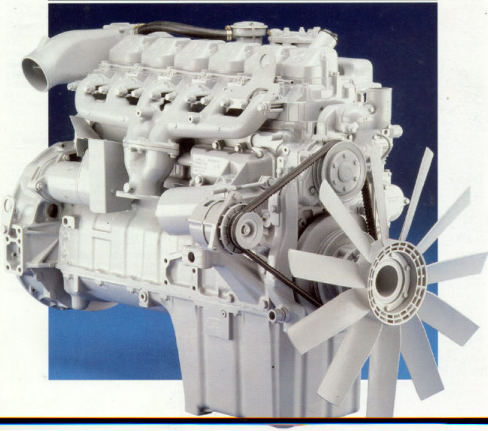
Technical Data

# Mercedes-Benz Industrial Diesel Engine OM 447 177 kW

| OM 447 | OM 447 A | OM 447 LA |
|---|---|---|



11 SUBAT 1995

# Technical Data.

**The OM 447 in-line engine is part of the industrial engine series 400 offered by Daimler-Benz.**

A = 1326
B = 820
C = 1165
D = 510
E = 650
F = 136
S = centre of gravity

**Dimensions (in mm)**
Basic version, recirculation cooling system (UK), other versions on request.

## General

| | |
|---|---|
| Cylinder arrangement | vertical, in-line |
| Cooling system | recirculating water cooling |
| Operation | 4-stroke, direct injection |
| Number of cylinders | 6 |
| Cylinder bore | dia. 128 mm |
| Piston stroke | 155 mm |
| Total displacement | 11.967 l |
| Compression ratio | 16.5 : 1 |
| Mean effective pressure at 2100/min and 177 kW | 8.5 bar |
| Mean piston speed at 2100/min | 10.8 m/s |
| Starting speed | approx. 120/min |
| Sense of rotation of engine when facing flywheel | ccw |
| Starting system | electric |
| Cooling water capacity, engine w/o recooling system | 14 l |
| Max. lube oil capacity, standard oil pan | 24.5 l |
| Weight of basic engine acc. to VDMA, w/o recooling system, alternator and starter | 780 kg |
| Weight of engine with fan, alternator and starter | 815 kg |
| Power-to-weight ratio, referred to VDMA weight and 177 kW | 4.41 kg/kW |
| Braking power of engine (exhaust brake) at an engine speed of 2100/min | |
| w/o throttle valve | approx. 57 kW |
| with throttle valve | approx. 100 kW |
| Cold-starting ability w/o 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 | upon request |

## Power, torque and engine speed ratings

| | |
|---|---|
| Power and torque curves: see diagram | |
| Max. torque (80/1269/EEC) at 1300/min | 883 Nm |
| Lowest permissible continuous operating speed below 1500/min upon request | |
| Max. speed w/o load depending on degree of cyclic irregularity of governor | |
| Min. idling speed | 600/min |

## Installation data

| | |
|---|---|
| Total moment of inertia of engine with flywheel J = 1.1 | 1.93 kgm² |
| Combustion air quantity at 2100/min | 10.8 m³/min |
| Exhaust gas volume at 2100/min, 177 kW and a counterpressure of 60 mbar at engine outlet | 32.5 m³/min |
| Heat to be dissipated from cooling water with uncooled exhaust gas manifold | 2300 kJ/kWh |
| Capacity of cooling water pump without cooling system at an engine speed of 2100/min | 460 l/min |
| Permissible air intake restriction upstream of engine 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 engine outlet | max. 60 mbar |

## Starter, battery and alternator

| | |
|---|---|
| Starter | make Bosch |
| Voltage | 24 V |
| Output | 5.4 kW |
| Weight | 16 kg |
| Starting battery | |
| Voltage | 24 V |
| Min. capacity | 110 Ah |
| Alternator | make Bosch |
| Voltage | 28 V |
| Ampere | 10/30 A |
| Weight | 4 kg |
| Power delivery starts at idling speed | |

## Injection pump and governor

| | |
|---|---|
| In-line injection pump with governor | make 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 447.

