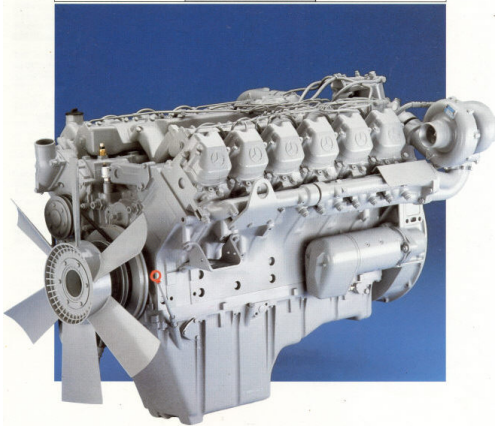
Technical Data

Mercedes-Benz Industrial Diesel Engine OM 444 A 390 kW

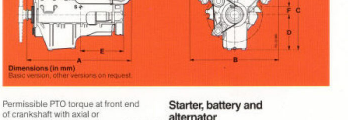
	OM 444 A	OM 444 LA



Technical Data.

The OM 444 A is a turbocharged V-engine belonging to the 400 series and is one of the most powerful of the industrial diesel engines offered by Daimler-Benz.

A = 1430
B = 1215
C = 1040
D = 481
E = 610
F = 110
S = center of gravity



Dimensions (in mm)
Basic version, other versions on request

General

Cylinder arrangement	90°-V with exhaust gas turbocharger
Cooling system	recirculating water cooling
Operation	4-stroke, direct injection
Number of cylinders	12
Cylinder bore	dia. 128 mm
Piston stroke	142 mm
Total displacement	21.93 l
Compression ratio	16.25 : 1
Mean effective pressure at 2100/min and 390 kW	10.2 bar
Mean piston speed at 2100/min	9.9 m/s
Starting speed	approx. 120/min
Sense of rotation of engine when facing flywheel	ccw
Starter	electric
Cooling water capacity of engine without recooling system	23 l
Max. lube oil capacity, standard oil pan	37 l
Weight of basic engine acc. to VDMA, i. e. without recooling system, alternator and starter	1165 kg
Weight of engine with fan, alternator and starter	1200 kg
Power-to-weight ratio, referred to VDMA weight and 390 kW	2.98 kg/kW
Braking power of engine (exhaust brake) at an engine speed of 2100/min without throttle valve	approx. 74 kW
with throttle valve	approx. 200 kW
Cold-starting ability without starting aid and battery 75 % charged, down to	−20°C
Permissible PTO torque at front end of crankshaft with axial or single-side radial PTO	on request

Power, torque and engine speed ratings

Power and torque curves see diagram	
Max. torque (80/1269/EEC) at 1000...1600/min	2357 Nm
Min. permissible engine speed for continuous operation below 1500/min	on request
Maximum speed without load depending on cyclic irregularity of governor	
Min. idling speed	approx. 600/min

Installation data

Total moment of inertia of engine with flywheel J = 1.1	2.4 kgm²
Combustion air volume at 2100/min	34 m³/min
Exhaust gas volume at 2100/min and 390 kW with back pressure of 60 mbar at turbine outlet	85.5 m³/min
Heat to be dissipated from cooling water with uncooled exhaust manifold	2300 kJ/kWh
Capacity of cooling water pump without cooling system at engine speed 2100/min	640 l/min
Permissible air intake restriction upstream of turbocharger inlet at rated automotive power	
oil bath air filter	max. 30 mbar
dry air filter, new	max. 20 mbar
polluted	max. 50 mbar
Permissible exhaust gas back pressure at rated automotive power at turbine outlet	max. 60 mbar

Starter, battery and alternator

Starter	Bosch
Voltage	24 V
Output	6.6 kW
Weight	18.5 kg
Starter battery	
Voltage	24 V
Min. capacity	110 Ah
Three-phase alternator	Bosch
Voltage	28 V
Current	10/30 A
Weight	4 kg
Power delivery starts at idling speed	

Injection pump and governor

In-line injection pump with governor	Bosch
Provision for installing standard engine speed and injection governors	

Consumption data

Lube oil consumption for new and already run-in engines is approx. 0.5 % of effective fuel consumption.
This value can – acc. to application and running time – rise in individual cases to max. 1 %.

Power and torque of engine type OM 444 A.

80/1269/EEC

Maximum automotive power ————

The power is available at the flywheel of the engine. The power required by the standard fan has already been taken into account.

