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.

### Maintenance Intervals (Miles)

<table>
<thead>
<tr>
<th>Maintenance Item</th>
<th>Severe-Duty</th>
<th>Short-Haul</th>
<th>Long-Haul</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Oil and Filter Change</td>
<td>10,000</td>
<td>15,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Fuel Filter Change</td>
<td>20,000</td>
<td>30,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Valve Lash Adjustment</td>
<td>20,000</td>
<td>first-then</td>
<td>40,000</td>
</tr>
<tr>
<td></td>
<td>20,000</td>
<td>first-then</td>
<td>60,000</td>
</tr>
<tr>
<td></td>
<td>60,000</td>
<td>first-then</td>
<td>120,000</td>
</tr>
</tbody>
</table>

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 100,000 miles, with $100,000 per year per person per operating. Extended service coverage options also are available through authorized Detroit Diesel service centers.

Parts and service are available at more than 160 Detroit Diesel authorized service locations throughout North America. Factory trained 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**

<table>
<thead>
<tr>
<th>Warranty Period</th>
<th>Suffix</th>
<th>Months</th>
<th>Miles</th>
<th>Parts</th>
<th>Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>0-24</td>
<td>Unlimited</td>
<td>No Charge</td>
<td>No Charge</td>
<td></td>
</tr>
<tr>
<td>Accessory</td>
<td>0-24</td>
<td>0-100,000</td>
<td>No Charge</td>
<td>No Charge</td>
<td></td>
</tr>
<tr>
<td>Cylinder block/head, crankshaft, camshaft, main bearing bolts, flywheel housing, connecting rod assemblies, oil cooler housing, water pump housing and air inlet housing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Warranty limitations

<table>
<thead>
<tr>
<th>Warranty Item</th>
<th>Months</th>
<th>Miles / Kilometers</th>
<th>Parts Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine</td>
<td>25</td>
<td>500,000 / 800,000</td>
<td>100% Service Outlet’s Normal Charge</td>
</tr>
<tr>
<td>Accessory</td>
<td>25</td>
<td>0-100,000</td>
<td>No Charge</td>
</tr>
<tr>
<td>Cylinder Block/Head, Crankshaft, Camshaft, Main Bearing Bolts, Flywheel Housing, Connecting Rod Assemblies, Oil Cooler Housing, Water Pump Housing and Air Inlet Housing.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Based on using Detroit Diesel approved lube oil.

**Maintenance Intervals**

- **Severe-Duty**: Less than 6,000 annual miles.
- **Short-Haul**: 6,000 to 60,000 annual miles.
- **Long-Haul**: Over 60,000 annual miles.

*Based on using Detroit Diesel approved lube oil.
Detroit Diesel: Driving Technology.

The MBE 4000 is stronger and lighter than any engine in its class. Based on more than 100 years of Detroit Diesel and Mercedes-Benz collective experience designing, testing, and manufacturing diesel engines, it’s in a class of its own. Through the years, customers have turned to us for engines for reliability, fast economy, weight advantage and ease of service. That’s never changed. But when the Environmental Protection Agency’s (EPA) 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 met our engines at the next level.

With an investment of hundreds of millions of dollars and the expertise of the world’s top engineers, Detroit Diesel produced the world’s largest commercial vehicle manufacturer. Together, we met our engines at the next level.

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 2,720 lb., the six-cylinder powertrain is available in ratings from 350 to 450 horsepower and 1,250 to 1,900 lb-ft of torque. The MBE 4000 blended in the tradition of performance and flexibility, offering even more power and durability than before. This is the engine for anyone seeking performance and flexibility, offering even greater power and cleaner emissions. It features electronically controlled injection capable of multiple injection per combustion cycle.

 Tightening Emission Standards

The EPA has more stringent emission standards for the past 16 years. The latest regulations, which took effect in 2007, significantly changed how Detroit Diesel used technology. The new regulations dramatically reduced emissions of nitrogen oxides (NOx) by 95 percent and particulate matter (soot) and ash by 80 percent. We achieved this target by optimizing the existing Exhaust Gas Recirculation systems and the second by adding an Aftertreatment System, comprised of a Diesel Oxidation Catalyst and a Diesel Particulate Filter.

Engine Brakes

For emissions. DDEC VI is a key part of the strategy to achieve engine functions, including the Aftertreatment Systems required for emissions. 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 lower exhaust emissions.

Refined Exhaust Components

Exhaust Gas Recirculation (EGR)

Exhaust Gas Recirculation systems have been optimized to dramatically cut NOx formation by routing a measured amount of exhaust gas back to the cylinders to lower combustion temperatures. Lower temperatures result in lower NOx levels without the risk of reducing engine output.

SMART Fuel System

The front and rear Turbochargers allow the performance and cleanliness of the MBE 4000. It features electronically controlled injection capable of multiple injection 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 engine’s oil pan, where they continue to serve the engine, reducing oil consumption. And, it requires no maintenance.

Detroit Diesel Electronic Control (DDC) VI

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

Ultra Low Sulfur Diesel

The MBE 4000 is designed to run on ULSD fuel with a sulfur content of 15 PPM. 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.

Aftertreatment System

Exhaust Aftertreatment System

The biggest change to air engines in the addition of an exhaust Aftertreatment System (AFTS) to reduce the smoke filters in the exhaust system. The unit’s working components on a Detroit Diesel Engine include the muffler assembly, which reduces emissions; the EGR system, which reduces emissions; the DPF system, which reduces emissions; and the catalytic converter, which reduces emissions. The catalytic converter reduces NOx emissions by 95% and HC emissions by 90%.

The system is designed to work in conjunction with the DDEC VI electronic control system. If NOx levels exceed the maximum, the system will alter injection timing to reduce NOx levels. The system is designed to work in conjunction with the DDEC VI electronic control system.

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. It is performed when the truck is parked and monitored by the driver or service technicians.

Insulation Thermo
tube

The thermotube also acts as 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

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Engine

The best engine brake technology just got better. The MBE 4000 comes with a standard exhaust brake—an extra feature to help reduce engine temperatures. 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 lower exhaust emissions.

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