## 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.

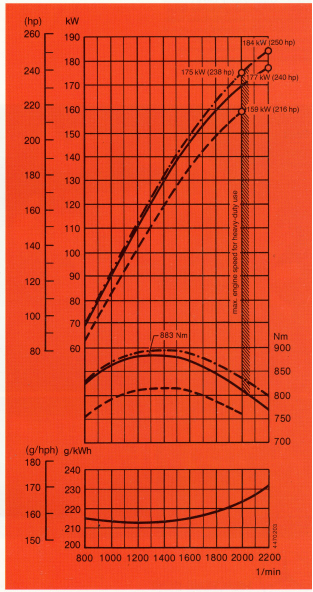
The ISO net brake fuel stop power **IFN** cannot be exceeded. It is permitted for 1 hour without interruption or intermittently within a period of 6 hours.

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/cm³ 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.
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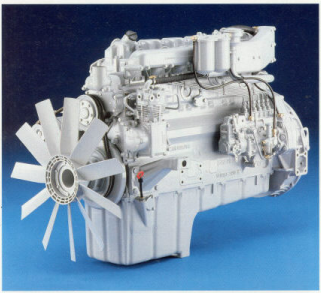


**Should you require further material, please consult the Vehicules Components Division in Stuttgart-Untertuerkheim:**

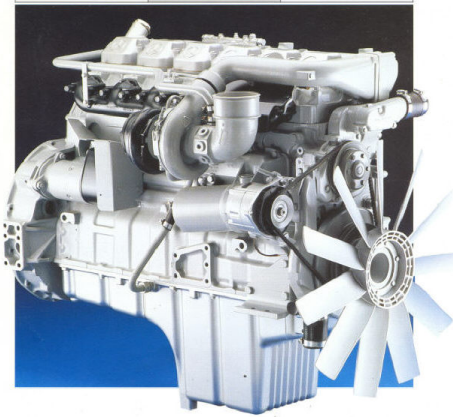
**Daimler-Benz AG**
**Produktbereich**
**Fahrzeugaggregate (PBA)**
**Postfach 600202**
**D-7000 Stuttgart 60**
**Telefon (0711) 17-0**
**Telefax (0711) 175 59 71**
**Telex 7 2 524-0**

MERCEDES-BENZ

Technical Data

# Mercedes-Benz Industrial Diesel Engine OM 447 A 213 kW

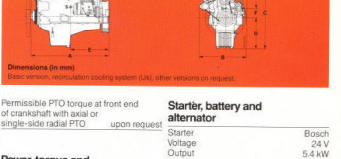
| OM 447 | OM 447 A | OM 447 LA |
|---|---|---|



# Technical Data.

**The OM 447 A turbocharged in-line engine is part of the industrial engine series 400 offered by Daimler-Benz.**

A = 1326
B = 820
C = 1165
D = 510
E = 655
F = 161
S = centre of gravity




**Dimensions (in mm)**
Basic version, recirculation cooling system (UA), other versions on request.

## General

| | |
|---|---|
| Cylinder arrangement with exhaust-gas turbocharging | vertical, in-line |
| Cooling system | recirculating water cooling |
| Operation | 4-stroke, direct injection |
| Number of cylinders | 6 |
| Cylinder bore | dia. 128 mm |
| Piston stroke | 155 mm |
| Total displacement | 11.967 l |
| Compression ratio | 16.25 : 1 |
| Mean effective pressure at 2100/min and 213 kW | 10.2 bar |
| Mean piston speed at 2100/min | 10.8 m/s |
| Starting speed | approx. 120/min |
| Sense of rotation of engine when facing flywheel | ccw |
| Starting system | electric |
| Cooling water capacity, engine w/o recooling system | 14 l |
| Max. lube oil capacity, standard oil pan | 24.5 l |
| Weight of basic engine acc. to VDMA, w/o recooling system, alternator and starter | 825 kg |
| Weight of engine with fan, alternator and starter | 860 kg |
| Power-to-weight ratio, referred to VDMA weight and 213 kW | 3.87 kg/kW |
| Braking power of engine (exhaust brake) at an engine speed of 2100/min w/o throttle valve | approx. 47 kW |
| with throttle valve | approx. 120 kW |
| Cold-starting ability w/o 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 | upon request |