DIN 6271

Maximum ISO net brake fuel stop power **IFN** · — · —

ISO standard power exceedable by 10% **ICXN** — — —

As distinct from DIN standard 6271, the power required by a fan is not considered in power specifications IFN and ICXN because of the great variety of cooling systems available.

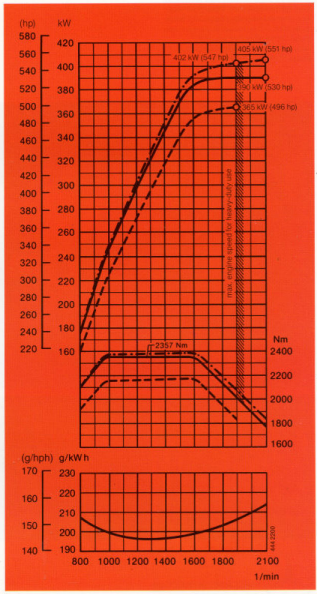
The ISO net brake fuel stop power **IFN** cannot be exceeded. It is permitted for 1 hour without interruption or intermittently within a period of 6 hours.

The ISO standard power **ICXN** represents continuous power exceedable by 10%. The overload power is blocked and permitted for 1 hour without interruption or intermittently within a period of 12 hours.

The power specifications and the specific fuel consumption data refer to diesel fuel with a reference density of $\varrho_{15} = 0.84\ g/cm^3$ and a temperature of 35 °C at the injection pump inlet.

In individual cases, the power ratings can be chosen to suit the intended application, taking all operating conditions into account.

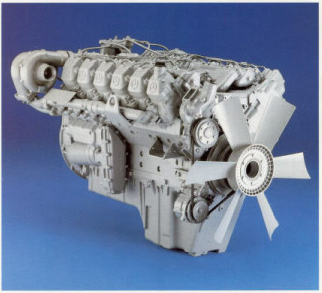
Engine speeds below 1500/min for continuous operation upon request.



Daimler-Benz manufactures and supplies a wide range of industrial diesel engines varying from 17 to 610 kW (23 – 830 hp). Information concerning these can be found in the brochures describing the basic concept behind each family of engines and in type sheets detailing the technical specifications of all the various engines.

Besides a high-quality and technically perfected product, Daimler-Benz also provides a comprehensive back-up system. This includes project and installation advisory services, parts supply, a worldwide service network and service training.

Subject to modifications.
The data included in this brochure are to be regarded as approximate.
The illustrations may also contain special equipment which is not part of the standard delivery specification.



Should you require further material, please consult the Vehicules Components Division in Stuttgart-Untertuerkheim:

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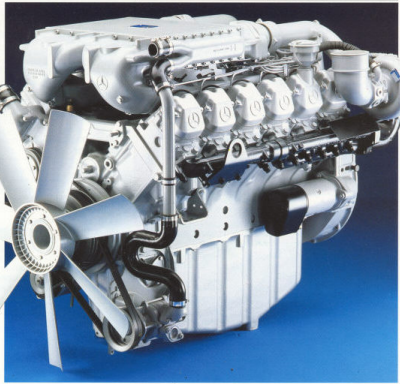
MERCEDES-BENZ

Technical Data

Mercedes-Benz Industrial Diesel Engine OM 444 LA 588 kW

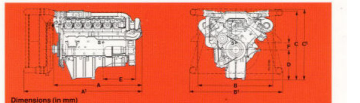
	OM 444 A	OM 444 LA



Technical Data.

The OM 444 LA is a turbocharged V-engine belonging to the 400 series and is one of the most powerful of the industrial diesel engines offered by Daimler-Benz.

A = 1430 C = 1120
A' = 1915 D = 481
B = 1215 E = 620
B' = 1500 F = 115
C = 1105 S = center of gravity



Dimensions (in mm)
Basic version, other versions on request

General

Cylinder arrangement with exhaust gas turbocharger and intercooler	90°-V
Cooling system	recirculating water cooling
Operation	4-stroke, direct injection
Number of cylinders	12
Cylinder bore	dia. 128 mm
Piston stroke	142 mm
Total displacement	21.93 l
Compression ratio	14.5 : 1
Mean effective pressure at 2100/min and 588 kW	15.3 bar
Mean piston speed at 2100/min	9.9 m/s
Starting speed	approx. 120/min
Sense of rotation of engine when facing flywheel	ccw
Starter	electric
Cooling water capacity of engine without recooling system	26 l
Max. lube oil capacity, standard oil pan	37 l
Weight of basic engine acc. to VDMA, i.e. without recooling system, alternator and starter	1215 kg
Weight of engine with fan, alternator and starter	1250 kg
Power-to-weight ratio, referred to VDMA weight and 588 kW	2.07 kg/kW
Braking power of engine (exhaust brake) at an engine speed of 2100/min without throttle valve	approx. 74 kW
with throttle valve	approx. 200 kW
Cold-starting ability at battery 75 % charged, down to	−20 °C
Permissible PTO torque at front end of crankshaft with axial or single-side radial PTO	on request

