

## NO QUESTION ABOUT IT.

The 2007 EPA diesel-emissions mandate was one of the most challenging engineering tasks Detroit Diesel has confronted, demanding more time, effort and resources than any other single program in the past several decades. The MBE 4000 engine not only is far cleaner than its predecessors, it's stronger, too.



## UNALTERED MAINTENANCE SCHEDULES. UNMATCHED SERVICE AND WARRANTY.

### Maintenance Intervals (Miles)

Maintenance Item	Severe-Duty	Short-Haul	Long-Haul
Engine Oil and Filter Change*	10,000	15,000	30,000
Fuel Filter Change	20,000	30,000	50,000
Valve Lash Adjustment	20,000 first-then 40,000	30,000 first-then 60,000	60,000 first-then 120,000

\* Based on using Detroit Diesel approved lube oil.  
Severe-Duty: Less than 6,000 annual miles. Short-Haul: 6,000 to 60,000 annual miles. Long-Haul: Over 60,000 annual miles.

### Parts, Service and Warranty

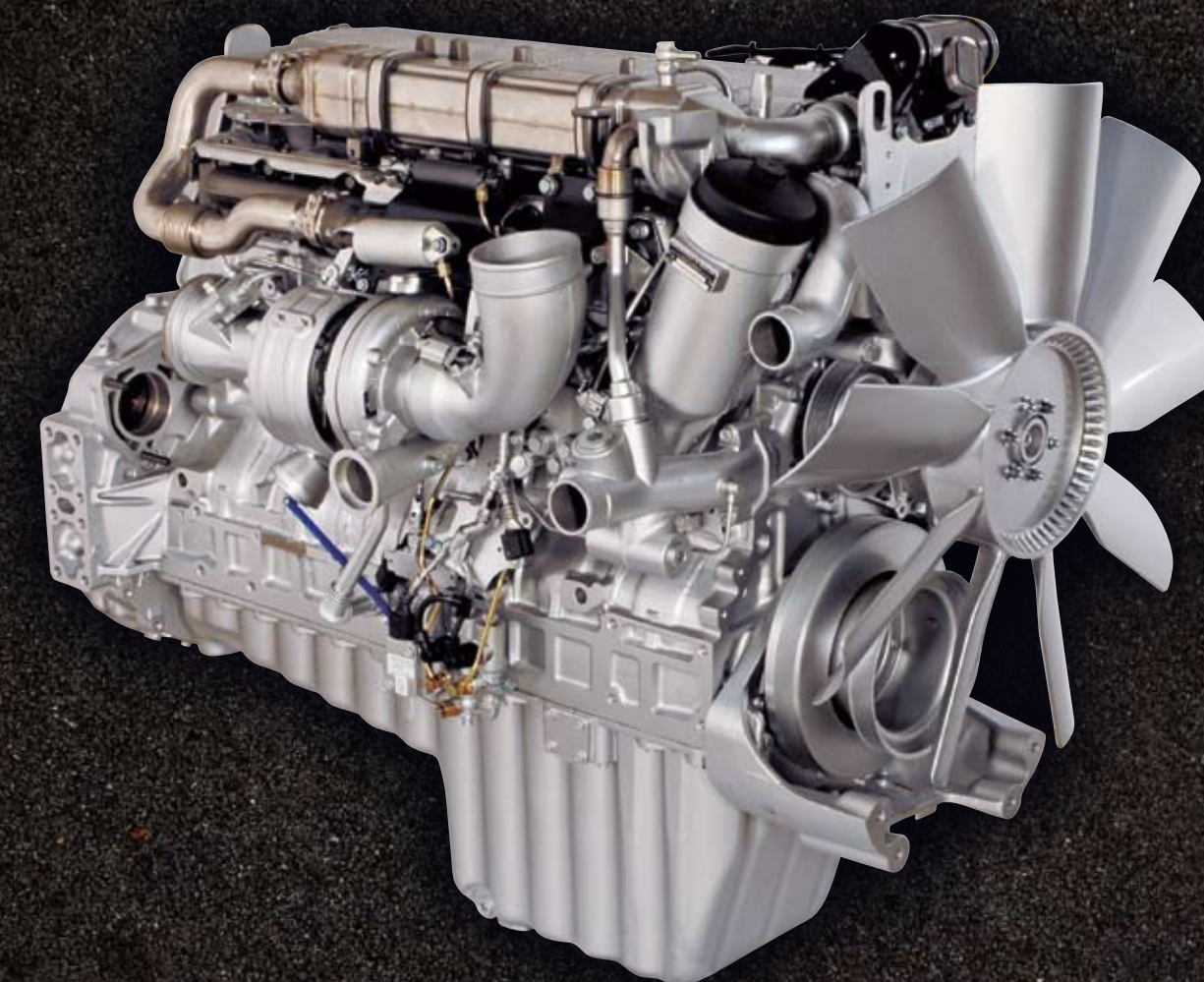
The MBE 4000 engine is backed by a two-year, unlimited mileage warranty that covers 100 percent of the cost of parts and labor. Major components are covered for five years or 500,000 miles with 100 percent parts coverage. Extended service coverage options also are available through authorized Detroit Diesel service centers.