## Power, torque and engine speed ratings

| | |
|---|---|
| Power and torque curves: see diagram | |
| Max. torque (80/1269/EEC) at 1000...1500/min | 1270 Nm |
| Lowest permissible continuous operating speed below 1500/min upon request | |
| Max. speed w/o load depending on degree of cyclic irregularity of governor | |
| Min. idling speed | 600/min |

## Installation data

| | |
|---|---|
| Total moment of inertia of engine with flywheel $J = 1.1$ | 2.1 $kgm^2$ |
| Combustion air quantity at 2100/min | 19 $m^3$/min |
| Exhaust gas volume at 2100/min, 213 kW and a counterpressure of 60 mbar at turbine outlet | 48 $m^3$/min |
| Heat to be dissipated from cooling water with uncooled exhaust gas manifold | 2300 kJ/kWh |
| Capacity of cooling water pump without cooling system at an engine speed of 2100/min | 460 l/min |
| Permissible intake air resistance in front of blower inlet at nominal power | |
| oil bath air filter | max. 30 mbar |
| dry air filter, new | max. 20 mbar |
| dry air filter, polluted | max. 50 mbar |
| Permissible exhaust gas counterpressure at turbine outlet at nominal power | max. 60 mbar |

## Starter, battery and alternator

| | |
|---|---|
| Starter | Bosch |
| Voltage | 24 V |
| Output | 5.4 kW |
| Weight | 16 kg |
| Starting battery | |
| Voltage | 24 V |
| Min. capacity | 110 Ah |
| Alternator | Bosch |
| Voltage | 28 V |
| Ampere | 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 447 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.

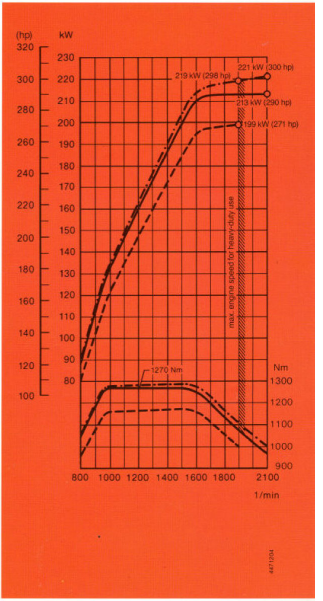
The ISO net brake fuel stop power **IFN** cannot be exceeded. It is permitted for 1 hour without interruption or intermittently within a period of 6 hours.

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 $\varrho_{20} = 0.84\ g/cm^3$ 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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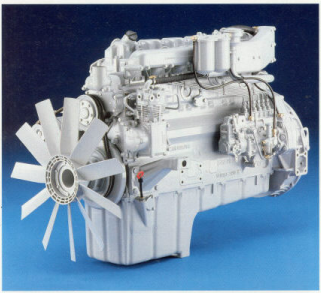

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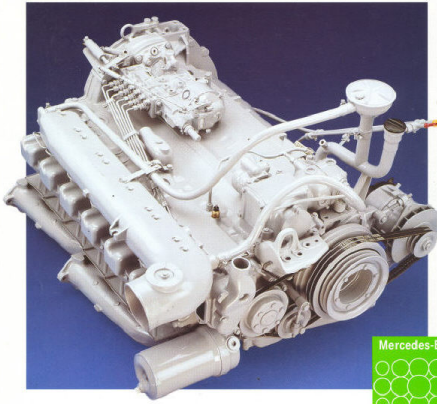
**Fahrzeugaggregate (PBA)**
**Postfach 600202**
**D-7000 Stuttgart 60**
**Telefon (0711) 17-0**
**Telefax (0711) 175 59 71**
**Telex 7 2 524-0**