Power, torque and engine speed ratings

Power and torque curves see diagram	
Max. torque (80/1269/EEC) at 1000...1600/min	3200 Nm
Min. permissible engine speed for continuous operation below 1500/min	on request
Maximum speed without load depending on cyclic irregularity of governor	
Min. idling speed	approx. 600/min

Installation data

Total moment of inertia of engine with flywheel J = 1.1	2.4 kgm²
Combustion air volume at 2100/min	51 m³/min
Exhaust gas volume at 2100/min and 588 kW with back pressure of 60 mbar at turbine outlet	130 m³/min
Heat to be dissipated from cooling water with uncooled exhaust manifold, without intercooler	2300 kJ/kWh
Capacity of cooling water pump without cooling system at engine speed 2100/min	640 l/min
Permissible air intake restriction upstream of turbocharger inlet at rated automotive power	
oil bath air filter	max. 30 mbar
dry air filter, new	max. 20 mbar
polluted	max. 50 mbar
Permissible exhaust gas back pressure at rated automotive power at turbine outlet	max. 60 mbar

Starter, battery and alternator

Starter	Bosch
Voltage	24 V
Output	6.6 kW
Weight	18.5 kg
Starter battery	
Voltage	24 V
Min. capacity	110 Ah
Three-phase alternator	Bosch
Voltage	28 V
Current	10/30 A
Weight	4 kg
Power delivery starts at idling speed	

Injection pump and governor

In-line injection pump with governor	Bosch
Provision for installing standard engine speed and injection governors	

Consumption data

Fuel consumption see diagram	
Lube oil consumption for new and already run-in engines is	approx. 0.5 % of effective fuel comsumption.

This value can – acc. to application and running time – rise in individual cases to max. 1 %.

Power and torque of engine type OM 444 LA.

80/1269/EEC

Maximum automotive power ———

The power is available at the flywheel of the engine. The power required by the standard fan has already been taken into account.

DIN 6271

Maximum ISO net brake fuel stop power **IFN** · — · — ·

ISO standard power exceedable by 10 % **ICXN** — — —

As distinct from DIN standard 6271, the power required by a fan is not considered in power specifications IFN and ICXN because of the great variety of cooling systems available.

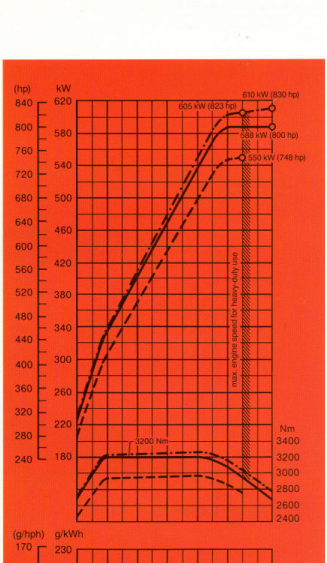
The ISO net brake fuel stop power **IFN** cannot be exceeded. It is permitted for 1 hour without interruption or intermittently within a period of 6 hours.

The ISO standard power **ICXN** represents continuous power exceedable by 10 %. The overload power is blocked and permitted for 1 hour without interruption or intermittently within a period of 12 hours.

The power specifications and the specific fuel consumption data refer to diesel fuel with a reference density of $\varrho_{15} = 0.84\ g/cm^3$ and a temperature of 35 °C at the injection pump inlet.

In individual cases, the power ratings can be chosen to suit the intended application, taking all operating conditions into account.

Engine speeds below 1500/min for continuous operation upon request.



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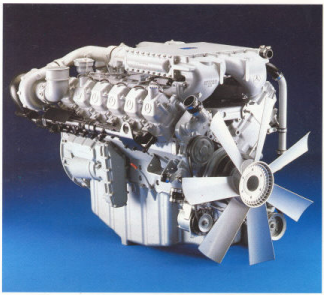

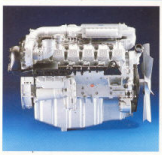

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