Parts and service are available at more than 800 Detroit Diesel authorized service locations throughout North America. Factory certified technicians know your MBE 4000 inside and out and are ready to help. For roadside assistance, technical support or locating the nearest service center, contact the Detroit Diesel hotline at 1-800-445-1980.

### Warranty Period

Item	Warranty Limitations (Whichever Occurs First)		Repair Charge to be Paid by Owner	
	Months	Miles / Kilometers	Parts	Labor
Engine	0 - 24	Unlimited	No Charge	No Charge
Accessories	0 - 24	0 - 100,000 mi. 0 - 160,000 km	No Charge	No Charge
Upon expiration of the 24-month warranty coverage, but within 500,000 mi / 800,000 km of use, the warranty continues to apply as follows:				
Major Components*	25 - 60	0 - 500,000 mi. 0 - 800,000 km	No Charge	100% of Service Outlet's Normal Charge

\* Cylinder block/head, crankshaft, camshaft, main bearing bolts, flywheel housing, connecting rod assemblies, oil cooler housing, water pump housing and air inlet housing.



For more information, call 1-800-445-1980. [www.DetroitDiesel.com](http://www.DetroitDiesel.com)

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# DETROIT DIESEL: DRIVING TECHNOLOGY.

The MBE 4000 is stronger and lighter than any engine in its class. Backed by more than 150 years of Detroit Diesel and Mercedes-Benz collective experience designing, testing and manufacturing diesel engines, it's no wonder. Through the years, customers have turned to our engines for reliability, fuel economy, weight advantage and ease of service. That's never changed. But when the Environmental Protection Agency's '07 requirements grew more stringent to protect the environment, Detroit Diesel combined our long heritage and industry-leading innovation with the resources of our parent company, Daimler – the world's largest commercial vehicle manufacturer. Together, we did more than just meet emissions standards. We took our engines to the next level.

With an investment of hundreds of millions of dollars and the work of the world's top engineers, Detroit Diesel produced a new line of engines that are the most advanced and environmentally-friendly generation of Detroit Diesel engines ever built. We lowered oil consumption. Increased response times. Reduced emissions. And achieved SMART Fuel Systems.

After countless laboratory tests and more than 24 million miles in testing across our three engine lines, one thing is clear. Detroit Diesel isn't just meeting standards. We're driving technology.



### The MBE 4000

With the best power-to-weight ratio in its class, the MBE 4000 has become the preferred engine for vocational, regional distribution and bulk-hauling operations throughout North America. Weighing just 2,270 lb., this six-cylinder powerhouse is available in ratings from 350 to 450 horsepower and 1,250 to 1,650 lb-ft of torque. The MBE 4000 builds on this tradition of performance and flexibility, offering even greater power and durability than before. This is the engine for anyone seeking excellent fuel economy and low cost of operation, all in a lightweight package.

### Tightening Emissions Standards

The EPA has been reducing diesel emissions for the past 30 years. The latest regulations, which took effect in 2007, demanded changes in both fuel and engine technology. The new regulations dramatically reduced oxides of nitrogen (NOx) by 55 percent and particulate matter (soot and ash) by 90 percent. We achieved this target by optimizing the existing Exhaust Gas Recirculation system and the second by adding an Aftertreatment System, comprised of a Diesel Oxidation Catalyst and a Diesel Particulate Filter.

## REFINED ENGINE COMPONENTS

### Exhaust Gas Recirculation (EGR)

Exhaust Gas Recirculation systems have been optimized to dramatically cut NOx formation by routing a measured amount of exhaust flow to the cylinders to lower combustion temperatures. Lower temperatures result in lower NOx levels without the negative effects of retarding engine timing.