MERCEDES-BENZ

Technical Data

# Mercedes-Benz Industrial Diesel Engine OM 447 h 157 kW

| | | |
|---|---|---|
| OM 447 h | OM 447 hA | OM 447 hLA |



Mercedes-Benz

low pollution

11 SUBAT 1995

# Technical Data.

**The OM 447 h in-line engine is part of the industrial engine series 400 offered by Mercedes-Benz.**

A = 1315
B = 1110
C = 670
D = 300
E = 655
F = 136
G = 420
S = center of gravity

**Dimensions (in mm)**
Basic version recirculation cooling system (Uk), other versions on request.

## General

| | |
|---|---|
| Cylinder arrangement | horizontal, in-line |
| Cooling system | recirculating water cooling |
| Operation | 4-stroke, direct injection |
| Number of cylinders | 6 |
| Cylinder bore | dia. 128 mm |
| Piston stroke | 155 mm |
| Total displacement | 11.967 l |
| Compression ratio | 18:1 |
| Mean effective pressure at 2200 / min and 157 kW | 7.2 bar |
| Mean piston speed at 2200 / min | 11.4 m/s |
| Starting speed | approx. 120 / min |
| Sense of rotation of engine when facing flywheel | ccw |
| Starting system | electric |
| Cooling water capacity, engine w/o recooling system | 15 l |
| Max. lube oil capacity, standard oil pan | 21 l |
| Weight of basic engine acc. to VDMA, w/o recooling system, alternator and starter | 785 kg |
| Weight of engine with fan, alternator and starter | 820 kg |
| Power-to-weight ratio, referred to VDMA weight and 157 kW | 5.0 kg/kW |
| Braking power of engine (exhaust brake) at an engine speed of 2200 / min w/o butterfly valve | 49 kW |
| with butterfly valve | 111 kW |
| Cold-starting ability w/o 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 | upon request |

## Power, torque and engine speed ratings

| | |
|---|---|
| Power and torque curves: | see diagram |
| Max. torque at 1000...1400 / min | 750 Nm |
| Lowest permissible continuous operating speed below 1500 / min | upon request |
| Max. speed w/o load depending on degree of cyclic irregularity of governor | |
| Min. idling speed | 600 / min |

## Installation data

| | |
|---|---|
| Total moment of inertia of engine with flywheel J = 1.1 | 1.93 kgm² |
| Combustion air quantity at 2200 / min | 12.2 m³ / min |
| Exhaust gas volume at 2200 / min, 157 kW and a counterpressure of 100 mbar at engine outlet | 34 m³ / min |
| Heat to be dissipated from cooling water with uncooled exhaust gas manifold | 2300 kJ / kWh |
| Capacity of cooling water pump without cooling system at an engine speed of 2200 / min | 450 l / min |
| Permissible air intake restriction upstream of engine inlet at rated automotive power | |
| oil bath air filter | max. 30 mbar |
| dry air filter - new | max. 25 mbar |
| - polluted | max. 50 mbar |
| Permissible exhaust gas back pressure at rated automotive power at engine outlet | max. 100 mbar |

## Starter, battery and alternator

| | |
|---|---|
| Starter | Bosch |
| Voltage | 24 V |
| Output | 5.4 kW |
| Weight | 16 kg |
| Starting battery | |
| Voltage | 24 V |
| Min. capacity | 110 Ah |
| Alternator | Bosch |
| Voltage | 28 V |
| Ampere | 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 an already run-in engine amounts up to 0.5% of effective fuel consumption. This value may be exceeded in isolated cases depending on application and running time.

# Power, torque and fuel consumption of engine type OM 447 h.

## 80/1269/EEC-89/491/EEC

Maximum automotive power
Visco fan
hydraulic loose ———

The power rating quoted above complies with the directive 88/77/EEC, alteration 91/542/EEC, aiming at a reduction in gaseous emissions **and** particulates. Valid as of 1.7.1992 for new homologation.

