

# Mercedes-Benz Power MBE900

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Mercedes-Benz Power For Thomas Built Buses

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MBE900

Thomas Built Buses with Mercedes-Benz power.  
**Success** is your next stop.

Introducing the MBE900 diesel engine ...  
sold, serviced and supported by the most  
extensive engine networks in North America.





## The report card.

The power to carry more students on longer routes. **A+**

The maneuverability to navigate in short spaces. **A+**

The reliability and durability to work hard—  
morning, noon and night—without a day off. **A+**

Frequent starts and stops. **A+**

It's easy to see why MBE900 engines score so high among school bus drivers and children who rely on school bus transportation every day.

From the driver's point of view, the MBE900 means an easier, less-stressful day on the job. For the passenger, the MBE900 means a safer, smoother ride to and from school.

**MAYBE IT'S TIME YOU TOOK A RIDE.** Starting with the first horse-drawn urban stagecoach in 1827, to the most technically advanced vehicles on the road today, the bus and coach market has moved busy people in style. Comfortable and convenient, the bus provides a means of transporting large groups of passengers in a single trip, an escape from everyday driving stress, rush-hour traffic and road construction, and a safe, dependable ride many people set their watches by.

**SUCCESS IS OUR DESTINATION AND THOMAS BUILT BUSES ARE DRIVING.** Whether it's the commercial transit, school bus or specialty vehicle market, Thomas Built has the bus to get you there, safely and efficiently. And to shorten the trip, Thomas Built offers a new power package, the MBE900 series diesel engine.

**THIS IS ONE BUS YOU DON'T WANT TO MISS.** The MBE900 family of sophisticated, electronically controlled, 4- and 6-cylinder engines are available in a wide range of horsepower and torque ratings, up to 280 hp with 800 lb-ft of torque. Carefully engineered to meet your demands, the

MBE900 engine offers a number of high-performance features to get you and your passengers where you want to be.

High-torque rise at low rpm delivers quick starts all day long. Operating and maintenance costs are minimized with intelligent, state-of-the-art, computer-controlled performance and diagnostics. And MBE900 engines meet tough environmental standards, such as Low Emission Vehicle (LEV) requirements, without aftertreatment devices. Most importantly, as a member of the growing DaimlerChrysler AG family—the global leader in diesel engine development—the MBE900 is sold, serviced and supported by one of the most extensive engine networks in the world. You'll find support at 176 Detroit Diesel distributor and branch locations plus authorized Thomas Built dealers.

**RELIABLE. EFFICIENT. ALL THIS AND MORE, THE MBE900 IS NO ORDINARY DIESEL ENGINE.** Schools and municipalities everywhere depend on reliable transportation. Activities associated with a school system are varied and complex. The MBE900 delivers your most valued passengers reliably and safely—day in and day out.



## The on-time performer.

From the stop-and-go routine to and from school, to longer journeys with marching bands, athletes and clubs, the MBE900 delivers. On time. Every time. You and the students can count on high performance Mercedes-Benz power. Day-after-day, the show, games and other social activities go on.





**YOU'RE NOT THE ONLY ONE RELYING ON YOUR BUS TO START IN THE MORNING** Millions of people take the bus to school, work and play each day. Every design decision that went into creating the MBE900 engines revolved around daily performance.

- Chrome ceramic-coated piston rings.
- Induction-hardened cylinder bores.
- Advanced-design engine brake.
- Induction-hardened cam and crankshaft.
- Seven-bearing block.
- Integrated, virtually leakproof, engine gasket design.
- All built with Mercedes-Benz quality on an ultra-modern production line in Germany.

The MBE900 is a technical masterpiece. Individually controlled unit injection pumps. Electronic engine management. High-pressure injection. Optimum breathing and more reliable 3-valve-per-cylinder design. Lightweight engine block. Powerful output. Advanced materials design. The end result is a diesel power plant that's easy to drive and simple to maintain and that's virtually trouble-free and durable.

