



Engine: OM 460 LA.E3A/1

360 kW, 2200 Nm, D458.991, Off Highway EU Stage IIIA, Construction + Industrial

The technical data specified here applies to the engine design as per the basic engine version (at ambient conditions of +25°C/1013 mbar). Variations as a result of variants/options in the delivery package are possible.

Information marked with "xxx" is not included in the basic scope of delivery or is not relevant to or invalid for the vehicle model designation. Information that is included in the basic scope of delivery but cannot yet be documented is marked with "---" for "in progress".

Subject to modifications.

Engine Description

Model	In-line Diesel engine with electronic engine management
Combustion Process	Four stroke Diesel direct injection
Injection System	High-pressure fuel-injection system with centrally positioned injection nozzles
Injection Pump	Single injection pumps, integrated in crankcase
Turbocharging System	Turbocharging with charge air cooling (air/air)
Turbocharger	1 - TC, with fixed geometry
Exhaust Gas Recirculation	xxx
Exhaust Gas Aftertreatment	xxx
Device for recycling crankcase gases	recycling at inlet pipes
Cooling System	Coolant recirculation cooling
Fan	without, Ring fan with viscous clutch (optional)
Crankcase	Grey cast iron, noise-optimized
Cylinder	Wet type cylinder liners
Cylinder Head	Single cylinder heads, grey cast iron
Valves	2 inlet valves and 2 exhaust valves per cylinder
Charge Air Housing / Charge Air Manifold	Noise-optimized, acoustically decoupled
Crankshaft	Forged, with counterweights
Connecting Rod	Forged
Piston	Aluminium piston with steel ring carrier and oil cooling
Oil Cooler	Integrated in crankcase
Gear Drive	Located at flywheel end
Belt Drive System	V-ribbed single belt with automatic belt tensioner
Engine Brake System	Constant throttle valve (optional) with engine brake flap (optional)
Oil- / Fuel Filter	Upright positon at engine front
Engine Illustration (Drawing)	000 05 405

General Data

Engine Code	OM 460 LA.E3A/1
No. of Cylinders	6
Displacement	12816 cm ³
Bore	128 mm



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Stroke	166 mm
Compression	18,0
Direction of Rotation (View From Flywheel)	Counterclockwise direction
Firing Order	1 - 5 - 3 - 6 - 2 - 4
Coldstart	
Coldstart Limit at Battery Capacity of 75%	-20 °C
Starting Speed at -20°C, min	100 rpm
Engine Compartment Temperature	
Engine Compartment, max. Permissible	100 °C
Generator, max. Permissible	80 °C
Moment of Inertia of the Rotating Mass	
Engine (with Flywheel and Vibration damper)	2,21 kgm ²
Flywheel (standard)	1,09 kgm ²
Bending Moment at Rear Edge of Flywheel Housing (stat.), max.	2000 Nm

Power, Torque

Rated Power	360 kW
at Engine Speed	1800 rpm
Torque, max.	2200 Nm
from Engine Speed	1300 rpm
Engine Speed	
Low Idle Speed	560-1300 ±50 rpm
Speed at which cut-off starts under load	1800 ±30 rpm
Maximum no-load speed	2240 +60/-190 rpm
Lowest Speed for Continuous Operating	1000 rpm
Power, Torque	
Overview	100 06 400
Single Curve	100 06 435
Mean Effective Pressure	
at Maximum Torque	21,57 bar
at Rated Power	18,72 bar
Power Reduction at Higher Altitudes	
Overview (Drawing)	100 70 007

Dimension, Weight

Dimension according to the basis engine type	
Length	1329 mm



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Width	785 mm
Height	1130 mm
Weight	
Wet	1065 kg
Dry	1015 kg
P/W Ratio kg/kW	
Wet	2,82 kg/kW
Dry	2,96 kg/kW