Fan, rigid — — —

## DIN 6271

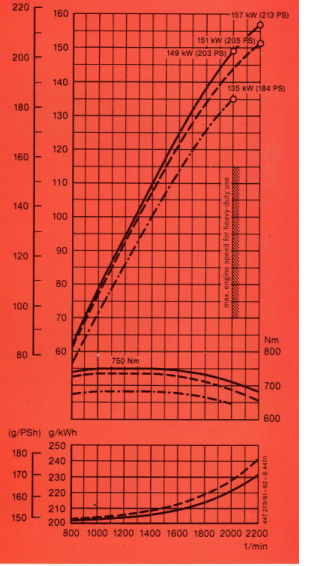
Maximum ISO net brake
fuel stop power **IFN** ———

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

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 $\rho_{15} = 0.84\ g/cm^3$ and a temperature of 35°C at the injection pump inlet.

Exhaust system: from turbocharger flange approx. 1000 mm, two flutes.

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

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

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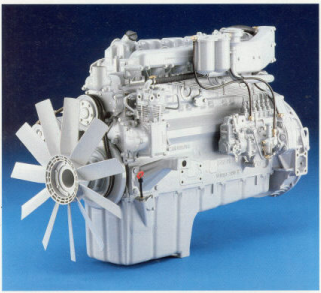

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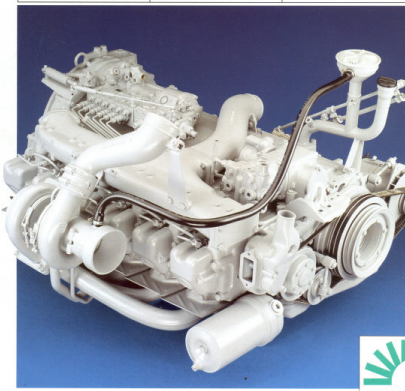
**Produktbereich**
**Fahrzeugaggregate (PBA)**
**Postfach 600202**
**D-7000 Stuttgart 60**
**Telefon (0711) 17-0**
**Telefax (0711) 175 59 71**
**Telex 7 2 524-0**

MERCEDES-BENZ

Mercedes-Benz
Industrial engines

# Technical Data
# OM 447 hLA

| 157 kW | 184 kW | 220 kW |
|---|---|---|



EURO2
low pollution

11 SUBAT 1995

# Technical Data.

**The OM 447 hLA turbocharged in-line engine is part of the industrial engine series 400 offered by Mercedes-Benz.**

| | |
|---|---|
| A = 1315 | E = 655 |
| B = 1300 | F = 165 |
| C = 845 | G = 420 |
| D = 300 | S = center of gravity |

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

## General

| | |
|---|---|
| Cylinder arrangement | horizontal, in-line with exhaust-gas turbocharger and intercooler |
| Cooling system | recirculating water cooling |
| Operation | 4-stroke, direct injection |
| Number of cylinders | 6 |
| Cylinder bore | dia. 128 mm |
| Piston stroke | 155 mm |
| Total displacement | 11.967 l |
| Compression ratio | 18:1 |
| Mean effective pressure at 2200 / min and 220 kW | 10.0 bar |
| Mean piston speed at 2200 / min | 11.4 m / s |
| Starting speed | approx. 120 / min |
| Sense of rotation of engine when facing flywheel | ccw |
| Starting system | electric |
| Cooling water capacity, engine w/o recooling system | 15.0 l |
| Max. lube oil capacity, standard oil pan | 21.0 l |
| Weight of basic engine acc. to VDMA, w/o recooling system, alternator and starter | 840 kg |
| Weight of engine with fan, alternator and starter | 875 kg |
| Power-to-weight ratio, referred to VDMA weight and 220 kW | 3.8 kg / kW |
| Braking power of engine (exhaust brake) at an engine speed of 2200 / min | |
| w/o butterfly valve | 53 kW |
| with butterfly valve | 140 kW |
| Cold-starting ability w/o 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 | upon request |

## Power, torque and engine speed ratings

| | |
|---|---|
| Power and torque curves: | see diagram |
| Max. torque at 1100 ... 1600 / min | 1250 Nm |
| Minimum engine speed limit under load | 1000 / min |
| Maximum permissible engine speed with engine brake operation | 2350 / min |
| Min. idling speed | 500 / min |