**REDUCED OPERATING COSTS** The MBE900 engines were designed to reduce operating costs on even the most challenging roads. The electronically controlled fuel injection system squeezes the most mileage possible out of each drop of fuel. The special

throttle valve/exhaust design maximizes engine braking power, reducing wear on wheel brake components. And since long life is what you're after, you can look forward to many years of efficient operation before overhaul.\*

**REDUCED MAINTENANCE COST** Built to last, the MBE900 service needs are truly minimal. Oil changes were engineered to stretch between 15,000 and 20,000 miles\*\*, reducing operating and maintenance expenses and minimizing downtime. The accessory drive system utilizes an automatic belt tensioner. Oil and fuel filters are easily accessible for quicker service. Unique, individually replaceable, plug-in fuel injection pumps and injectors simplify service. And the on-board data logging unit flags maintenance trouble spots and can provide fleets with dollar-saving management information on the spot.

**ON-THE-ROAD DRIVABILITY** The MBE900 engines deliver up to 280 hp for normal on-road operations. With higher torque levels at lower rpms, they deliver much better drivability—more capacity to climb hills and to safely and effectively maneuver through traffic.

\*Based on normal usage and maintenance.

\*\*Based on in-city vs. highway driving.

# Full-time reliability with advanced technology.



**LOW ENVIRONMENTAL IMPACT** With increased government pressure on the bus and coach market, you need more cost-effective and powerful solutions than ever before. That's why the MBE900 engine has been designed for the

lowest possible environmental impact. The MBE900 series engines meet both EPA and CARB requirements, and there are six engine ratings that are LEV-certified.

# Inside MBE900 engines—technology

The cast iron engine block design was optimized for maximum strength and minimum weight. The seven main bearings maintain uniform support throughout for the crankshaft, and by doing so, prolong its life span.

Very short fuel lines between the individual pumps and injectors present less chance of developing leaks, less maintenance over the long haul.

Molded rubber gaskets fit into integrated machined channels for virtually leakproof joints.

Spiral-gear camshaft and gear-driven oil pump and air compressor for long life and low noise levels.

Top piston ring has special chrome alloy coating for extreme durability and low oil consumption.

Engine parts are designed for maximum recyclability.

Replaceable intake and exhaust valve seat inserts and guides reduce maintenance costs on overhauls.

Electronic throttle pedal allows for precise control with less effort.

Standard anti-theft feature guards against unauthorized use of the vehicle.

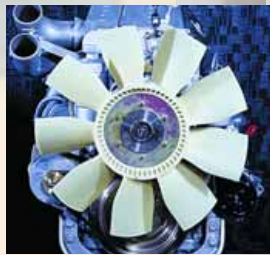
Oil pressure and coolant levels are monitored constantly by an on-board computer that signals malfunctions on items needing maintenance.

Electronically controlled cooling fan ensures quiet operation, efficient engine cooling and improved fuel economy.

Electronic engine control ensures perfect engine management under all driving conditions and provides for individual adjustments to maintain performance over time.

The oil and fuel filters are positioned upright in front of the engine for easy access.

An advanced engine protection system, including standard idle shutdown, helps avoid engine damage.



