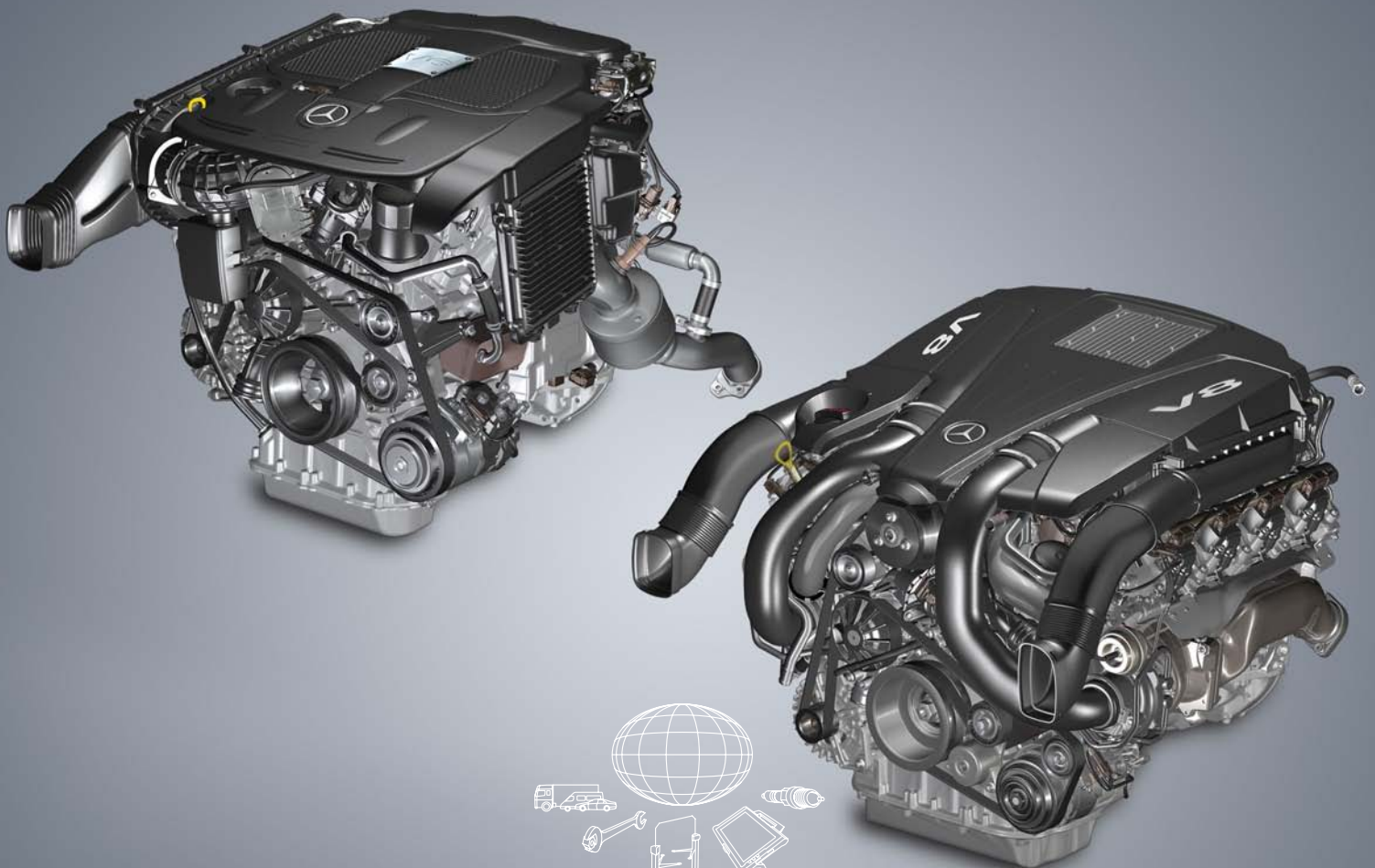




Introduction of the New Generation of V-Engines 6 and 8-cylinder M 276/M 278

Introduction into Service Manual

Mercedes-Benz



Introduction of the New Generation of V-Engines 6 and 8-cylinder M 276 / M 278

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Image no. of title image: P00.01-3992-00

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Dear reader,

This Introduction into Service Manual presents the new 6 and 8-cylinder spark-ignition engines 276 and 278 in combination with the vehicle model series 216/221.

The purpose of this brochure is to acquaint you with the technical highlights of these new engines in advance of their market launch. This brochure is intended to provide information for people employed in service or maintenance/repair as well as for after-sales staff. It is assumed that the reader is already familiar with the engines in the various Mercedes-Benz models currently on the market.

This Introduction into Service Manual is not intended as an aid for repairs or for the diagnosis of technical problems. For such needs, more extensive information is available in the Workshop Information System (WIS) and Xentry Diagnostics.

WIS is updated continuously. Therefore, the information available there reflects the latest technical status of our vehicles.

This Introduction into Service manual presents initial information relating to the new engines and, as such, is not stored in WIS. The contents of this brochure are not updated. No provision is made for supplements.

We will publicize modifications and new features in the relevant WIS documents. The information presented in this Introduction into Service Manual may therefore differ from the more up-to-date information found in WIS.

While this brochure's technical content is valid as of our publication date in April 2010, actual production vehicles may incorporate revisions and design changes based on differing technical specifications.

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Technical Information
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From autumn 2010 onwards a new generation of gasoline V-engines will be gradually introduced in Mercedes-Benz vehicles starting with the S-Class (model 221) and the S-Class Coupé (model 216).

This new engine family, with the model designations M 276 for the V6 engine and M 278 for the V8 engine, has a deliberate focus on downsizing, modularization and technological development. It replaces the highly successful powerplants of engine models M 272 and M 273.

The use of versatile technology modules makes it possible to satisfy the varying global market and legal requirements as well as future-proofing the engine family.

The new third-generation direct injection system combines an extremely fast and accurate injector with a new, jet-guided combustion system. The short switching times of the piezo injectors allow multiple injections with short pauses during a single combustion cycle.

Supplementing the technology portfolio is a coolant thermal management system to regulate the coolant circuit during the warm-up phase. The regulated vane-type oil pump with map-controlled two-stage control pressure allows the lubrication and cooling points in the engine to be supplied with a significantly lower operating energy input than would be possible with an unregulated pump.

The special features of the new V-engines at a glance:

- High-power engines successfully combining exclusive performance and demanding fuel consumption goals
- ECO start/stop function with starter-assisted direct start in combination with the 7-speed automatic transmission
- Improved comfort in terms of acoustics and vibrations
- Compliance with the currently applicable exhaust emissions legislation with potential for future conformity
- Modular concept for integration of forced induction systems and hybridization, and for compatibility with fuels with an ethanol content of up to 25%, and as an add-on module for an ethanol content of up to 85%
- Full aluminum crankcase
- Gasoline direct injection with the latest generation of piezo injectors and jet-guided combustion
- Advanced camshaft adjusters for optimized engine timing
- Advanced control and optimization of the oil and cooling circuits