## Installation data

| | |
|---|---|
| Total moment of inertia of engine with flywheel J = 1.1 | 2.1 kgm² |
| Combustion air quantity at 2200 / min | 20.6 m³ / min |
| Exhaust gas volume at 2200 / min, 220 kW and a counterpressure of 100 mbar at turbine outlet | 47 m³ / min |
| Heat to be dissipated from cooling water with uncooled exhaust gas manifold, without intercooler | 1600 kJ / kWh |
| Capacity of cooling water pump without cooling system at an engine speed of 2200 / min | 450 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. 25 mbar |
| – polluted | max. 50 mbar |
| Permissible exhaust gas counterpressure at turbine outlet at nominal power | max. 100 mbar |

## Starter, battery and alternator

| | |
|---|---|
| Starter | Bosch |
| Voltage | 24 V |
| Output | 5.4 kW |
| Weight | 16.0 kg |
| Starting battery | |
| Voltage | 24 V |
| Min. capacity | 110 Ah |
| Alternator | Bosch |
| Voltage | 28 V |
| Ampere | 10 / 35 A |
| Weight | 5 kg |

Power delivery starts at idling speed

## Injection pump and governor

In-line injection pump with control sleeve and electronic governing

Provision for installing standard engine speed and injection governors

## Consumption data

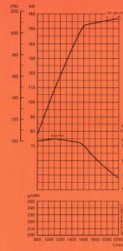
Fuel consumption see diagram

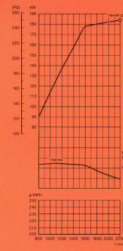
Lube oil consumption for an already run-in engine amounts up to 0.5% of effective fuel consumption. This value may be exceeded in isolated cases depending on application and running time.

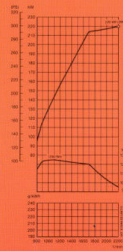
# Power, torque and fuel consumption of engine type OM 447 hLA.

**80/1269/EEC-89/491/EEC**
Maximum automotive power
Visco fan hydraulic loose

The power rating quoted above complies with the directive 88/77/EEC, alteration 91/542/EEC grade B, aiming at a reduction in gaseous emissions **and** particulates. Valid as of 1.10.1995 for new homologation (EURO 2).




The power specifications and the specific fuel consumption data refer to diesel fuel with a reference density of $\rho_{15}$ = 0.84 g/cm³ and a temperature of 35°C at the injection pump inlet.

**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.**

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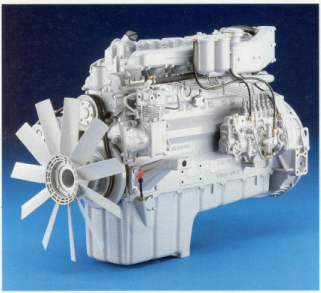


**Should you require further material, please consult the Vehicules Components Division in Stuttgart-Untertuerkheim:**

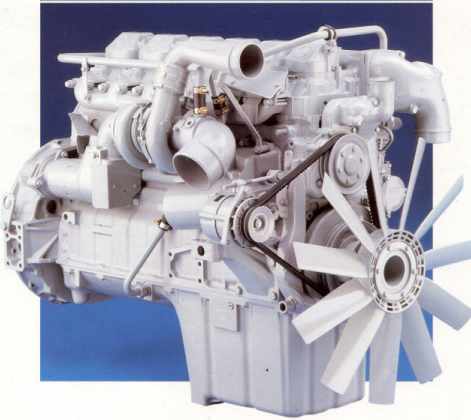
**Daimler-Benz AG**
**Produktbereich**
**Fahrzeugaggregate (PBA)**
**Postfach 600202**
**D-7000 Stuttgart 60**
**Telefon (0711) 17-0**
**Telefax (0711) 175 59 71**
**Telex 7 2 524-0**

MERCEDES-BENZ

Technical Data

# Mercedes-Benz Industrial Diesel Engine OM 447 LA 265 kW

| OM 447 | OM 447 A | OM 447 LA |
|---|---|---|



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# Power and torque of engine type OM 447 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.

