Mercedes-Benz
Industrial Diesel Engines
from 40 to 612 kW

In more than 100 years in the business, we've got a lot moving

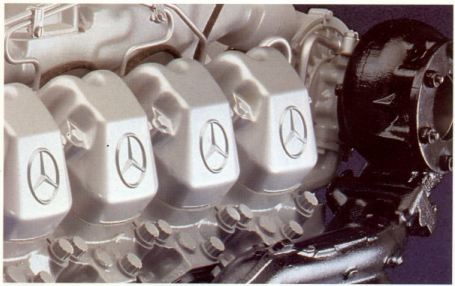
How it all began

"...This has led to the development of an entirely new industry, in motorised carriages, wire-wheeled cars, rail trolleys, trams, fire-engines, pleasure boats, commercial craft and many other such vehicles, even the smallest of which, it should be noted, can be equipped with motor power without difficulty. Self-propelled vehicles, provided in this manner with small, responsive engines, were unknown only a short time ago..."

These lines were written to the Patent Office by Gottlieb Daimler in April 1894

Now, more than a century later, Mercedes-Benz industrial engines are used throughout the world, in a greater variety of applications than Gottlieb Daimler could possibly have dreamt of

Our definition of an engine



At Mercedes-Benz, the philosophy of engine design has always been to build economical units capable not only of driving vehicles but also of meeting the full range of application requirements for industrial diesel engines. All engines which bear the name Mercedes-Benz are distinguished by performance and economy, low pollutant operation and a wealth of versions catering for a wide range of uses.
Mercedes-Benz industrial diesel engines are manufactured on a large scale and their advantages have been proven in decades of operation under the most diverse conditions, all over the world. More than 400.000 diesel engines are manufactured annually at the various factories, including those used in the company's own vehicle production.

The range is made up of three different series:

- the 600 series, consisting of 4- and 5-cylinder in-line engines
- the 300 series comprising 4- and 6-cylinder in-line engines
- the 400 series with 6-, 8-, 10- and 12-cylinder V-engines and 6-cylinder in-line engines.

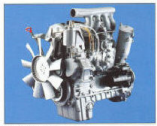
An output range from 40 kW to 612 kW. Naturally aspirated, turbocharged and intercooled engines are produced. This is of major advantage in that the ideal engine option can be selected for virtually every field of operation.
The unit construction systems yields further advantages. Users of equipment and special machinery who also run Mercedes-Benz commercial vehicles profit by the standard basic design of the engines for both areas: this considerably simplifies maintenance and parts stocking and reduces idle time.

The 600 series

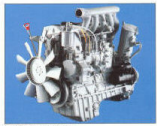
The four- and five-cylinder OM 601 and OM 602 in-line engines from the 600 series proved their worth millions of times over not only in Mercedes-Benz cars and light commercial vehicles, but also with great success in fork-lift trucks, construction equipment, agricultural machinery and road sweepers.

The 600 series has been designed with further improvements to output and torque characteristics, while at the same time bringing about a reduction in fuel consumption and pollutant emissions.

The outputs of these prechamber engines range up to 72 kW.



OM 601, max. 60 kW



OM 602, max. 72 kW

The 300 series

The type 360 engines from the 300 series have been developed according to the latest design principles.

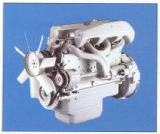
These four- and six-cylinder in-line engines have been optimised in terms of fuel consumption, torque characteristics and exhaust emission.

These engines all operate according to the four-stroke direct-injection principle. In order to meet all customers demands, the in-line engines are available as naturally aspirated versions or as turbocharged versions with or without intercooler.

The type 360 engines have been developed for the Mercedes-Benz commercial vehicle range, with a modular design adapted to the requirements of the customer for industrial applications. The engines are used in special vehicles, agricultural machinery, forklift trucks and construction equipment.

OM 364, max. 68 kW

OM 364 A, max. 87 kW
OM 364 LA, max. 102 kW



OM 366, max. 102 kW

OM 366 A, max. 129 kW
OM 366 LA, max. 177 kW

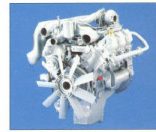
The 400 series

The 400 series of industrial diesel engines comprises six-, eight-, ten- and twelve-cylinder V-type engines, with outputs ranging from 80 to 612 kW. The V-type engines are complemented by vertical and horizontal in-line engines.

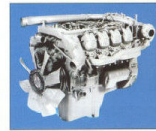
In order to meet all customers demands, the V-type and in-line engines are available as naturally aspirated versions or as turbocharged versions with or without intercooler.

The 400 series engines use the Mercedes-Benz direct injection system which excels with its extremely favourable specific fuel consumption and pollutant emission levels.

The 400 series engines are used as power units for mobile cranes and buses as well as for agricultural machinery and construction equipment.