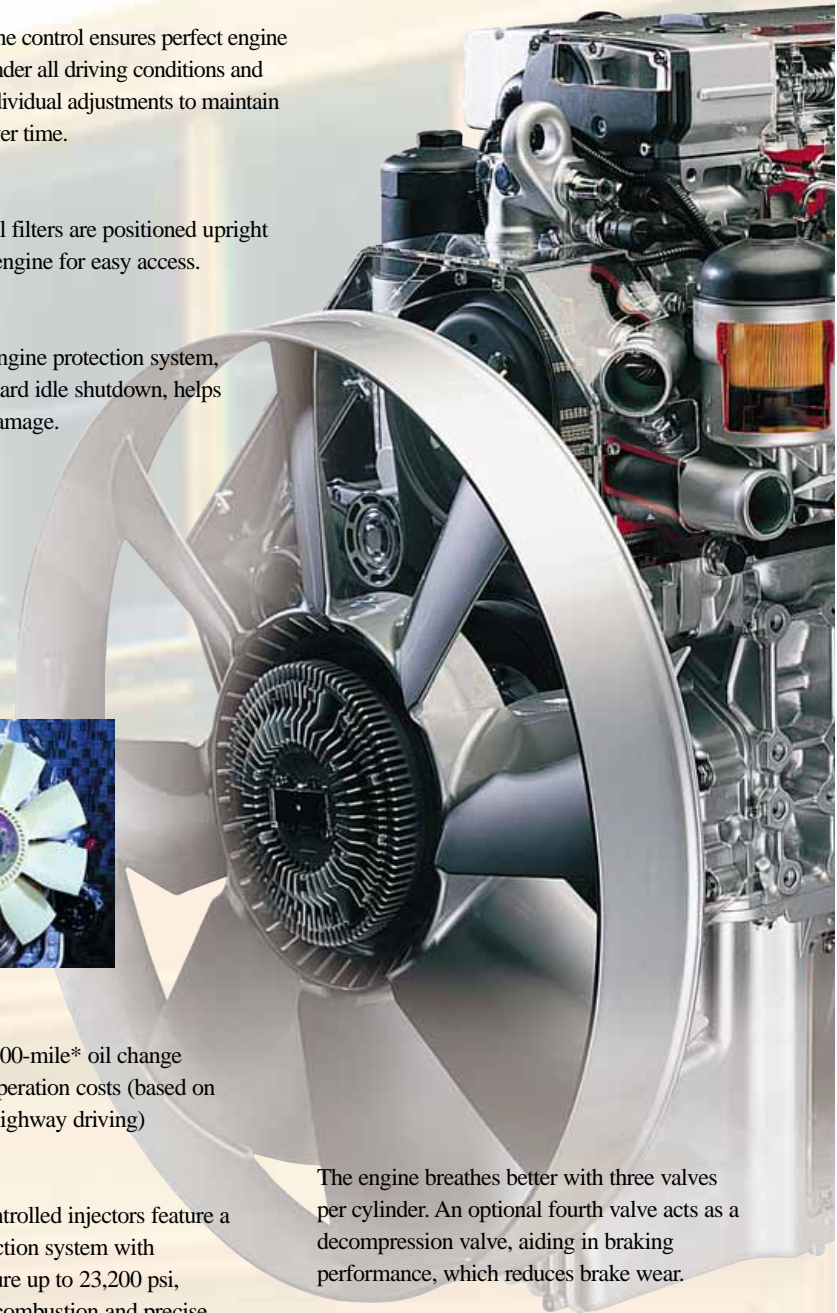
15,000- to 20,000-mile\* oil change levels reduce operation costs (based on in-city versus highway driving)

Electrically controlled injectors feature a unit pump injection system with injection pressure up to 23,200 psi, creating clean combustion and precise fuel supply. Injectors are centrally located over each piston. Connecting rods feature a new "precision" separation design of cap and rod for optimum fit and better material stress management.

Gear-driven air compressor has 50 percent less power consumption than typical compressors, leaving more power for driving and helping to reduce fuel bills.

The engine breathes better with three valves per cylinder. An optional fourth valve acts as a decompression valve, aiding in braking performance, which reduces brake wear.

The advanced-design turbocharger, wastegated on high-horsepower engines, responds to the throttle quickly for rapid acceleration and superb drivability.



# Technology working for the bottom line.

Individual unit pump injectors are easier to replace and cost less than complex, single in-line pumps.

Engine management computer converts sensor data into precise instructions for the fuel injection and engine control systems.

MBE900 engines idle at a mere 600 rpm—less than rivals—resulting in quieter running and improved fuel economy.

Electronic engine control features data logging to optimize maintenance activities.

Engine electronics are protected to prevent unauthorized tampering with engine operating parameters.

High injection pressure with eight-hole nozzle optimizes combustion of fuel/air mixture, reducing emissions.

Every component and part is built to extremely tight tolerances, so the parts fit perfectly every time.

Unique piston pin design spreads loads on piston and connecting rod for greater durability.

Carbon/plastic electrical cover reduces EMI emissions.

Power steering gear is mounted on the left side of the engine to simplify hose routing.

The engine is rebuildable, with dry sleeves if necessary.

A standard maintenance monitor signals when service is due, reducing the chance the engine will miss important service intervals.

High-torque rise at low rpm is ideal for use with automatic transmissions.