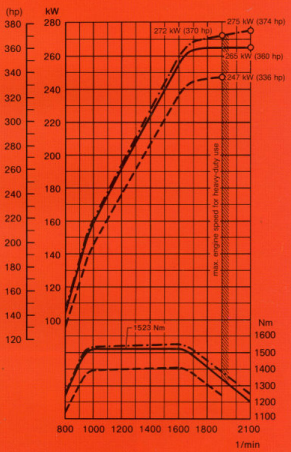
The ISO net brake fuel stop power **IFN** cannot be exceeded. It is permitted for 1 hour without interruption or intermittently within a period of 6 hours.

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 $\rho_{15} = 0.84$ g/cm³ 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.




447/026

# Technical Data.

**The OM 447 LA turbocharged in-line engine is part of the industrial engine series 400 offered by Daimler-Benz.**

A = 1315
B = 940
C = 1080
D = 452
E = 655
F = 161
S = centre of gravity

**Dimensions (in mm)**
Basic version; other versions on request.

## General

| | |
|---|---|
| Cylinder arrangement | vertical, in-line with exhaust-gas turbocharging and intercooler |
| Cooling system | recirculating water cooling |
| Operation | 4-stroke, direct injection |
| Number of cylinders | 6 |
| Cylinder bore | dia. 128 mm |
| Piston stroke | 155 mm |
| Total displacement | 11.967 l |
| Compression ratio | 16.25 : 1 |
| Mean effective pressure at 2100/min and 265 kW | 12.7 bar |
| Mean piston speed at 2100/min | 10.8 m/s |
| Starting speed | approx. 120/min |
| Sense of rotation of engine when facing flywheel | ccw |
| Starting system | electric |
| Cooling water capacity, engine w/o recooling system | 14 l |
| Max. lube oil capacity, standard oil pan | 24.5 l |
| Weight of basic engine acc. to VDMA, w/o recooling system, alternator and starter | 835 kg |
| Weight of engine with fan, alternator and starter | 870 kg |
| Power-to-weight ratio, referred to VDMA weight and 265 kW | 3.15 kg/kW |
| Braking power of engine (exhaust brake) at an engine speed of 2100/min w/o throttle valve | approx. 47 kW |
| with throttle valve | approx. 120 kW |
| Cold-starting ability w/o 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 | upon request |

## Power, torque and engine speed ratings

| | |
|---|---|
| Power and torque curves: see diagram | |
| Max. torque (80/1269/EEC) at 1000...1600/min | 1523 Nm |
| Lowest permissible continuous operating speed below 1500/min upon request | |
| Max. speed w/o load depending on degree of cyclic irregularity of governor | |
| Min. idling speed | 600/min |

## Installation data

| | |
|---|---|
| Total moment of inertia of engine with flywheel J = 1.1 | 2.1 kgm² |
| Combustion air quantity at 2100/min | 24 m³/min |
| Exhaust gas volume at 2100/min, 265 kW and a counterpressure of 60 mbar at turbine outlet | 60 m³/min |
| Heat to be dissipated from cooling water with uncooled exhaust gas manifold, without intercooler | 2300 kJ/kWh |
| Capacity of cooling water pump without cooling system at an engine speed of 2100/min | 460 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 counterpressure at turbine outlet at nominal power | max. 60 mbar |

## Starter, battery and alternator

| | |
|---|---|
| Starter | Bosch |
| Voltage | 24 V |
| Output | 5.4 kW |
| Weight | 16 kg |
| Starting battery | |
| Voltage | 24 V |
| Min. capacity | 110 Ah |
| Alternator | Bosch |
| Voltage | 28 V |
| Ampere | 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 %.

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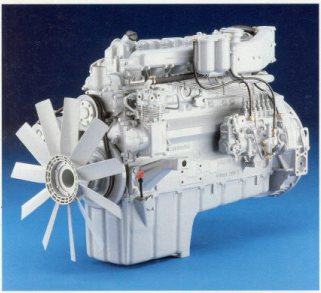

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