OM 401 LA, max. 230 kW



OM 402 LA, max. 280 kW

OM 441, max. 165 kW
OM 441 LA, max. 250 kW

OM 442, max. 218 kW
OM 442 A, max. 269 kW
OM 442 LA, max. 405 kW

OM 443 LA, max. 412 kW

OM 444 A, max. 406 kW
OM 444 LA, max. 612 kW

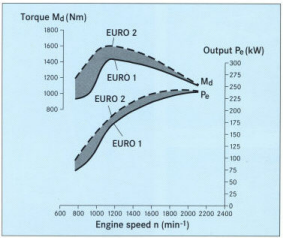
OM 447, max. 184 kW
OM 447 A, max. 222 kW
OM 447 LA, max. 276 kW

OM 447 h, max. 184 kW
OM 447 hA, max. 220 kW
OM 447 hLA, 220 kW

EURO2* engines – latest environmentally compatible technology

For our commercial vehicle and industrial engine range, we have designed low-pollutant engines which comply with the EURO 2 directive. They were developed with the accent on both environmental compatibility and benefits for the customer.

The EURO 2 engines emit around 60% less particulate matter than EURO 1 engines, while gaseous emissions have been reduced by ca. 12%.



Example: OM 441 LA (250 kW at 2100/min)

Benefits for the operator

For environmental reasons and in order to maximise benefits for the customer, we decided to offer this new engineering two years earlier than the date prescribed by the EURO 2 directive.

As well as the tax advantages which are granted in some European countries, the early use of EURO 2 engines also has benefits in terms of value retention and a high resale value. And if requirements for example at city or regional level are tightened in the meantime, this poses no problems since these engines are already equipped with the very latest emissions technology.

The new engineering

Our aim in developing these engines was to comply with the stringent EURO 2 emission limits while at the same time achieving favourable fuel consumption, longer maintenance intervals and low maintenance costs.

We accomplished this through further development of existing engines, using only turbocharged engines with intercooler. Further improvements were made to the combustion process, to the turbocharging and to the entire injection system, where injection pressures were substantially raised, to around 1200 bar.

***EURO 2 means: the engine conforms to the provisions regarding gaseous emissions and particulates contained in directive 88/77/EEC of December 3, 1987, including all changes through to 91/542/EEC of October 1, 1991, and complies with the limits stated in line B of table 6.2.1**

The 300 series

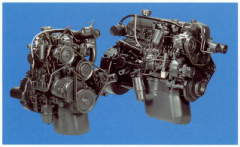
The chief new features for the in-line engines of the 300 series are a new injection pump with newly developed camshaft, a newly shaped piston recess and a turbocharger with wastegate, which reduces boost pressure at higher engine speeds and outputs.

The 300 series comprises the 4-cylinder OM 364 LA with 103 kW and the 6-cylinder OM 366 LA with outputs from 125 to 177 kW.

The 400 series

In the 400 series too, the focus of the innovations is a new injection pump. This is a so-called control-sleeve pump with EDC (electronic diesel control).

With this technology and two basic engines, the OM 441 LA V6 and the OM 442 LA V8, it is possible to offer a total of seven output ratings, between 200 and 390 kW. The horizontal in-line 6-cylinder OM 447 hLA with outputs from 157 to 220 kW completes the range.



Four ways in which we help you to succeed

1. Project consultancy

By selecting the right combination of basic engine and components, such as intake and exhaust manifolds or injection pumps and governors it is possible even with difficult installations, to find the right engine for a specific machine or application.

Our wide experience plays a crucial role when special technical know-how is required to tackle extreme operating conditions – here too, our project consultants can provide their assistance.

2. Application engineering consultancy service and prototype testing

Proper installation of industrial engines is essential, taking into account the installation environment in the equipment concerned and the conditions under which the equipment will be used. Our installation guidelines provide clear and helpful recommendations on such matters as design of the cooling system, the air intake and the exhaust line.

Since only practical operation will prove whether an engine functions perfectly, our application consultants will conduct practical testing when required. Checks on cooling capacity, permissible intake vacuum and exhaust back pressures and load collective recordings are just a few of the many examples.

3. Training

We have always attached particular importance, not only to training our own staff but also to providing further instruction for the customer-service staff. Comprehensive training facilities have been set up for this purpose, at which specialised personnel can pass on important technical knowledge.

If requested, training can also be carried out on the premises of our customers. This service allows us to cater even more intensively for its customers' needs. Naturally, this training is prepared and carried out with the same degree of care as that given at the company's own training centres.

4. Service

Technology only becomes a profitable long-term investment when backed up by first-class service. If this technology is in use all over the world then service becomes more important. The efficient Mercedes-Benz service organisation is represented all over the world, with 6,100 points where service and parts are available. Machinery manufacturers and users know that they can rely on this organisation if they have a problem.

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