Coolant System

Cooling Water Circuit (Drawing)	see Installation Instructions
Heat Rejection, at Rated Power	160 kW
Coolant Temperature, max.	100 °C
Temperature Difference between Engine Inlet and Outlet, max.	8 K
Thermostat	
Begin of Opening	83 °C
Fully Open at	95 °C
Coolant Pump	
Transmission Ratio	0,52 opt. 0,49
Pump Characteristic (Drawing)	300 10 410
Pressure Protection of Cooling System	
min.	1,0 bar
Standard	1,0 bar
Coolant Volume in the Engine	15 liter
Fan	xxx

Intake Air System

Intake Air Volume	
At Rated Power	30,5 m ³ /min
max.	32,0 m ³ /min
Intake Air Volume (Drawing)	650 00 807
Combustion Intake Vacuum (stat.), at Rated Power	
Air Cleaner, at New Condition, max.	25 mbar
Air Cleaner, Service Point, max.	55 mbar
Permissible Air Temperature, max.	
at Engine Inlet	55 °C
Rise between Ambiente and Engine Inlet	8 K



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Charge Air System

Charge Air Cooler, Design Data (Drawing)	650 66 485
Charge Air Pressure (Overpr., stat.) after Turbocharger	
At Rated Power	2230 mbar
max.	2230 mbar
Pressure Drop Charge Air System at Rated Power, max.	100 mbar
Charge Air Temperature after Turbocharger	
At Rated Power	200 °C
max.	200 °C
Charge Air Temperature before Engine at Rated Power and 25°C intake air temperature, max.	46 °C
Heat Rejection at Rated Power, min.	91 kW

Fuel System

Diesel Fuel	
Requirements / Standard	DIN EN 590
Diesel Fuel from Synthesis or Hydrotreatment (XTL)	
Requirements / Standard	DIN EN 15940
FAME (Biodiesel / Fatty Acid Methyl Ester)	not released
Negative Fuel Depression at Engine Inlet, max.	
Without, resp. with New Pre-Filter	350 mbar
With Pre-Filter at Service Limit	600 mbar
Injection Nozzles	
Max. Injection Pressure	2000 bar
Number of Injection Holes	8
Fuel Consumption (Diesel Fuel)	
At Rated Power	210 g/kWh
At Full Load, min.	197 g/kWh
At Characteristic Map Best Point	196 g/kWh
Characteristic Map, Relative Diagram (Drawing)	100 96 001

Lubrication System

Oil Consumption, max., Related to Fuel Consumption	0,5 %
Engine Inclinations	
Installation Inclination around the x-axis	0 Degree
Installation Inclination around the y-axis	see option MQ..



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Exhaust System

Exhaust Gas Mass, at Rated Power	600 g/s
Exhaust Gas Volume, at Rated Power	71 m ³ /min
Exhaust Gas Temperature	
at Rated Power	490 °C
max.	570 °C
Exhaust Back Pressure (stat.), at Rated Power	220 mbar
Exhaust Silencer	
Volume	160 dm ³

Auxillaries

Alternator	
Voltage	28 V
Current	80 A
Starter Motor	
Voltage	24 V
Rating	7,0 kW
Air Compressor	
Air Compressor type	Engine without Air Compressor, options: see drawings
Power Steering Pump	
Series	without Power Steering Pump, options: see drawings

Power Take-Off

Power - Take - Off, Rear	opt. PTO for Hydraulic Pump SAE A / SAE B
Front Engine Power Take Off (FEPTO), axial	Series Flange Ø146 - 6 x M8, opt. Ø148 - 12 x M12, opt. Ø155,5 - 8 x Ø14
Front Engine Power Take Off (FEPTO), radial	opt. Additional Pulley Ø307 PK 9, opt. Ø190 Optibelt VB

Engine Brake

Brake Power	xxx
Drag Power	
at max. Permissible Brake Speed, Short-Time	70 kW
Drag Power (Drawing)	700 00 711
Brake Speed	
max. Permissible, Continuous	2300 rpm
max. Permissible, Short-Time	2500 rpm