



Isuzu 6H Diesel



CAT C7 Diesel



We have made this brochure as comprehensive and factual as possible. We reserve the right to make changes in price, color, materials, equipment, specification, models, and availability at any time and without notice. Because some information may have been updated since the time of printing, please check with your dealer or Owner's Manual for latest details.