An integral engine oil cooler keeps lubricant temperatures low, promoting longer bearing and component life, and the internal design reduces the potential for oil leaks.

Maintenance-free, durable, single poly V-belt drive with automatic tensioning.

Cruise control provides driving ease, and a dual road speed limiter optimizes driver control for safe use of the vehicle and reduced fuel consumption.

The MBE900 engine complies with all EPA/CARB emission regulations, with six engine ratings LEV-certified.

MBE900 engines run quieter, keeping noise emissions to a minimum.

The engine starts quickly in temperatures down to  $-5^{\circ}$  F. An optional grid heater provides easy starting in extreme temperatures below  $-5^{\circ}$  F.

Cylinder bores are induction-hardened around the upper piston ring area. When combined with special coatings on the rings themselves, overall wear and tear is minimized.





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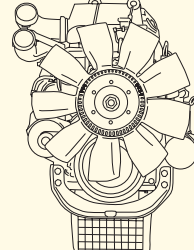
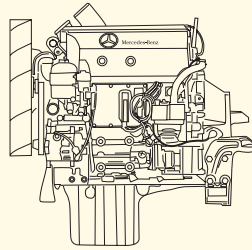
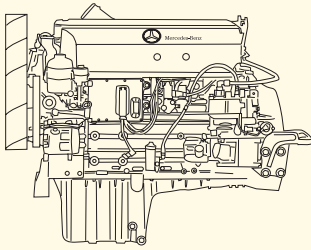
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### MBE900 Engine Ratings

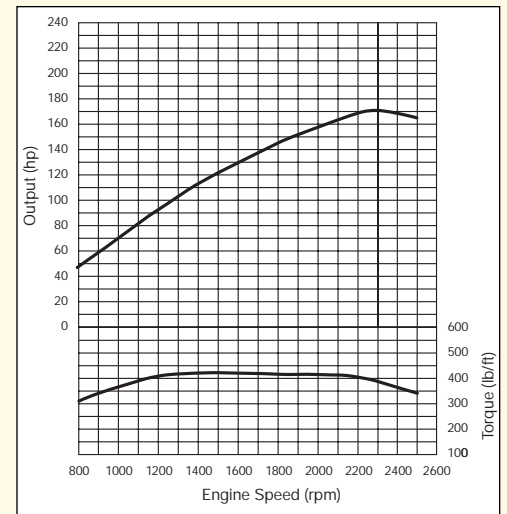
Model	Cylinders	Displacement	HP @ RPM	Torque (Lb•Ft) @ RPM	Governed RPM
MBE900-170	4/in-line	4.3L	170 @ 2300	420 @ 1400	2500
MBE900-190	4/in-line	4.3L	190 @ 2300	520 @ 1400	2500
MBE900-190	6/in-line	6.4L	190 @ 2300	520 @ 1200	2500
MBE900-210	6/in-line	6.4L	210 @ 2300	520 @ 1200	2500
MBE900-210	6/in-line	6.4L	210 @ 2300	605 @ 1200	2500
MBE900-230	6/in-line	6.4L	230 @ 2300	660 @ 1200	2500
MBE900-250	6/in-line	6.4L	250 @ 2300	660 @ 1200	2500
MBE900-280	6/in-line	6.4L	280 @ 2300	800 @ 1250	2500

### MBE900 Engine LEV/CFV Ratings

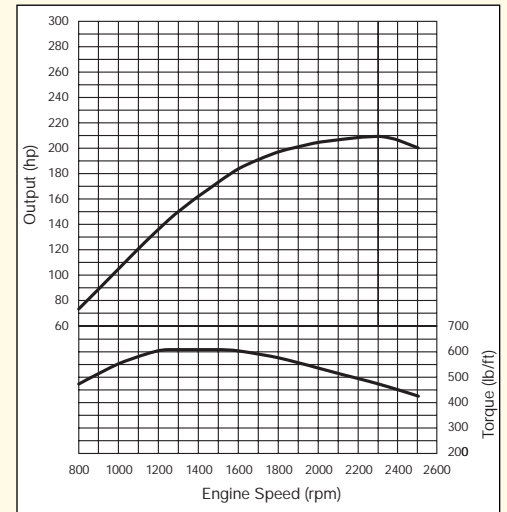
Model	Cylinders	Displacement	HP @ RPM	Torque (Lb•Ft) @ RPM	Governed RPM
MBE900-170	4/in-line	4.3L	170 @ 2300	420 @ 1400	2500
MBE900-190	6/in-line	6.4L	190 @ 2300	520 @ 1200	2500
MBE900-210	6/in-line	6.4L	210 @ 2300	520 @ 1200	2500
MBE900-210	6/in-line	6.4L	210 @ 2300	605 @ 1200	2500
MBE900-230	6/in-line	6.4L	230 @ 2300	660 @ 1200	2500
MBE900-250	6/in-line	6.4L	250 @ 2300	660 @ 1200	2500