### SMART Fuel System

The new SMART Fuel System adds to the performance and cleanliness of the MBE 4000. It features electronically controlled injection nozzles capable of multiple injections per combustion cycle.

### Maintenance-Free Electrostatic Breather

The electrostatic breather system removes oil from crankcase vapor before it's vented into the atmosphere. The system sends oil droplets back to the sump where they continue to serve the engine, reducing oil consumption. And, it requires no maintenance.

### Detroit Diesel Electronic Control (DDEC®) VI

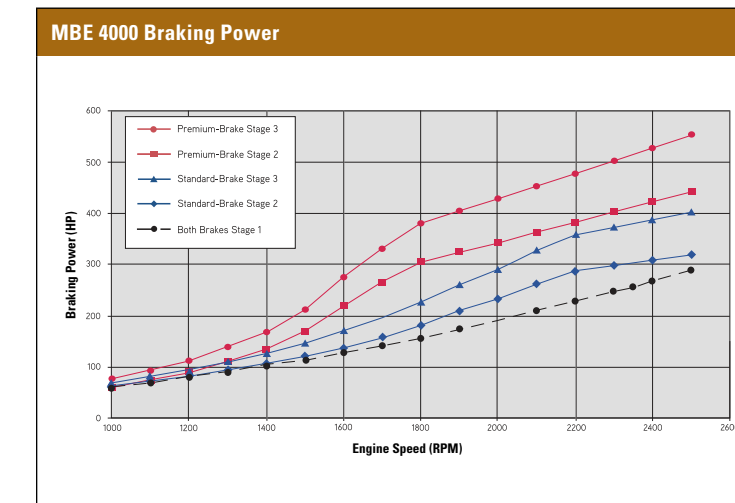
Detroit Diesel set the benchmark for heavy-duty diesel engine electronics. Now, we're raising the bar with the sixth generation DDEC VI electronic engine management system. It employs a more powerful microprocessor, increased memory and enhanced diagnostics. The DDEC VI is capable of monitoring and managing all engine functions, including the Aftertreatment Systems required for emissions. DDEC VI is a key part of the strategy to achieve greater operating efficiency and cleaner exhaust emissions.

MBE 4000 Engine Power Ratings	
350 HP @ 1900 RPM	1350 lb-ft @ 1100 RPM
370 HP @ 1900 RPM	1250 lb-ft @ 1100 RPM
370 HP @ 1900 RPM	1450 lb-ft @ 1100 RPM
410 HP @ 1900 RPM	1450 lb-ft @ 1100 RPM
435 HP @ 1900 RPM	1550 lb-ft @ 1100 RPM
450 HP @ 1900 RPM	1550 lb-ft @ 1100 RPM
450 HP @ 1900 RPM	1650 lb-ft @ 1200 RPM

### Engine Brakes

The best engine brake technology just got better. The MBE 4000 comes with a standard exhaust brake – at no extra cost or weight – that provides 370 braking HP. For buyers who need more, we offer an optional Premium Engine Brake that boosts braking power to a whopping 510 HP at 2,300 RPM. The MBE 4000 offers increased flexibility in making the proper engine brake selection. Trucks can be ordered with the standard engine brake and upgraded to the Premium Engine Brake at authorized Detroit Diesel service centers.\* Both the Standard and Premium Engine brakes are known for their quiet operation, increasing service brake life, improving driver safety and increasing resale value.

*\* Uprate charges apply.*



## REFINED EXHAUST SYSTEM

### Exhaust Aftertreatment System

The biggest change to our engines is the addition of an exhaust Aftertreatment System, which replaces the muffler assembly in the exhaust system. The unit's defining components are a Diesel Oxidation Catalyst and a Diesel Particulate Filter that oxidizes – or burns – soot. During normal highway operation, exhaust temperatures alone are usually high enough to burn off accumulating soot, a process known as "passive regeneration." In low ambient temperatures, however, or in some stop-and-go applications, the system needs a little help to regenerate or clean itself. This process is called "active regeneration."

