

# DETROIT DIESEL



## MBE 4000 Service Information

NUMBER: 3-MBE 4000-07 S.M. REF.: 16 ENGINE: MBE 4000 DATE: April 2007

**SUBJECT: CHANGES TO GENERAL MECHANICAL TROUBLESHOOTING**

**PUBLICATION: EPA-04 MBE 4000 SERVICE MANUAL (6SE412)**

Changes were made to some tables in chapter 15, "General Mechanical Troubleshooting" and are indicated by a black bar at the edge of the page.

The changes are found in the following tables.

<b>Problem - The Engine Will Not Crank</b>	
<b>Cause</b>	<b>Remedy</b>
The batteries are damaged or weak.	Test the batteries. Replace them, if needed.
The ignition switch is damaged.	Replace the ignition switch.
The battery cables are damaged and/or corroded.	Clean or replace the battery cables.
The starter is damaged and/or worn.	Have an authorized dealer replace the starter.
The clutch or transmission is damaged.	Bring the vehicle to an authorized dealer for service.
There is internal damage to the engine.	Bring the vehicle to an authorized dealer for service.

<b>Problem—The Engine Turns Over Slowly</b>	
<b>Cause</b>	<b>Remedy</b>
The batteries are damaged or weak.	Test the batteries. Replace them, if needed.
The ignition switch is damaged.	Replace the ignition switch.
The battery cables are damaged and/or corroded	Clean or replace the battery cables.
The starter is damaged and/or worn.	Have an authorized dealer replace the starter.
The engine oil does not meet the correct specifications.	Change the engine oil, using the correct type of oil.
The transmission fluid does not meet the correct specifications.	Change the transmission fluid, using the correct type of fluid.

<b>Problem—The Engine Cranks, But Won't Start</b>	
<b>Cause</b>	<b>Remedy</b>
The batteries are damaged or weak.	Test the batteries. Replace them, if needed.
The cranking speed is not set correctly.	Bring the vehicle to an authorized dealer for service.
No intake air preheater is installed, and it is too cold to start without one.	Install an intake air preheater.
The intake air preheater is malfunctioning.	Check the intake air preheater, and replace it, if necessary.
The camshaft TDC sensor and/or the crank angle position sensor are out of adjustment.	Push both sensors into their holes as far as they will go. If this does not solve the problem, bring the vehicle to an authorized dealer for service.
The camshaft TDC sensor and/or the crank angle position sensor are damaged.	Bring the vehicle to an authorized dealer for service.
There is air in the fuel system.	Check the fuel lines for air pockets. Prime the fuel system and start the engine.
The air filter is clogged.	Clean or replace the air filter.
The fuel filter is clogged.	Replace the filter element.
The exhaust brake valve is malfunctioning.	Have an authorized dealer check the operation of the valve.
The valves are not adjusted properly.	Check the valve lash.
There are other problems in the fuel system.	Bring the vehicle to an authorized dealer for service.

<b>Problem—The Engine Starts Only After Cranking for a Long Time</b>	
<b>Cause</b>	<b>Remedy</b>
The fuel tank is low or empty.	Add fuel and prime the fuel system, if necessary.
There are leaks in the fuel lines.	Check the fuel lines for leaks and repair them, if necessary.
The fuel filter is clogged.	Replace the filter element.
The fuel line, the fuel pre-filter, or the screen in the fuel tank is blocked.	Clean and prime the system. Have the fuel lines and filters checked by an authorized dealer.
The camshaft TDC sensor and/or the crank angle position sensor are out of adjustment.	Push both sensors into their holes as far as they will go. If this does not solve the problem, bring the vehicle to an authorized dealer for service.
The camshaft TDC sensor and/or the crank angle position sensor are damaged.	Bring the vehicle to an authorized dealer for service.
There are other problems in the fuel system.	Bring the vehicle to an authorized dealer for service.

<b>Problem—The Engine Starts, But Dies</b>	
<b>Cause</b>	<b>Remedy</b>
The fuel tank is low or empty.	Add fuel and prime the fuel system, if necessary.
The fuel filter is clogged.	Replace the filter element.
The fuel line, the fuel pre-filter, or the screen in the fuel tank is blocked.	Clean and prime the system. Have the fuel lines and filters checked by an authorized dealer.
The camshaft TDC sensor and/or the crank angle position sensor are out of adjustment.	Push both sensors into their holes as far as they will go. If this does not solve the problem, bring the vehicle to an authorized dealer for service.
The camshaft TDC sensor and/or the crank angle position sensor are damaged.	Bring the vehicle to an authorized dealer for service.
The constant-throttle valves are malfunctioning.	Bring the vehicle to an authorized dealer for service.
There are other problems in the fuel system.	Bring the vehicle to an authorized dealer for service.

<b>Problem—The Coolant Temperature Is Above Normal</b>	
<b>Cause</b>	<b>Remedy</b>
The coolant level is too low.	Check for coolant leaks, and repair as needed.
The poly-V belt is loose.	Tighten or replace the poly-V belt.
The coolant temperature gauge and/or sensor is not reading correctly.	Bring the vehicle to an authorized dealer for service.
The radiator is damaged or dirty.	Clean the radiator. Repair or replace the radiator if necessary.
The coolant pump is damaged.	Have an authorized dealer replace the coolant pump.
The thermostat is damaged.	Have an authorized dealer replace the thermostat.
The fan is not operating properly.	Bring the vehicle to an authorized dealer and have the fan hub checked. Bring the vehicle to an authorized dealer and have the parameter settings reprogrammed in the engine control unit (PLD) or vehicle control unit (VCU).

<b>Problem—The Engine Oil Pressure Is Low</b>	
<b>Cause</b>	<b>Remedy</b>
The oil pressure gauge and/or sensor is not reading correctly.	Bring the vehicle to an authorized dealer for service.
There is fuel in the oil.	Bring the vehicle to an authorized dealer for service.
The oil filter is clogged.	Replace the filter element.
The oil filter bypass valve is damaged.	Replace the bypass valve.
The oil pump and/or relief valve is damaged.	Have an authorized dealer replace the oil pump and/or relief valve.

<b>Problem—The Engine Exhaust Is Black</b>	
<b>Cause</b>	<b>Remedy</b>
The air filter and/or intake air system is clogged.	Check the air restriction indicator. Clean the intake air system and replace the air filter if necessary.
The exhaust brake valve is malfunctioning.	Have an authorized dealer check the operation of the exhaust brake valve.
The intake air preheater is malfunctioning.	Check that the heater is not staying on all of the time.
The valves are not adjusted properly.	Check the valve lash.
There is damage to the fuel system: the fuel pump, one or more fuel injectors, or one or more unit pumps are damaged.	Bring the vehicle to an authorized dealer for service.
The charge-air temperature sensor is damaged.	Bring the vehicle to an authorized dealer for service.
There is internal damage to the engine.	Bring the vehicle to an authorized dealer for service.

<b>Problem—Engine Brake Performance Is Poor</b>	
<b>Cause</b>	<b>Remedy</b>
The engine brake control switch is damaged.	Replace the switch.
The exhaust brake valve is not operating properly.	Have an authorized dealer check the operation of the exhaust brake valve.
The constant-throttle valves are malfunctioning.	Bring the vehicle to an authorized dealer for service.
Components of the PLD and/or VCU control unit are damaged.	Bring the vehicle to an authorized dealer for service.

## ADDITIONAL SERVICE INFORMATION

Additional service information is available in the Detroit Diesel *MBE 4000 Service Manual*, 6SE412. This information available in Power Service Literature. The next revision to this manual will include the revised information.

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