### Power Curves

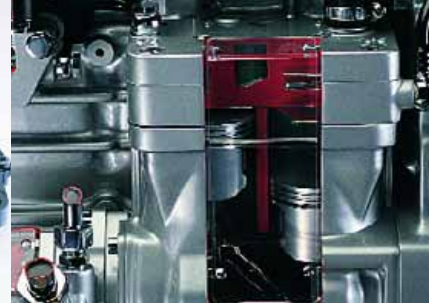
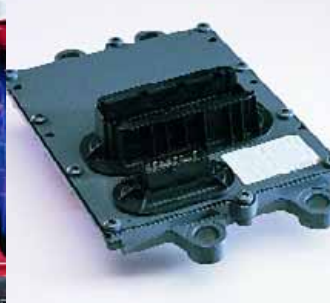
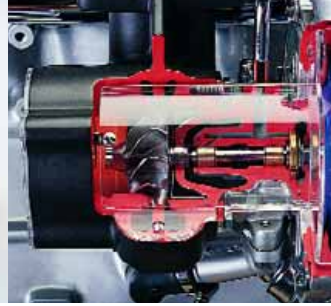
#### MBE904-170



#### MBE906-210







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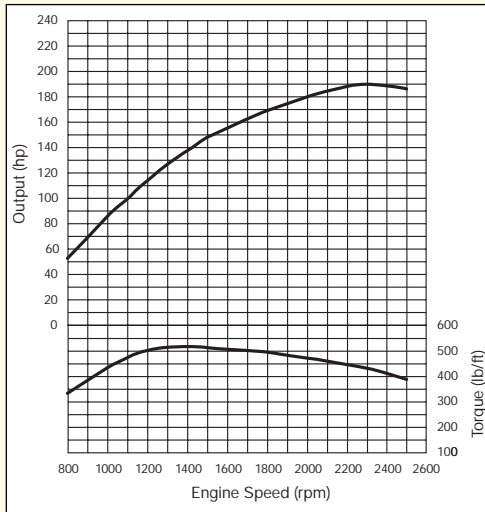
Connecting rods feature a new "precision" separation design of cap and rod for optimum fit and better material stress management.

The advanced-design turbocharger, wastegated on high-horsepower engines, responds to the throttle quickly for rapid acceleration and superb drivability.

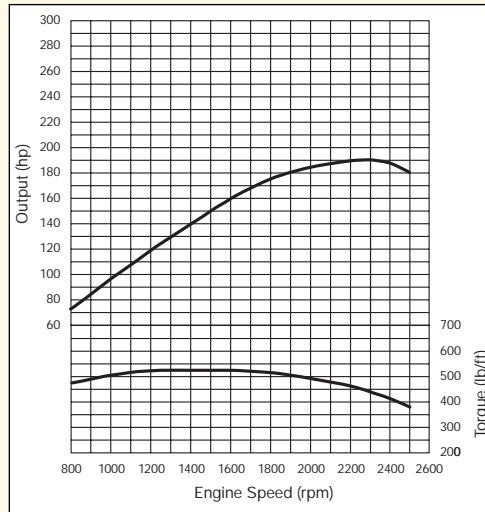
The electronic engine control ensures perfect engine management under all driving conditions and provides for individual adjustments to maintain performance over time.

Gear-driven air compressor has 50 percent less power consumption than typical compressors, leaving more power for driving and helping to reduce fuel bills.