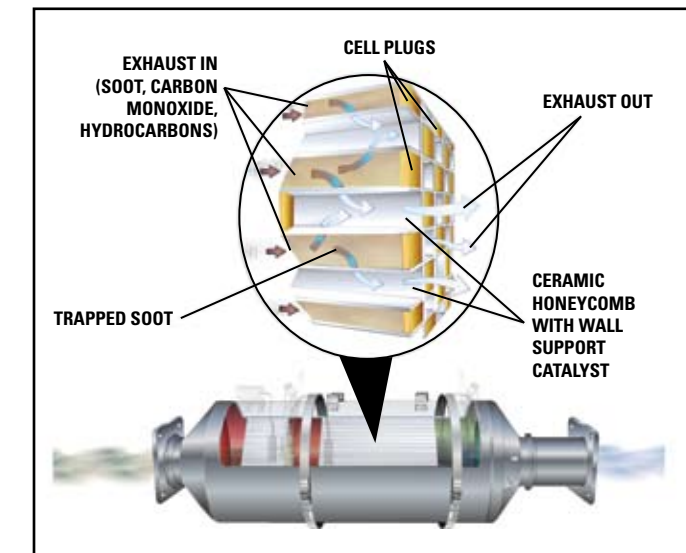
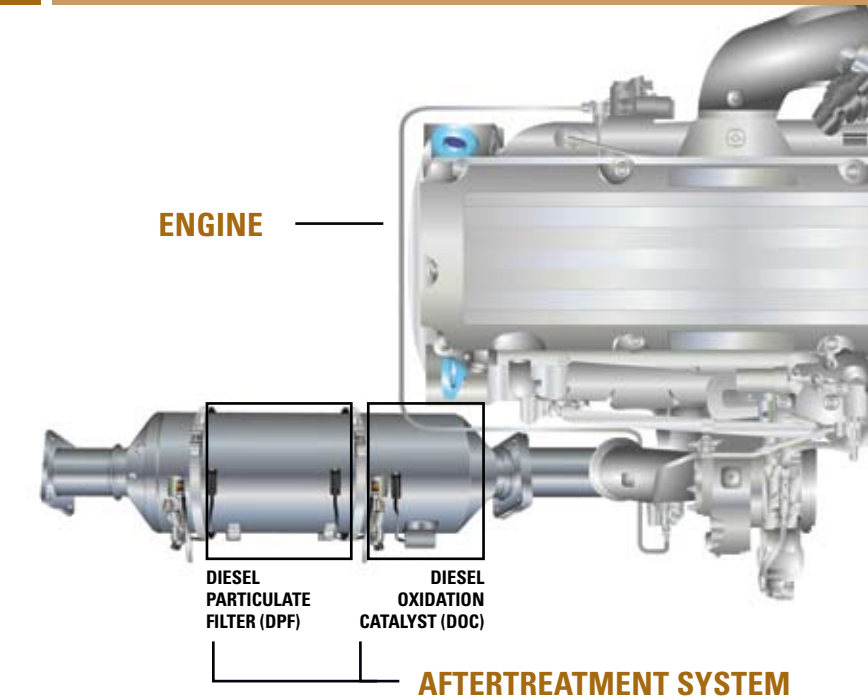
### Doser

The Aftertreatment System uses a "doser" to initiate active regeneration. When the amount of soot inside reaches a certain level, the doser injects a measured amount of diesel fuel into the exhaust flow, which reacts with the catalyst to raise the temperature to a point that enables regeneration.

There are two types of active regeneration: in-transit and stationary. In-transit regeneration occurs when the truck is in motion. When the truck's driving cycle is insufficient for in-transit active regeneration, stationary active regeneration is required. This is performed when the truck is parked and monitored by the driver or a service technician.

### Intake Throttle

The intake throttle also assists in the regeneration process. When necessary, this device limits the amount of air entering the engine, raising the exhaust temperature and facilitating regeneration.



## REFINED FUELS AND LUBRICANTS

### ULTRA LOW SULFUR DIESEL (ULSD) Fuel and CJ-4 Oil

The MBE 4000 is designed to run on ULSD fuel, which can contain no more than 15 PPM sulfur. The current maximum sulfur content for on-highway diesel fuel is 500 PPM. ULSD fuel is necessary to avoid fouling the engine's Aftertreatment System.

CJ-4, a low ash oil formulation, is recommended in EPA '07 engines. CJ-4 oil contains less than 1.0 wt. % sulfated ash. Use of high ash engine oils reduce the cleaning interval on the Diesel Particulate Filter (DPF) system.