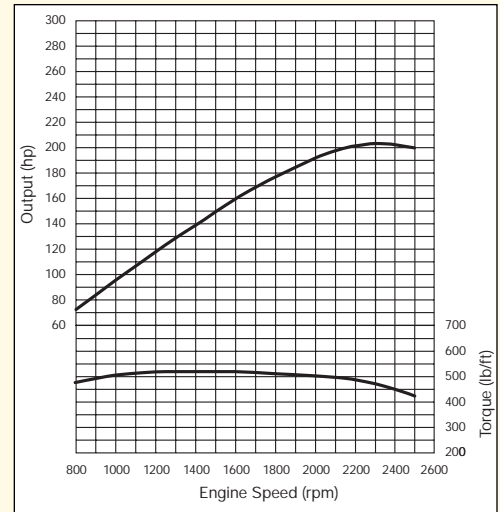
**MBE904-190**



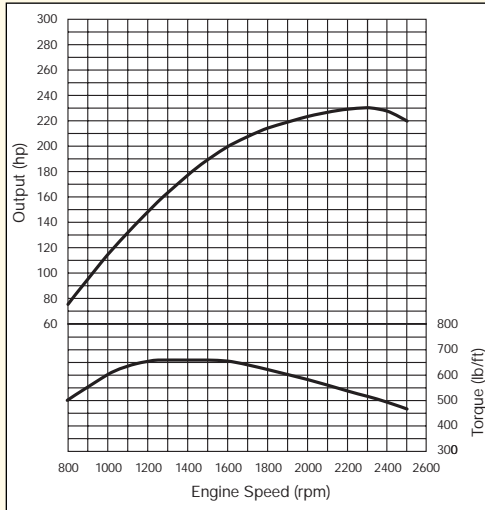
**MBE906-190**



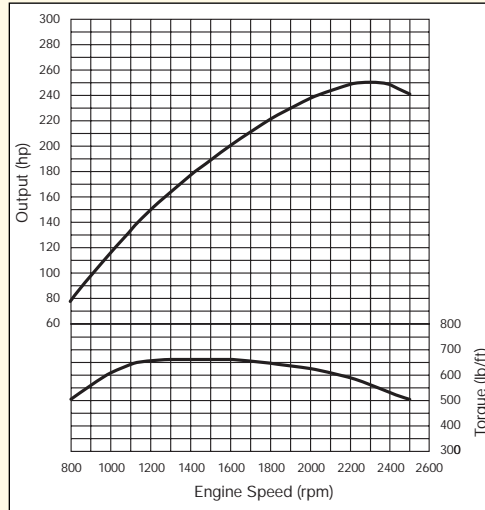
**MBE906-210**



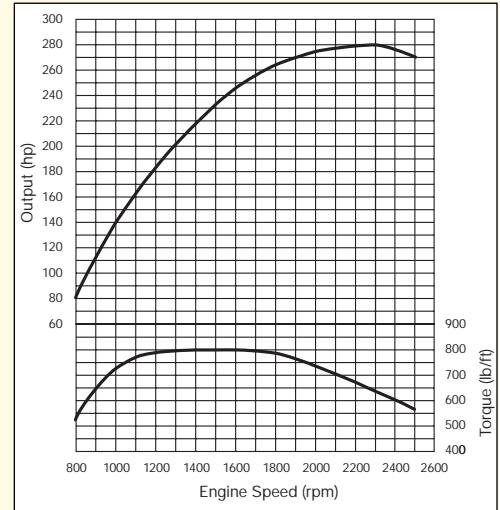
**MBE906-230**



**MBE906-250**



**MBE906-280**



# Support when and where you need it by Detroit Diesel.

The MBE900 is backed by a network of certified engine experts. Detroit Diesel distributors across the country are committed to your success and the well-being of your passengers. Immediate roadside assistance and technical solutions are just one telephone call away, anytime, day or night. And with a five-year/unlimited warranty on all parts and labor, your worries are few and far between. After your engine goes into service, it's backed by 24-hour-a-day, 365-days-a-year service support. More than 176 distributor and branch locations, plus authorized Thomas Built dealers and parts centers, stock \$220 million in parts.



**Any questions contact:**

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